IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

EXPRESS MOBILE, INC.	)	
Plaintiff,	)	
	)	Civil Action No. 6:20-cv-00801
v.	)	
	)	**JURY TRIAL DEMANDED**
EXPEDIA GROUP, INC.	)	
	)	
Defendant.	)	

COMPLAINT

Plaintiff Express Mobile, Inc. ("Express Mobile" or "Plaintiff"), by and through its undersigned counsel, brings this action for patent infringement against Defendant Expedia Group, Inc. ("Expedia" or "Defendant") and alleges as follows:

NATURE OF THE ACTION

1. This is a civil action arising under 35 U.S.C. § 271 for Expedia's infringement of Express Mobile's United States Patent Nos. 6,546,397 ("the '397 patent"), 7,594,168 ("the '168 patent"), 9,063,755 ("the '755 patent"), 9,471,287 ("the '287 patent"), and 9,928,044 ("the '044 patent") (collectively the "Patents-In-Suit").

THE PARTIES

2. Plaintiff Express Mobile, Inc. is a Delaware corporation with a place of business at 38 Washington Street, Novato, CA 94947.

3. Upon information and belief, Defendant Expedia Group, Inc. is a Delaware corporation with physical locations in Austin, Houston, and Dallas, Texas from which it regularly conducts business related to this action.

Express Mobile, Inc., Exhibit 2005
Page 2005 - 1
IPR2022-00597, Google LLC. v. Express Mobile, Inc.

4. Expedia is an online travel company providing business and leisure travelers with tools and services to research, plan, and book travel. Expedia conducts its business and provides its tools and services to consumers through a large portfolio of travel brands and businesses (collectively, the "Expedia Brands and Subsidiaries"). Expedia infringes the Patents-In-Suit by implementing, without authorization, Express Mobile's patented technologies in a number of its products and services throughout the Expedia Brands and Subsidiaries, including, *inter alia*, the www.expedia.com website and related mobile application, the www.hotels.com website and related mobile application, the www.orbitz.com website and related mobile application, and the www.travelocity.com website and related mobile application (collectively the "Expedia Group products"), and the www.vrbo.com website and related mobile application (the "Vrbo products"), which are marketed, offered, and distributed to users of mobile and other devices by Expedia throughout the United States, including in this Judicial District.

5. Upon information and belief, the Expedia Brands and Subsidiaries are operated, owned, and controlled by and through wholly-owned and controlled subsidiaries of Expedia.

6. Upon information and belief, Expedia and the Expedia Brands and Subsidiaries, which include Expedia's "Global Network of Brands" (Exhibit I ("Our Brands" listed on Expedia website)) operate as a joint enterprise. According to Expedia's 2019 10-K Form, Expedia has numerous travel brands in its portfolio. Exhibit J (Expedia's 2018 Form 10-K at 1, available at https://ir.expediagroup.com/static-files/46fd5c30-a786-4de4-8dd4-d2859c6523e6). Expedia's "technology platforms" support several of Expedia's brands and businesses, including the expedia.com, hotels.com, orbitz.com, travelocity.com, and vrbo.com websites. *Id*. at 7.

7. Thus, upon information and belief, Expedia is jointly responsible for infringement of the Patents-In-Suit in the U.S. by each and all of the Expedia Brands and

Subsidiaries.

JURISDICTION AND VENUE

8. This is a civil action for patent infringement arising under 35 U.S.C. § 271.

9. This Court has subject matter jurisdiction over the matters pleaded herein under 28 U.S.C. §§ 1331 and 1338(a).

10. This Court has general and specific personal jurisdiction over Defendant because it conducts substantial business in the forum, directly and/or through intermediaries, including: (i) at least a portion of the infringing activity alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to person in this Judicial District, and (iii) having a regular and established place of business in this state and in this Judicial District.

11. Plaintiff's cause of action arises, at least in part, from Defendant's presence in, and contacts with and activities in this Judicial District and the State of Texas. Upon information and belief, Defendant regularly conducts and solicits business in, engages in, other persistent courses of conduct in, and/or derives substantial revenue from goods and services provided to residents of this Judicial District and the State of Texas. Upon information and belief, Defendant conducts a significant, persistent and regular amount of business in this Judicial District through sales by its Global Network of Brands, subsidiaries, distributors, customers, and resellers and through online marketing, and derives substantial revenue from such business. Exhibit I.

12. Venue is proper in this Judicial District under 28 U.S.C. §§ 1391(b), (c), and 1400(b). Upon information and belief, Defendant has committed substantial acts of infringement in this Judicial District. Venue is proper for Defendant in this Judicial District because, upon information and belief, Defendant has committed substantial acts of infringement in this Judicial

District. Upon information and belief, the acts of the Expedia Brands and Subsidiaries in this Judicial District have been at the direction and control of Defendant. Additionally, Defendant has, through its Global Network of Brands and its partner program that it runs and maintains on behalf and for the benefit of the Expedia Brands and Subsidiaries, a regular and established place of business in this Judicial District and in the State of Texas. Exhibit K (Screenshot from https://lifeatexpediagroup.com/locations describing Expedia Austin office), Exhibit L (Screenshot from https://www.builtinaustin.com/company/expedia-group indicating that Expedia has at least three offices in Austin), Exhibit M (Expedia Austin office jobs, from https://lifeatexpediagroup.com/jobs?location=United%20States%20-%20Texas%20-%20Austin).

THE PATENTS-IN-SUIT

13. On April 8, 2003, United States Patent No 6,546,397 entitled "Browser Based Web Site Generation Tool and Run Time Engine," was duly and legally issued to Steven H. Rempell after full and fair examination. Plaintiff is the lawful owner of all right, title, and interest in and to the '397 patent, including the right to recover for infringement thereof. A copy of the '397 patent is attached as Exhibit A.

14. The claimed inventions of the '397 patent solve technical problems related to the creation and generation of websites. For example, the inventions enable the creation of websites through browser-based visual editing tools, for example, selectable settings that describe website elements, with one or more settings corresponding to commands. These features are implemented utilizing computer technology, including a virtual machine.

15. The claims of the '397 patent do not merely describe performing some known business practice on the Internet. Instead, the claims of the '397 patent recite inventive concepts that are rooted in computerized website creation technology and overcome problems specific to

this realm.

16. The claimed inventions of the ‘397 patent do not merely apply routine or conventional technologies for website creation and generation. Instead, the claims describe a browser-based website creation system and method in which information representing user-selected settings for a website are stored in a database, and the stored information is retrieved to generate the website.

17. The claims in the ‘397 patent do not preempt all ways of creating and generating websites or web pages, all uses of website authoring tools, nor any other well-known prior art technology.

18. Each claim of the ‘397 patent thus recites a combination of elements sufficient to ensure that the claim amounts to significantly more than a patent- ineligible concept.

19. On September 22, 2009, United States Patent No 7,594,168 entitled “Browser Based Web Site Generation Tool and Run Time Engine,” was duly and legally issued to Steven H. Rempell after full and fair examination. Plaintiff is the lawful owner of all right, title, and interest in and to the ‘168 patent, including the right to recover for infringement thereof. A copy of the ‘168 patent is attached as Exhibit B.

20. The claimed inventions of the ‘168 patent solve technical problems related to the creation and generation of websites. For example, the inventions utilize browser-based build tools and a user interface to enable the creation of websites. These inventions greatly improve the productivity of the designer utilizing an innovative implementation for styles. These features are implemented utilizing computer technology.

21. The claimed inventions of the ‘168 patent do not perform a known business practice on the Internet. Instead, the claims of the ’168 patent recite inventive concepts rooted

in computerized website creation technology, and overcome problems specifically arising in this realm.

22. The claimed inventions of the '168 patent do not merely apply routine or conventional technologies for website creation and generation. Instead, the inventions describe a browser-based website creation system including a server comprising a build engine configured to create and apply styles to, for example, a website with web pages comprised of objects.

23. The claims in the '168 patent do not preempt all ways of creating and generating websites or web pages, all uses of website authoring tools, nor any other well-known or prior art technology.

24. Each claim of the '168 patent thus recites a combination of elements sufficient to ensure that the claim amounts to significantly more than a patent-ineligible concept.

25. In Case No. 3:18-CV-04679-RS, an infringement action filed by Plaintiff in the Northern District of California, the defendant in that action, Code and Theory LLC, brought a Motion to Dismiss Plaintiff's Complaint, asserting that the '397 and '168 patents do not claim patent-eligible subject matter under 35 U.S.C. § 101 as a matter of law. (Case No. 3:18-CV-04679-RS D.I. 35.) Subsequent briefing included Plaintiff Express Mobile, Inc.'s Opposition to Defendant Code and Theory LLC's Motion to Dismiss Plaintiff's Complaint (Case No. 3:18-CV-04679-RS D.I. 40), and Motion to Dismiss Plaintiff's Complaint [sic] (Case No. 3:18-CV-04679-RS D.I. 41). Each of those filings is incorporated by reference into this Complaint.

26. In Case No. 3:18-CV-04688-RS, an infringement action filed by Plaintiff in the Northern District of California, the defendant in that action, Pantheon Systems, Inc., brought a Motion to Dismiss Counts I and II of Plaintiff's First Amended Complaint asserting that the '397

and '168 patents were directed to the abstract idea of creating and displaying webpages based upon information from a user with no further inventive concept, and purportedly ineligible for patenting under 35 U.S.C. § 101. (Case No. 3:18-CV-04688-RS D.I. 26.) Subsequent briefing included Plaintiff's Answering Brief in Opposition of Defendant's Motion to Dismiss (Case No. 3:18-CV-04688-RS D.I. 32), and Reply in Support of Defendant's Motion to Dismiss Counts I and II of Plaintiff's First Amended Complaint (Case No. 3:18-CV-04688-RS D.I. 34). Each of those filings is incorporated by reference into this Complaint.

27. After a motion hearing and a consideration of the respective pleadings, the Hon. Richard Seeborg denied both motions with respect to both patents in a joint order, because "the patents purport to describe a novel technological approach to creating websites on the internet." (Case No. 3:18-CV-04679-RS D.I. 45; Case No. 3:18-CV-04688-RS D.I. 40; attached as Exhibit F.) In denying the motions, Judge Seeborg made several findings:

- "The patents here are directed at a purportedly revolutionary technological solution to a technological problem—how to create webpages for the internet in a manner that permits 'what you see is what you get' editing, and a number of other alleged improvements over the then-existing methodologies." *Id*. at 5.
- The claims of the '397 and '168 patents are "directed to a specific improvement to the way computers operate," and "it simply cannot be said on the present record that the claims are drawn so broadly as to be divorced from the potentially patent-eligible purported technological improvements described in the specification." *Id*. at 5-6.

28. In C.A. 2:17-00128, an infringement action filed by Plaintiff in the Eastern District of Texas, the defendant in that action, KTree Computer Solutions, brought a Motion for Judgement on the Pleadings, asserting that the '397 and '168 patents were invalid as claiming abstract subject matter under 35 U.S.C. § 101. (C.A. 2:17-00128 D.I. 9.) Subsequent briefing included Plaintiff's Response and related Declarations and Exhibits (C.A. 2:17-00128 D.I. 17, 22-24), KTree's Reply (C.A. 2:17-00128 D.I. 25), and Plaintiff's Sur-Reply and related

Declarations and Exhibits (C.A. 2:17-00128 D.I. 26-27). Each of those filings is incorporated by reference into this Complaint.

29. After consideration of the respective pleadings, Magistrate Judge Payne recommended denial of KTree's motion, without prejudice, holding that "the claims appear to address a problem particular to the internet: dynamically generating websites and displaying web pages based on stored user-selected settings" and further stating "the asserted claims do not bear all of the hallmarks of claims that have been invalidated on the pleadings by other courts in the past. For example, the claims are not merely do-it-on-a-computer claims." (C.A. 2:17-00128 D.I. 29, attached as Exhibit G.) No objection was filed to the Magistrate Judge's report and recommendation and the decision therefore became final.

30. In Case Nos. 1:18-CV-01173-RGA and 1:18-CV-01175-RGA, infringement actions filed by Plaintiff in the District of Delaware, the respective defendants in those actions, Dreamhost LLC and Hostway Services, Inc., brought Motions to Dismiss claims of the '397 and '168 patents on the basis of invalidity under 35 U.S.C. § 101. (Case No. 1:18-CV-01173-RGA D.I. 14; Case No. 1:18-CV-01175-RGA D.I. 14.) Subsequent briefing included Plaintiff's Responses and related Declarations and Exhibits (Case No. 1:18-CV-01173-RGA D.I. 18-21; Case No. 1:18-CV-01175-RGA D.I. 17-19), and defendants' Replies (Case No. 1:18-CV-01173-RGA D.I. 24; Case No. 1:18-CV-01175-RGA D.I. 23). Each of these filings is incorporated by reference.

31. After consideration of the respective pleadings, Judge Andrews denied both motions in a joint order, pointing to factual allegations of inventiveness identified by the Plaintiff, and an expert declaration explaining inventiveness of the claims, noting that such factual issues preclude a finding of invalidity on a motion to dismiss. (Case No. 1:18-CV-01173-

RGA D.I. 43; Case No. 1:18-CV-01175-RGA D.I. 42; attached as Exhibit H.)

32. On June 23, 2015, United States Patent No 9,063,755 entitled "Systems and methods for presenting information on mobile devices," was duly and legally issued to Steven H. Rempell, David Chrobak and Ken Brown after full and fair examination. Plaintiff is the lawful owner of all right, title, and interest in and to the '755 patent, including the right to recover for infringement thereof. A copy of the '755 patent is attached as Exhibit C.

33. The inventions of the '755 patent utilize inventive concepts to solve technical problems, such as those associated with methods and systems for displaying dynamic content on displays of devices, providing more efficient ways of generating code for more uniformly displaying dynamic content across different kinds of devices. For example, the inventions of the '755 patent allow a data-efficient and flexible association between a symbolic name and a UI object (e.g., a UI object for a widget), corresponding to a web component of a web service, that is defined for presentation on a display of a device. A device-independent application including the symbolic name is produced and provided to the device, together with a device-platform-dependent player.

34. The claimed inventions of the '755 patent allow the UI object to be efficiently displayed across different kinds of devices (e.g., PC, mobile or tablet; or different browsers, operating systems, and applications, including also for example both native and browser-based applications). In turn, a user can enter an input value to the UI object, and obtain an output value based on a web service associated with the UI object, the input value and output value also being communicated through symbolic names to provide an additional level of efficiency. These inventive features are implemented utilizing computer technology and solve technical problems in the prior art.

35. The claims of the '755 patent do not recite merely the performance of a known business practice on the Internet. Instead, the claims of the '755 patent recite inventive concepts concerning the computerized, data-efficient generation of content (e.g., a UI object for providing dynamic content) on displays for different types of devices, such as PC, tablet, or mobile devices, or different browsers and applications. For example, the claims of the '755 patent utilize symbolic name associations and provide device-independent applications including those symbolic names, together with device-platform-dependent players, to devices. Further, input values and output values for the defined content are also communicated as symbolic names. Such features are specifically grounded in, and overcome problems with data efficiency and flexibility specifically arising in, the realm of computerized content generation and display technologies, and are not well-understood, routine, and conventional elements.

36. For example, the claimed inventions of the '755 patent recite innovative, technical improvements that associate symbolic names with defined UI objects (e.g., UI objects for a widget) corresponding to web components of web services, and produce device-independent applications including those symbolic names, together with device-dependent players, to provide more uniform, data-efficient content display across different types of devices.

37. The technology claimed in the '755 patent does not preempt all ways for the computerized generation of code for a display of a device, nor any other well-known or prior art technology. For example, the specific, innovative technical improvements claimed in the '755 patent do not preempt well-known methods of generating code for a display of a device by programming in HTML or JavaScript code.

38. Each claim of the '755 patent thus recites a combination of elements sufficient to ensure that the claim amounts to significantly more than a patent on an ineligible concept.

39. On October 18, 2016, United States Patent No 9,471,287 entitled "Systems and Methods for Integrating Widgets on Mobile Devices," was duly and legally issued to Steven H. Rempell, David Chrobak and Ken Brown after full and fair examination. Plaintiff is the lawful owner of all right, title, and interest in and to the '287 patent, including the right to recover for infringement thereof. A copy of the '287 patent is attached as Exhibit D.

40. The inventions of the '287 patent solve technical problems, such as those associated with methods and systems for displaying dynamic content on displays of devices by providing more efficient ways of generating code for more uniformly displaying dynamic content across different kinds of devices. For example, the inventions of the '287 patent allow a data-efficient and flexible association between a symbolic name and a UI object (e.g., a UI object for a widget) corresponding to a web component of a web service, that is defined for presentation on a display of a device. The defined UI object can be selected by a user of an authoring tool or automatically selected by a system based on a web component selected by the user. Further, the symbolic name has a data format type corresponding to a subclass of UI objects that support the data format type of the symbolic name. A device-independent application including the symbolic name is then produced and provided to the device together with a device-platform-dependent player. Such operations provide a user-friendly platform allowing the UI object to be efficiently defined and more uniformly displayed across different kinds of devices (e.g., PC, mobile or tablet; or different browsers, operating systems, and applications, including also for example both native and browser-based applications). These features are implemented utilizing computer technology and solve technical problems in the prior art.

41. The claims of the '287 patent do not recite merely the performance of a known business practice on the Internet. Instead, the claims of the '287 patent recite inventive concepts

grounded in the computerized, data-efficient definition and generation of content (e.g., a UI object for providing dynamic content) on displays for different types of devices, such as PC, tablet, or mobile devices, or different browsers and applications. Such features are specifically grounded in, and overcome problems with data efficiency and flexibility specifically arising in, the realm of computerized content generation and display technologies, and are not well-understood, routine, and conventional elements.

42. For example, the claimed inventions of the '287 patent recite innovative, technical improvements that associate symbolic names with UI objects (e.g., UI objects for a widget) corresponding to web components of web services that are manually or automatically selected, and defined based on, for example, data format type, and produce device-independent applications including those symbolic names, together with device-dependent players, to provide more uniform, data-efficient content display across different types of devices.

43. The technology claimed in the '287 patent does not preempt all ways for the computerized generation of code for a display of a device nor any other well-known or prior art technology. For example, the specific, innovative technical improvements do not preempt well-known methods of generating code for a display of a device by programming in HTML or JavaScript code.

44. Each claim of the '287 patent thus recites a combination of elements sufficient to ensure that the claim amounts to significantly more than a patent on an ineligible concept.

45. On March 27, 2018, United States Patent No 9,928,044 entitled "Systems and Methods for Integrating Widgets on Mobile Devices," was duly and legally issued to Steven H. Rempell, David Chrobak and Ken Brown after full and fair examination. Plaintiff is the lawful owner of all right, title, and interest in and to the '044 patent, including the right to recover for

infringement thereof. A copy of the ‘044 patent is attached as Exhibit E.

46. The inventions of the ‘044 patent solve technical problems, such as those associated with methods and systems for displaying dynamic content on displays of devices by providing more efficient ways of generating, storing, and retrieving code for displaying dynamic content more uniformly across different kinds of devices. For example, the inventions of the ‘044 patent allow a data-efficient and flexible association between a symbolic name with a UI object (e.g., a UI object for a widget) corresponding to a web component of a web service, that is manually or automatically selected. The symbolic name has a data format type corresponding to a subclass of UI objects that support the data format type of the symbolic name, and is only available to UI objects that support the data format of the symbolic name. Information representative of the defined UI object can be stored in a database, and subsequently retrieved from the database to build an application consisting of at least a portion of the database using a player, which uses the information to generate one or more web pages for display across different kinds of devices (e.g., PC, mobile or tablet; or different browsers, operating systems, and applications, including also for example both native and browser-based applications). These features are implemented utilizing computer technology and solve technical problems in the prior art.

47. The claims of the ‘044 patent do not recite merely the performance of a known business practice on the Internet. Instead, the claims of the ‘044 patent recite inventive concepts grounded in the computerized, data-efficient definition, selection, storage and generation of content (e.g., a UI object providing dynamic content) on displays for different types of devices, such as PC, tablet, or mobile devices, or different browsers and applications. Such features are specifically grounded in, and overcome problems with data efficiency and flexibility specifically

arising in, the realm of computerized content generation and display technologies, and are not well-understood, routine, and conventional elements.

48. For example, the claimed inventions of the '044 patent recite innovative, technical improvements that select and associate symbolic names with defined UI objects (e.g., UI objects for a widget) corresponding to web components of web services based on, for example, data format type, storing information representative of such settings in a database, and building applications, which together with players, generate more uniform, data-efficient content display across different types of devices.

49. The technology claimed in the '044 patent does not preempt all ways for the computerized generation of code for a display of a device nor any other well-known or prior art technology. For example, the specific, innovative technical improvements do not preempt well-known methods of generating code for a display of a device by programming in HTML or JavaScript code.

50. Each claim of the '044 patent thus recites a combination of elements sufficient to ensure that the claim amounts to significantly more than a patent on an ineligible concept.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 6,546,397

51. Plaintiff incorporates by reference paragraphs 1 to 50 above as if fully set forth herein.

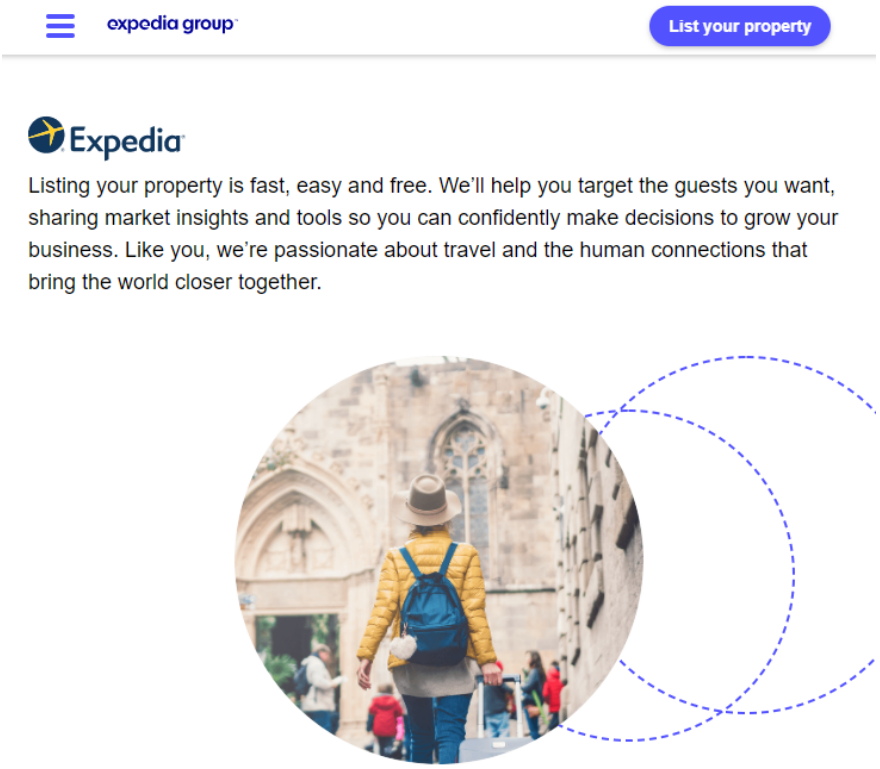
52. On information and belief, Defendant has infringed the '397 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, directly and/or indirectly.

53. On information and belief, Defendant has infringed the '397 patent by performing, without authority, one or more of the following acts during relevant time periods:

making, using, offering to sell, selling within, and importing into, the United States products and services that practice the claimed inventions of the '397 patent, including but not limited to the Expedia Group website builder platform for the Expedia Group products (the "Expedia platform"), and the Vrbo website builder platform, also known as the HomeAway platform, for the Vrbo products (the "Vrbo platform") (collectively the "Accused Instrumentalities").

The Expedia Platform

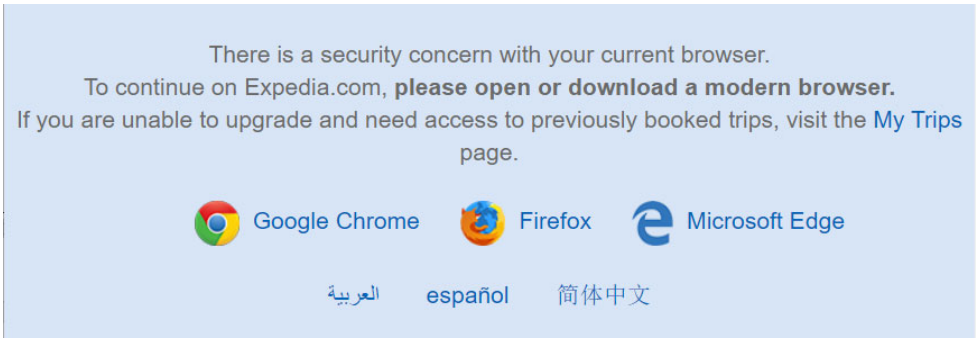
54. The Expedia platform infringed claim 1 of the '397 patent through a combination of features that collectively practiced each limitation of claim 1. By way of example, the Expedia platform provided a browser-based platform for creating property listing websites for hotels and other lodgings where travelers could view and book accommodations.



[1]

[1] Unless otherwise noted, the images presented in this Complaint were generated for investigative purposes by testing the Accused Instrumentalities on https://welcome.expediagroup.com/en, https://www.expedia.com/, and

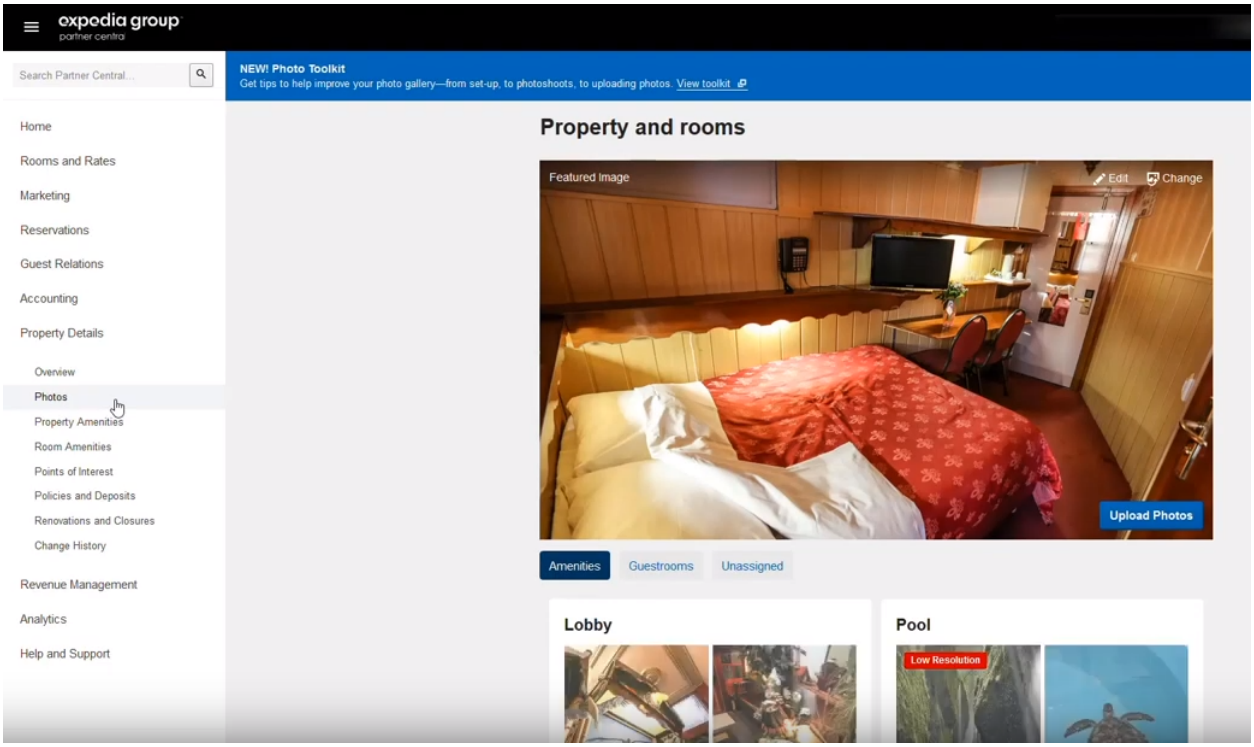
55. The property listing websites were created on and for computers having a browser and a virtual machine capable of generating displays. For example, the Expedia platform displayed content through modern browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge, which used browser engines (i.e., virtual machines) capable of generating a display by interpreting and executing code such as JavaScript and HTML to render web pages on a computer.



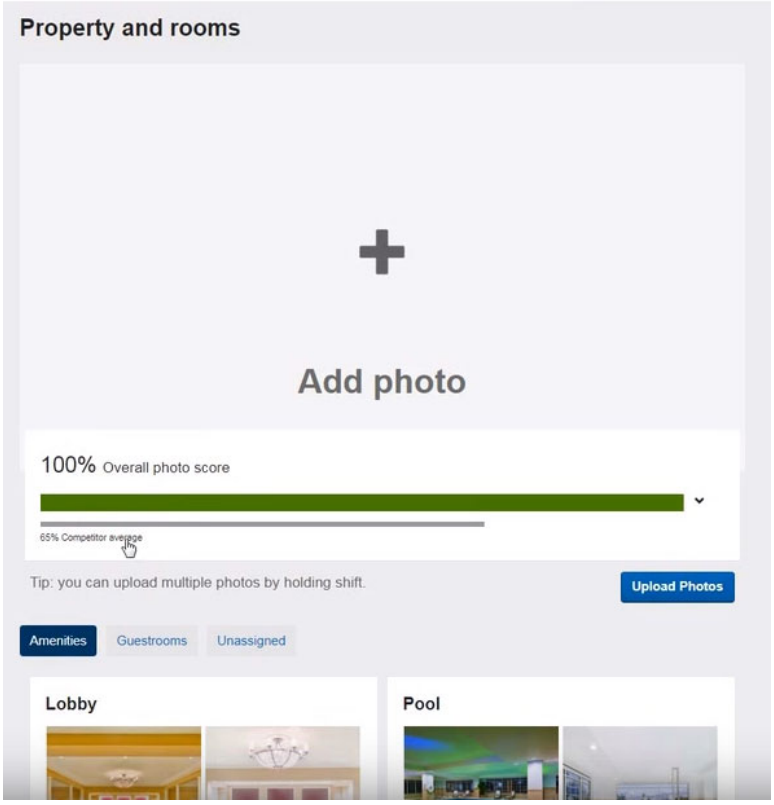
https://www.expedia.com/upgradebrowser

56. The Expedia platform allowed customization of the location, amenities, prices, policies, descriptions, images, and rules for guests for a property listing website, by presenting a menu with a panel of settings where a user could select settings describing elements for the website.

https://www.vrbo.com/.

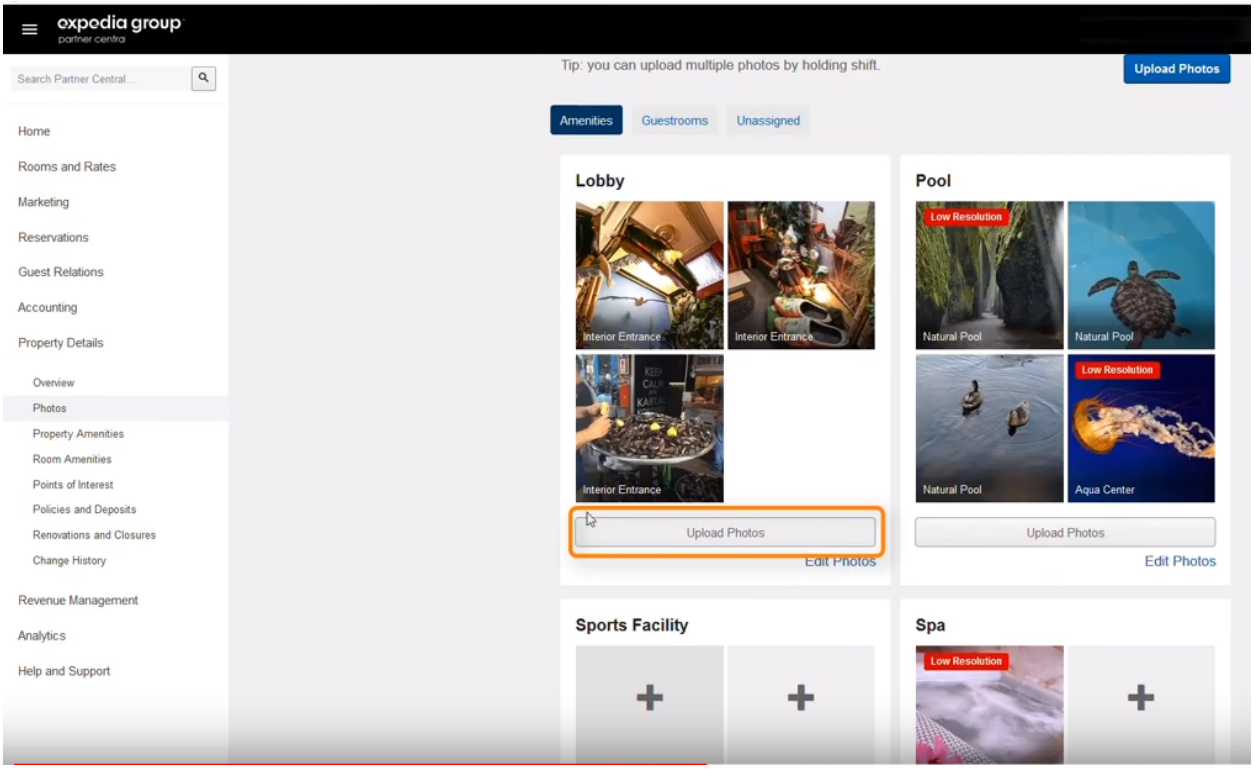


57. For example, a user could select images for different areas of the property, such as the lobby and pool.



58. As described above, the Expedia platform comprised a browser-based platform, and presented a user selectable panel of settings through a browser of a computer. Websites were rendered by browser engines (i.e., virtual machines), based on commands to the browser engines, for display on browsers.

59. When a desired setting was selected, a display in accordance with that selection was generated substantially contemporaneously with the selection. In the example below, when an image for a property's photo gallery is selected, the image is displayed substantially contemporaneously with the selection of the image. On information and belief, this functionality was present during relevant time periods of infringement.


expedia group
partner central
Search Partner Central...
Home
Rooms and Rates
Marketing
Reservations
Guest Relations
Accounting
Property Details
Overview
Photos
Property Amenities
Room Amenities
Points of Interest
Policies and Deposits
Renovations and Closures
Change History
Revenue Management
Analytics
Help and Support
Tip: you can upload multiple photos by holding shift.
Upload Photos
Amenities
Guestrooms
Unassigned
Lobby
Interior Entrance
Interior Entrance
Interior Entrance
Upload Photos
Edit Photos
Pool
Low Resolution
Natural Pool
Natural Pool
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Sports Facility
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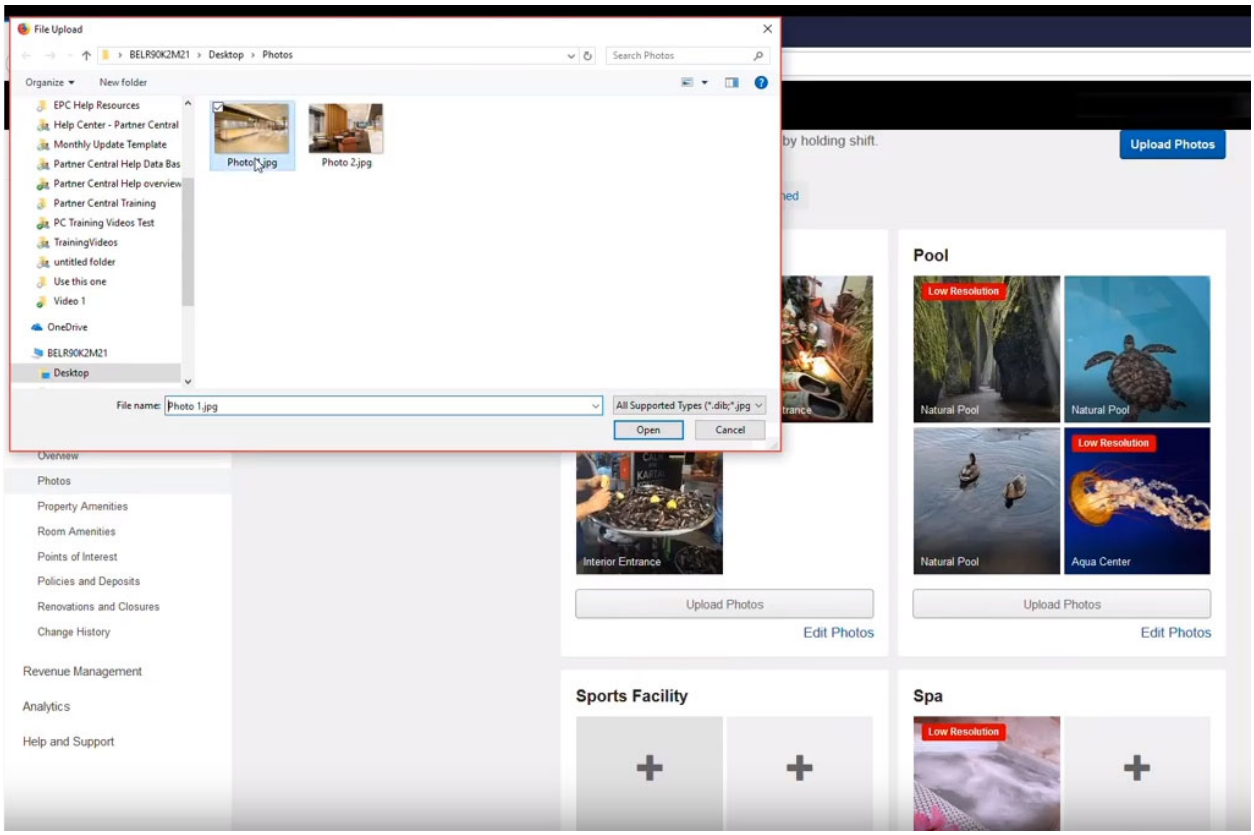
File Upload
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Organize
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EPC Help Resources
Help Center - Partner Central
Monthly Update Template
Partner Central Help Data Bas
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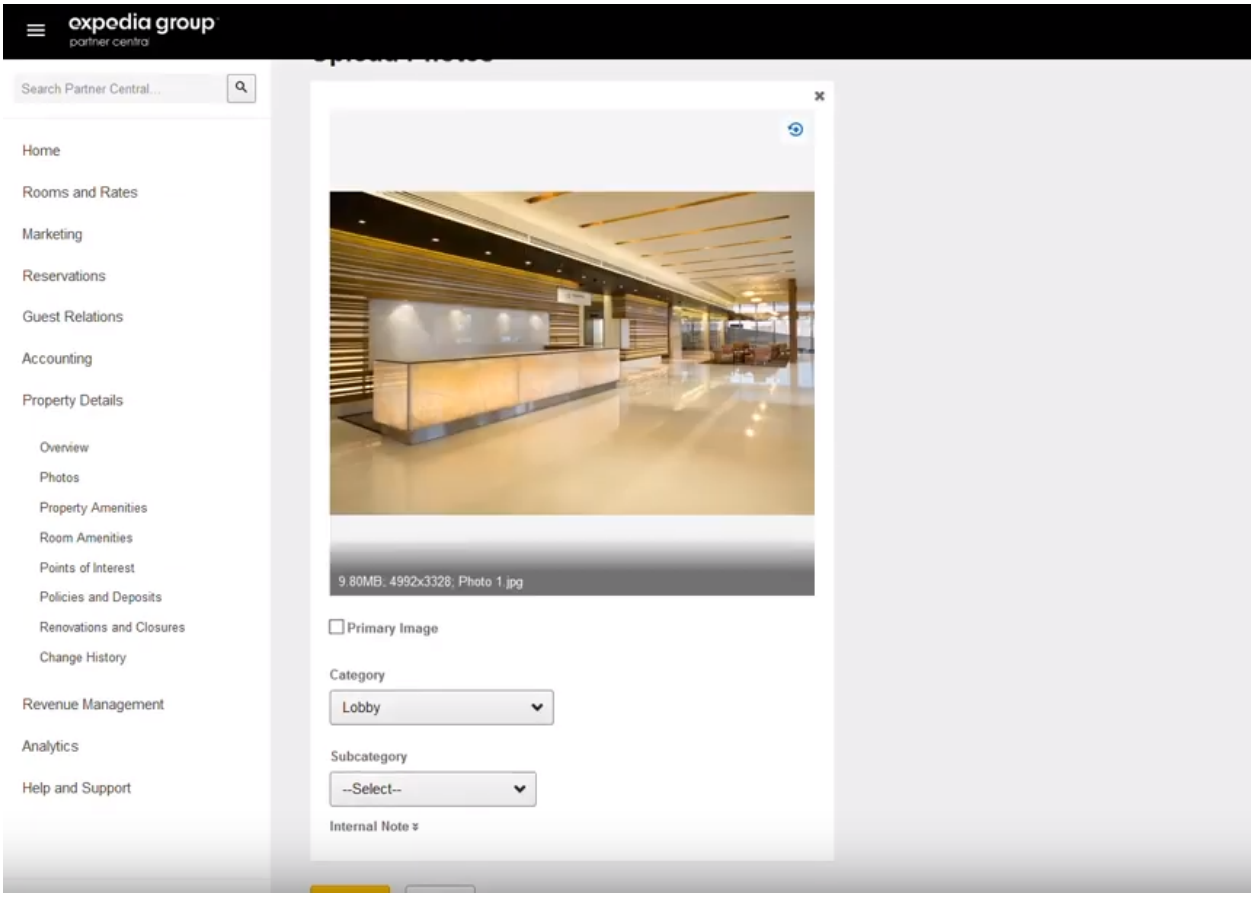
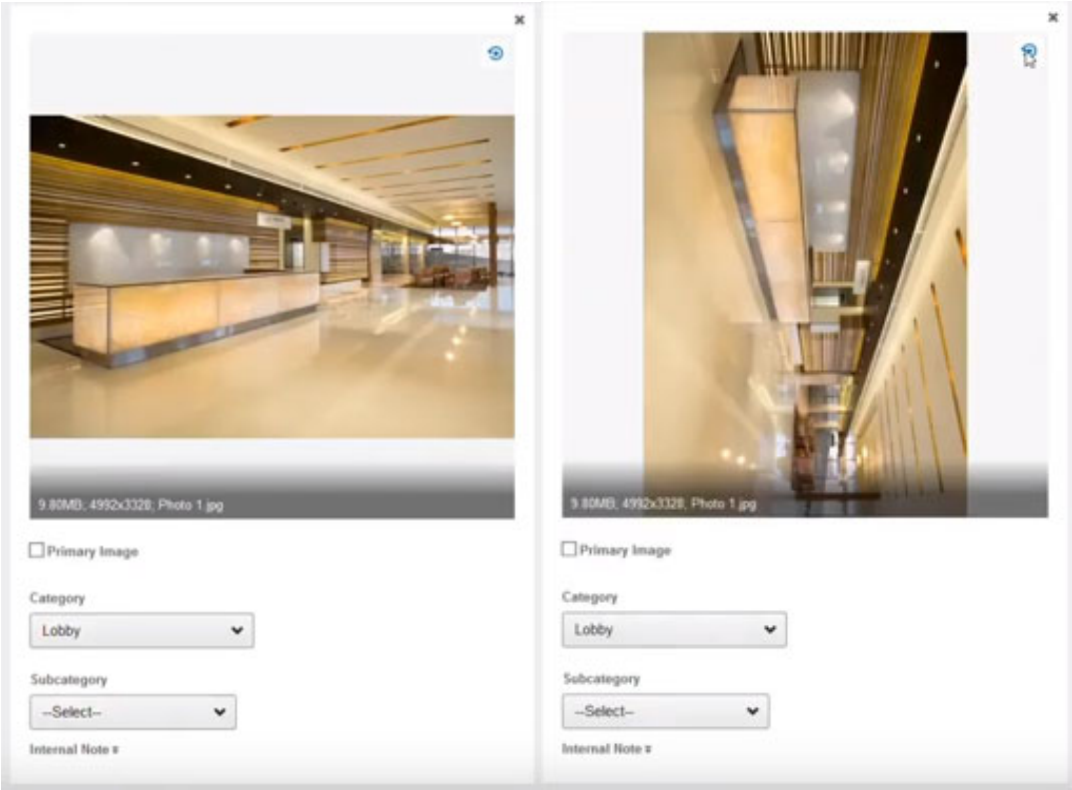
by holding shift.
Upload Photos
Pool
Low Resolution
Natural Pool
Natural Pool
Natural Pool
Low Resolution
Aqua Center
Interior Entrance
Upload Photos
Edit Photos
Upload Photos
Edit Photos
Sports Facility
Spa
Low Resolution



60. As shown in another example below, when a user selected a setting for rotating an uploaded image, the rotated image is displayed substantially contemporaneously with the selection thereof. On information and belief, this functionality was present during relevant time periods of infringement.



61. Upon selection of the desired setting, information representative of the selected setting was stored in an Amazon Web Services (AWS) database that supported the property listing website.

Expedia Group Increases Agility and Resiliency by Going All In on AWS

2018

Expedia Group is all in on AWS, with plans to migrate 80 percent of its mission-critical apps from its on-premises data centers to the cloud in the next two to three years. By using AWS, Expedia Group has become more resilient. Expedia Group's developers have been able to innovate faster while saving the company millions of dollars. Expedia Group provides travel-booking services across its flagship site Expedia.com and about 200 other travel-booking sites around the world.

https://aws.amazon.com/solutions/case-studies/expedia/

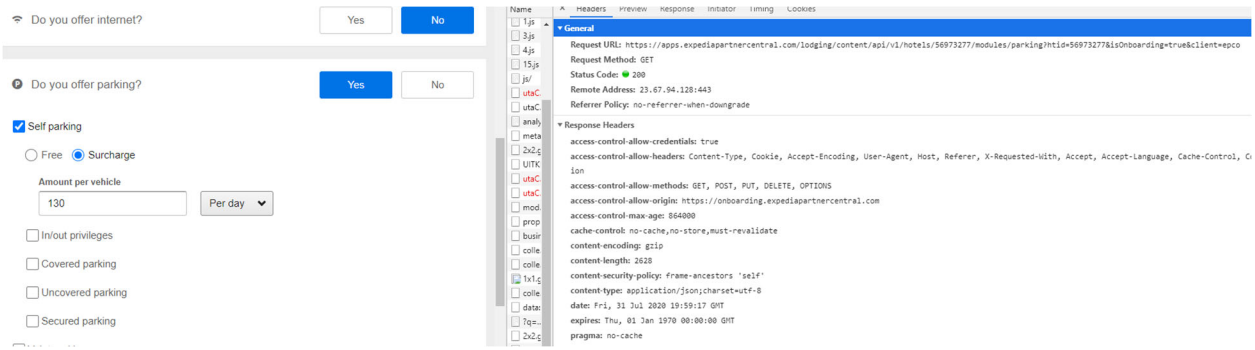
62. AWS provided cloud services, and among other things, allowed the Expedia

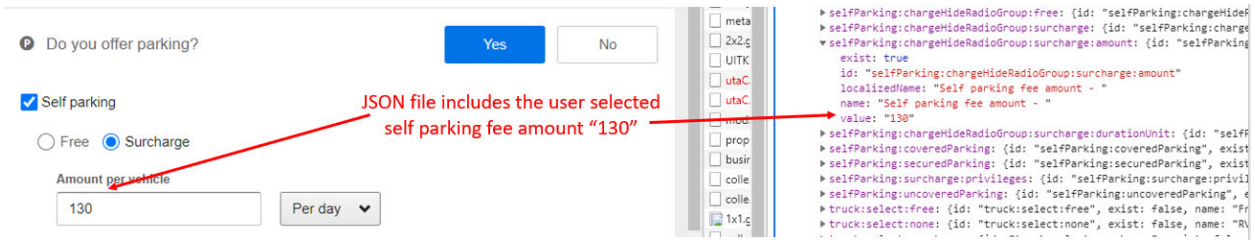
platform to store files relating to websites on a cloud, using managed databases such as MySQL and a Content Delivery Network (CDN).

> In simple words AWS allows you to do the following things-
>
> 1. Running web and application servers in the cloud to host dynamic websites.
> 2. Securely store all your files on the cloud so you can access them from anywhere.
> 3. Using managed databases like MySQL, PostgreSQL, Oracle or SQL Server to store information.
> 4. Deliver static and dynamic files quickly around the world using a Content Delivery Network (CDN).
> 5. Send bulk email to your customers.

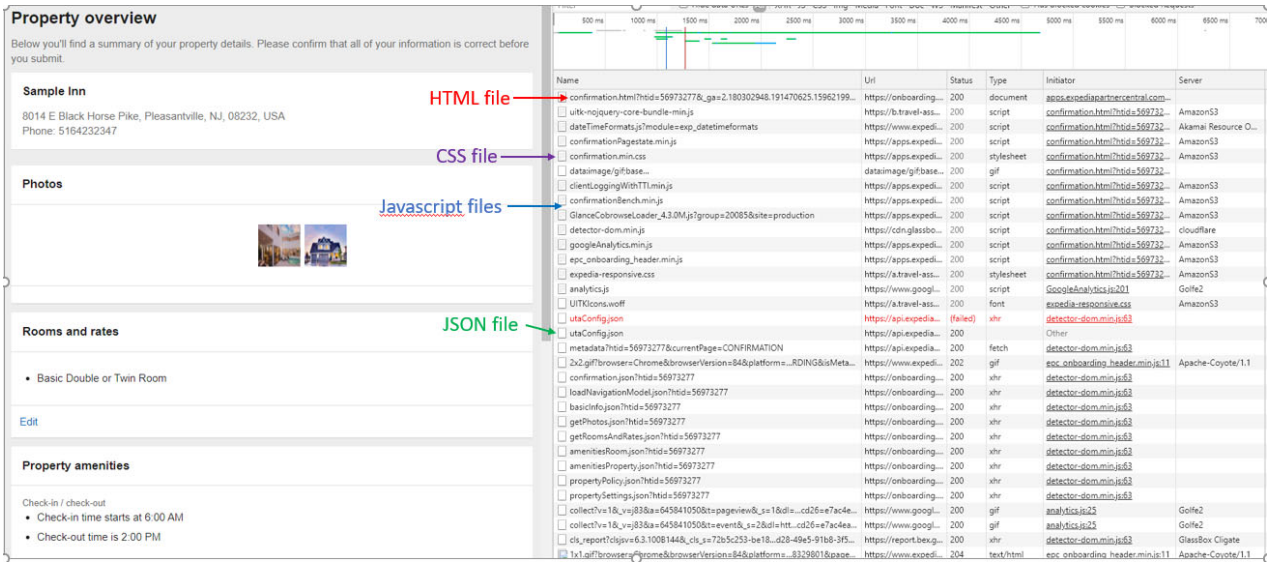
https://blog.usejournal.com/what-is-aws-and-what-can-you-do-with-it-395b585b03c

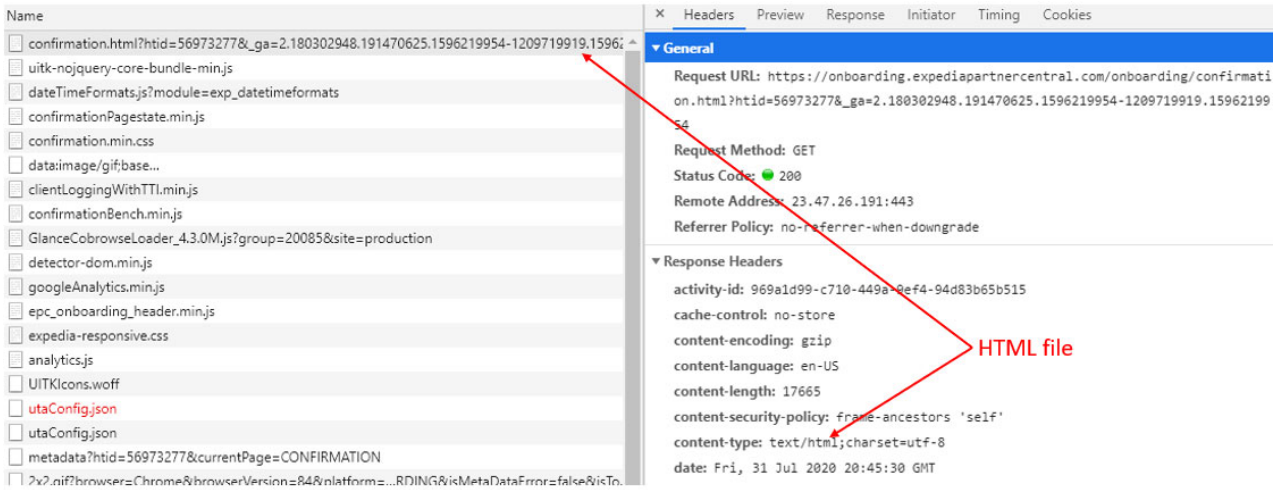
63. A website for the property listing was generated in part by retrieving the information and files from a MySQL database or a Content Delivery Network (CDN) used by AWS. As shown in the example below, if a user sets a "Self parking" charge fee to "130 per day" and the charge fee "130" was previously stored in an AWS database, a browser can load the website by sending a HTTP GET request to fetch the stored setting information from the server "https://apps.expediapartnercentral.com." In particular, the "Self parking" charge fee "130" is stored in a JSON dataset which is transferred from the server to the browser in response to the HTTP GET request. On information and belief, this functionality was present during relevant time periods of infringement.

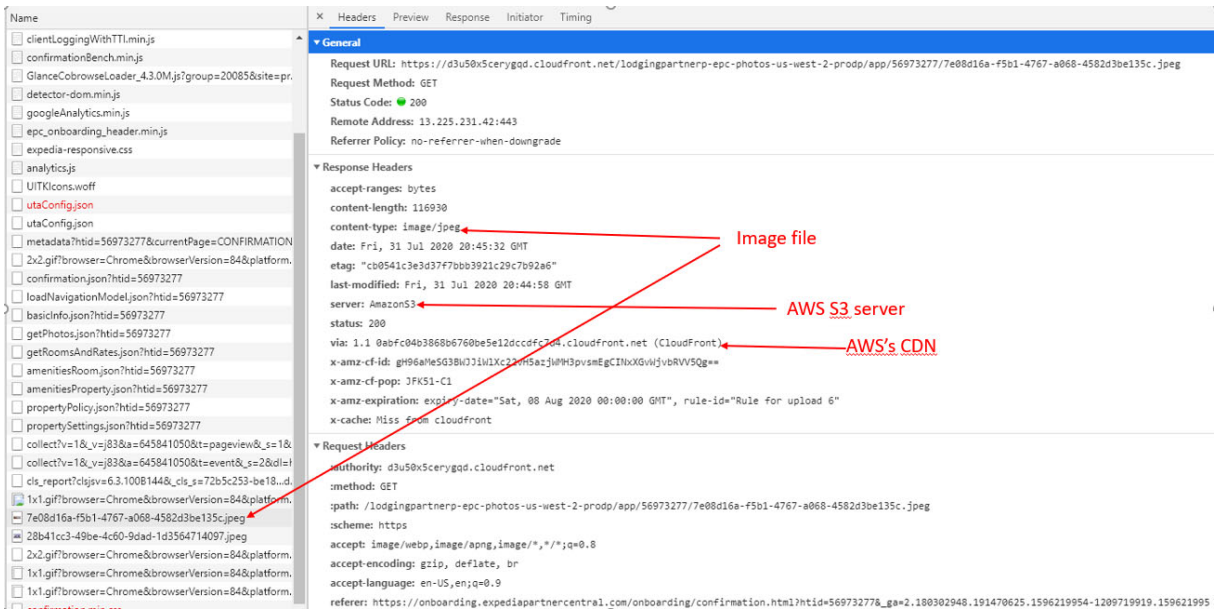




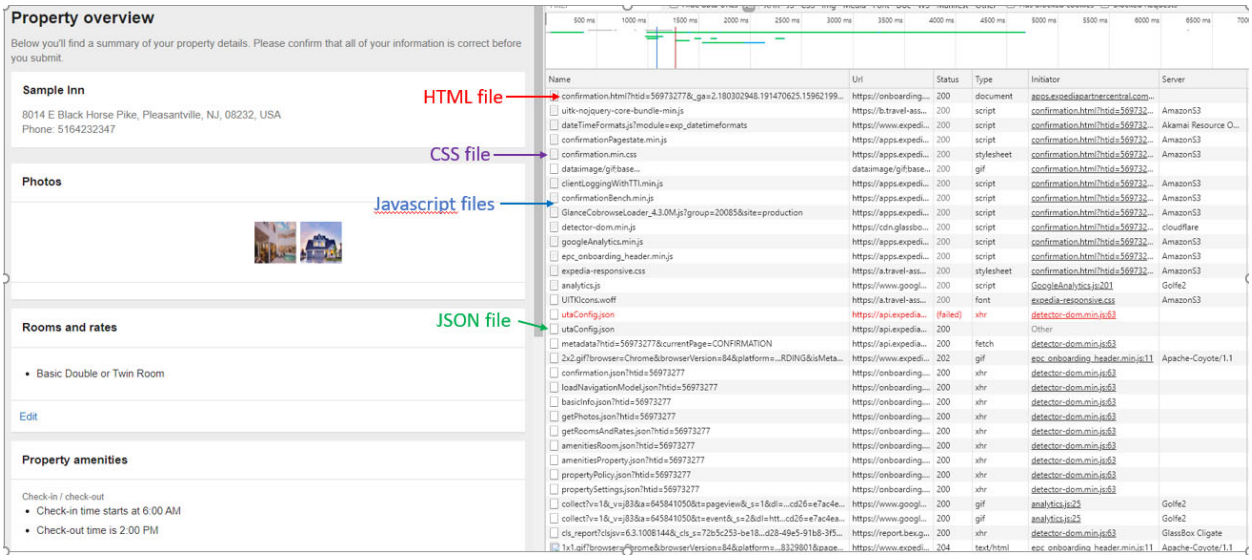
64. The Expedia platform built the property listing website comprising one or more web pages from the data stored in the database. Run time files (including CSS files and Javascript files) used the stored data and files to generate commands for the browser engine of a device to display the one or more web pages. In particular, the Expedia platform relied on a browser engine to generate a website comprising one or more web pages based on settings data extracted from at least a portion of the Expedia platform's database and at least one run time file. In the example below, the Expedia platform downloads an HTML file from the Expedia platform's servers. When the browser build engine parses the HTML file, the web browser also makes a request (GET method) to fetch the embedded CSS and Javascript run time files. The image files displayed in the photo gallery for the property website ("Photos" section) are downloaded from an AWS S3 server, via AWS's CDN provider "CloudFront." On information and belief, this functionality was present during relevant time periods of infringement.


Property overview
Below you'll find a summary of your property details. Please confirm that all of your information is correct before you submit.
Sample Inn
8014 E Black Horse Pike, Pleasantville, NJ, 08232, USA
Phone: 5164232347
Photos
Rooms and rates
Basic Double or Twin Room
Edit
Property amenities
Check-in / check-out
Check-in time starts at 6:00 AM
Check-out time is 2:00 PM
HTML file
CSS file
Javascript files
JSON file


Name
confirmation.html?htid=56973277&_ga=2.180302948.191470625.1596219954-1209719919.15962
uitk-nojquery-core-bundle-min.js
dateTimeFormats.js?module=exp_datetimeformats
confirmationPagestate.min.js
confirmation.min.css
data:image/gif;base...
clientLoggingWithTTI.min.js
confirmationBench.min.js
GlanceCobrowseLoader_4.3.0M.js?group=20085&site=production
detector-dom.min.js
googleAnalytics.min.js
epc_onboarding_header.min.js
expedia-responsive.css
analytics.js
UITKIcons.woff
utaConfig.json
utaConfig.json
metadata?htid=56973277&currentPage=CONFIRMATION
Headers
Preview
Response
Initiator
Timing
Cookies
General
Request URL: https://onboarding.expediapartnercentral.com/onboarding/confirmation.html?htid=56973277&_ga=2.180302948.191470625.1596219954-1209719919.1596219954
Request Method: GET
Status Code: 200
Remote Address: 23.47.26.191:443
Referrer Policy: no-referrer-when-downgrade
Response Headers
activity-id: 969a1d99-c710-449a-9ef4-94d83b65b515
cache-control: no-store
content-encoding: gzip
content-language: en-US
content-length: 17665
content-security-policy: frame-ancestors 'self'
content-type: text/html;charset=utf-8
date: Fri, 31 Jul 2020 20:45:30 GMT
HTML file

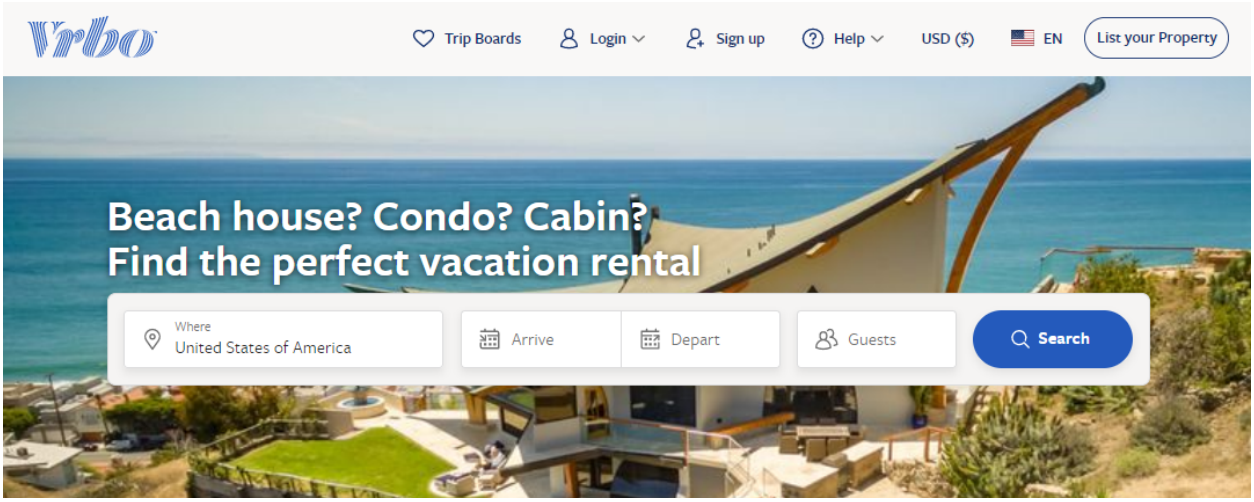


65. The Expedia platform fetched HTML (*.html) files, CSS (*.css) files, and Javascript (*.js) files from Expedia's AWS servers and converted them with additional contents (e.g. JSON files and image files) into content that could be displayed on a website. In the example below, the Expedia platform's source code, such as the HTML files, run time files (including CSS files, and Javascript files), and JSON files are fetched from the Expedia's AWS servers to build a "Property Overview" web page for display. On information and belief, this functionality was present during relevant time periods of infringement.



The Vrbo Platform:

66. The Vrbo platform infringed claim 1 of the '397 patent through a combination of features which collectively practiced each limitation of claim 1. By way of example, the Vrbo platform provided a browser-based platform to produce property listing websites for vacation rentals where travelers could view and book accommodations.



67. The property listing websites were, during relevant times, created on and for computers having a browser and a virtual machine capable of generating displays. For example, the Vrbo platform displayed content through modern browsers such as Google Chrome, Mozilla Firefox, Microsoft Edge, Internet Explorer, iOS Safari, and Android Chrome, which use browser engines (i.e., virtual machines) capable of generating a display by interpreting and executing code such as JavaScript and HTML to render web pages on a computer.

Trip Boards Login

FILTERS + Search Help TRAVELER CHAT 1

Find Help by Category

- Find a Property
- Book a Property
- Your Stay
- Your Review
- Getting Started
- Your Safety
- Your Account
- Your Listing
- Manage Reservations

Help Home /Your Account /Sign In

What web browsers are supported by the site?

We strive to provide our customers with modern, fast, safe and secure web browsing experience.

In order to provide you with a great user experience, we officially support the following browsers:

- Internet Explorer / Edge 16 or higher
- Firefox 59 or higher
- Chrome 64 or higher
- Safari 10 or higher

On mobile devices, we officially support the following:

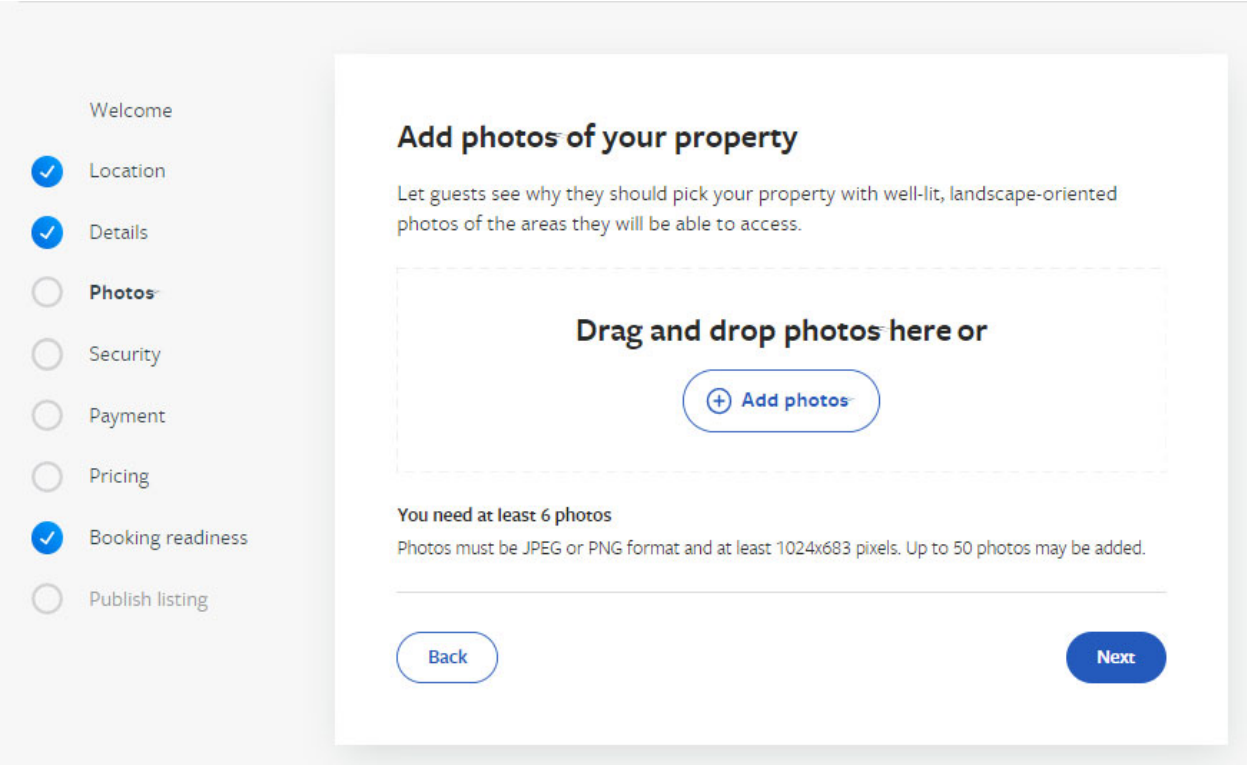
- iOS Safari 9 or higher (iPhone and iPad)
- Android Chrome 65 or higher (Android Phones and Tablets)

While our sites may continue to function on other devices and in other browsers than those listed, occasionally you may see a warning if you are using a browser or device with known issues. While we do our best to support browsers that are most commonly in use, it is not possible to support all, and therefore we recommend upgrading to one of the above-mentioned browsers.

To view instructions on how to upgrade your internet browser, visit http://browsehappy.com/.

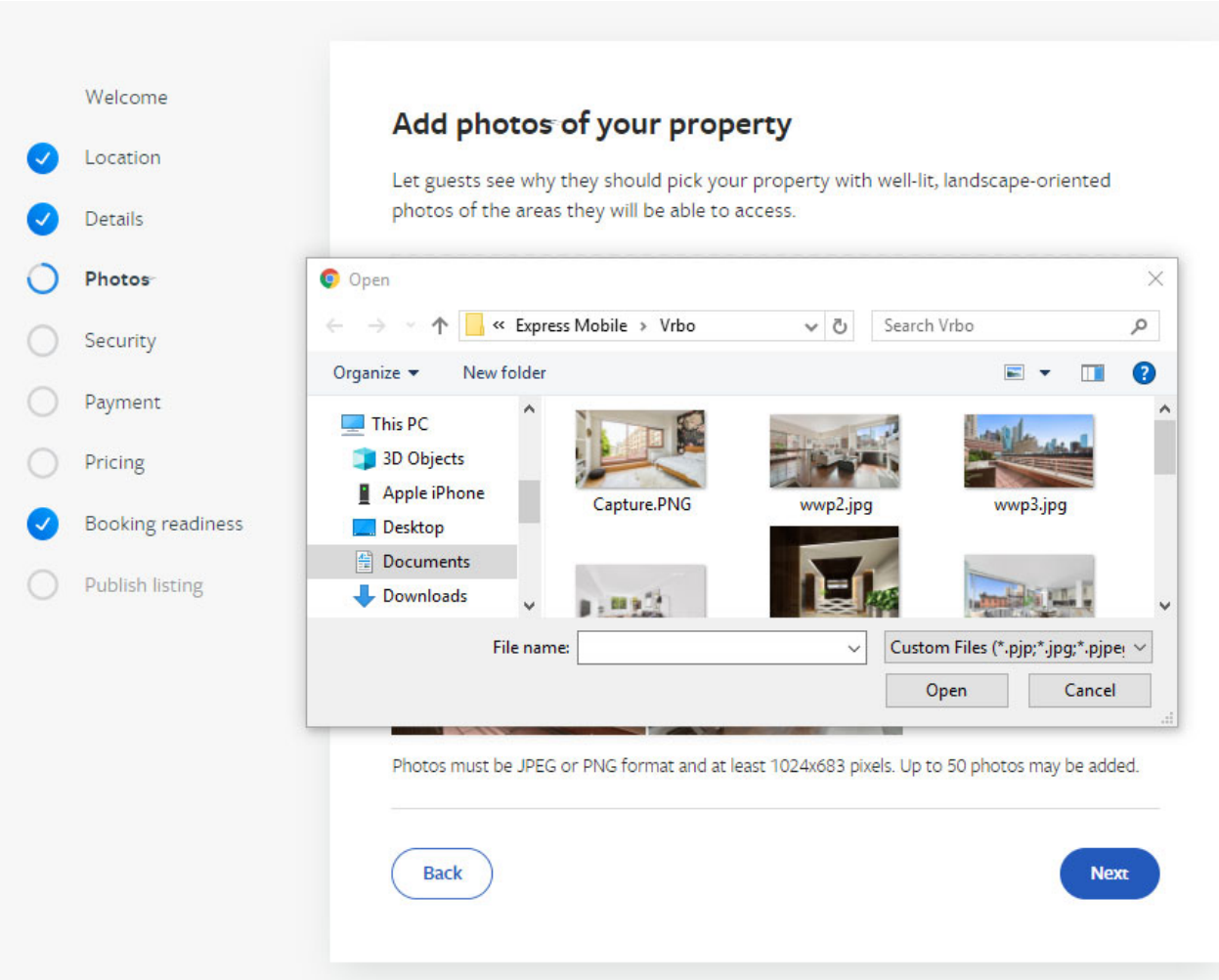
https://help.vrbo.com/articles/What-web-browsers-are-supported-by-the-site

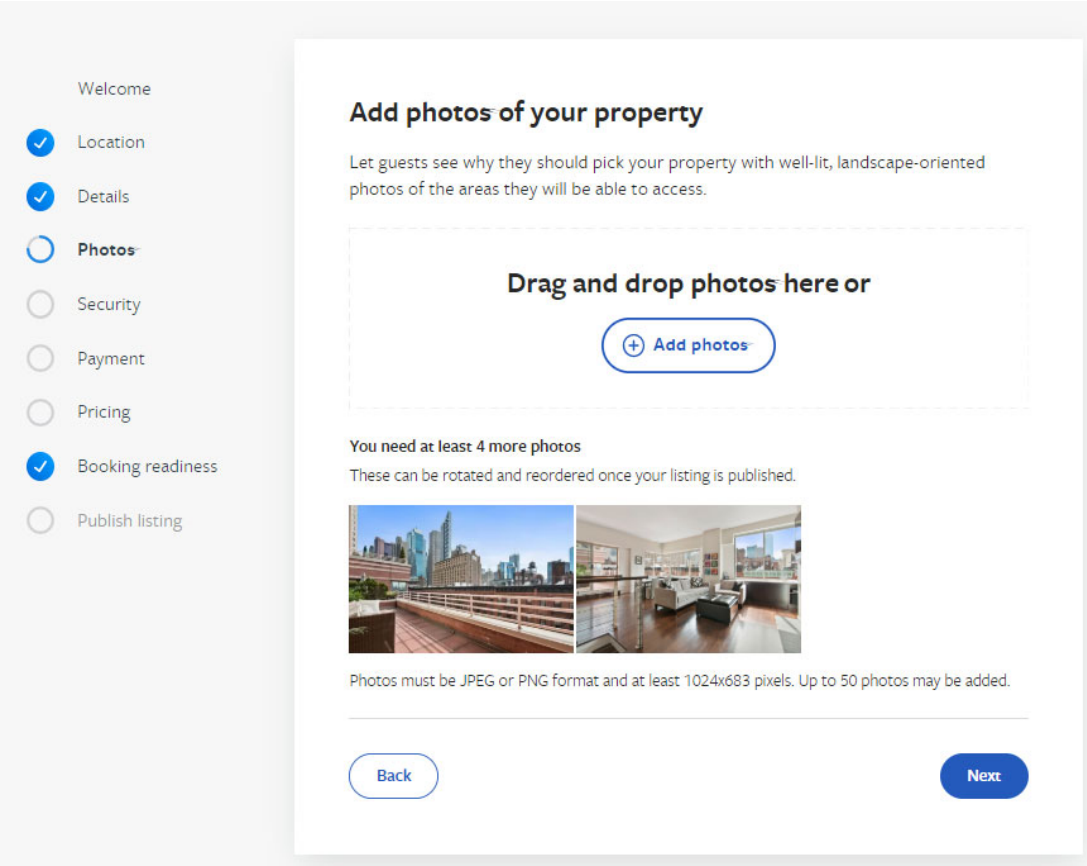
68. The Vrbo platform allowed customization of the location, amenities, headline, prices, policies, descriptions, and images for a property listing website, by presenting a menu with a panel of settings where a user could select settings describing elements for the website. For example, a user could select images for a photo gallery for the property listing.

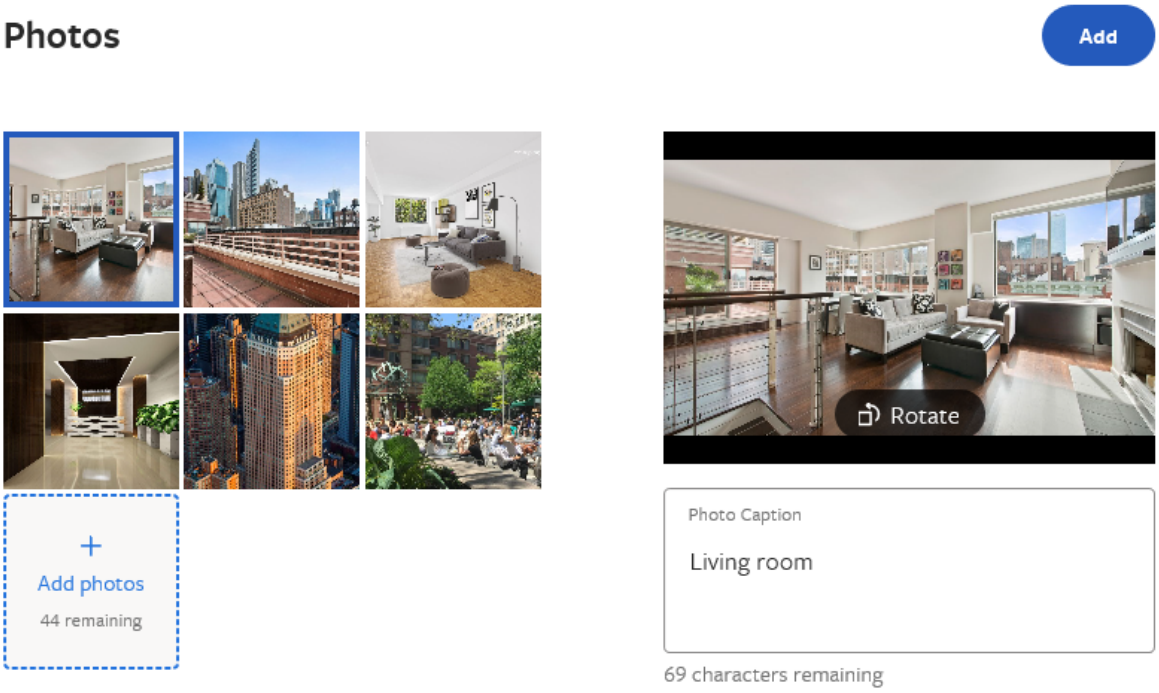


69. As described above, the Vrbo platform provided a browser-based platform, and presented a user selectable panel of settings through a browser of a computer. Websites were generated, for example, by browser engines (i.e., virtual machines), based on commands to the browser engines.

70. When a desired setting was selected, a display in accordance with that selection was generated substantially contemporaneously with the selection. In the example below, when an image for the property listing's photo gallery is selected, the image is displayed substantially contemporaneously with the selection of the image. Other examples include adding a caption to the image, or rotating the image, both of which are displayed contemporaneously with the selections thereof. On information and belief, these functionalities were present during relevant time periods of infringement.


Welcome
Location
Details
Photos
Security
Payment
Pricing
Booking readiness
Publish listing
Add photos of your property
Let guests see why they should pick your property with well-lit, landscape-oriented photos of the areas they will be able to access.
Open
« Express Mobile › Vrbo
Search Vrbo
Organize
New folder
This PC
3D Objects
Apple iPhone
Desktop
Documents
Downloads
Capture.PNG
wwp2.jpg
wwp3.jpg
File name:
Custom Files (*.pjp;*.jpg;*.pjpe
Open
Cancel
Photos must be JPEG or PNG format and at least 1024x683 pixels. Up to 50 photos may be added.
Back
Next

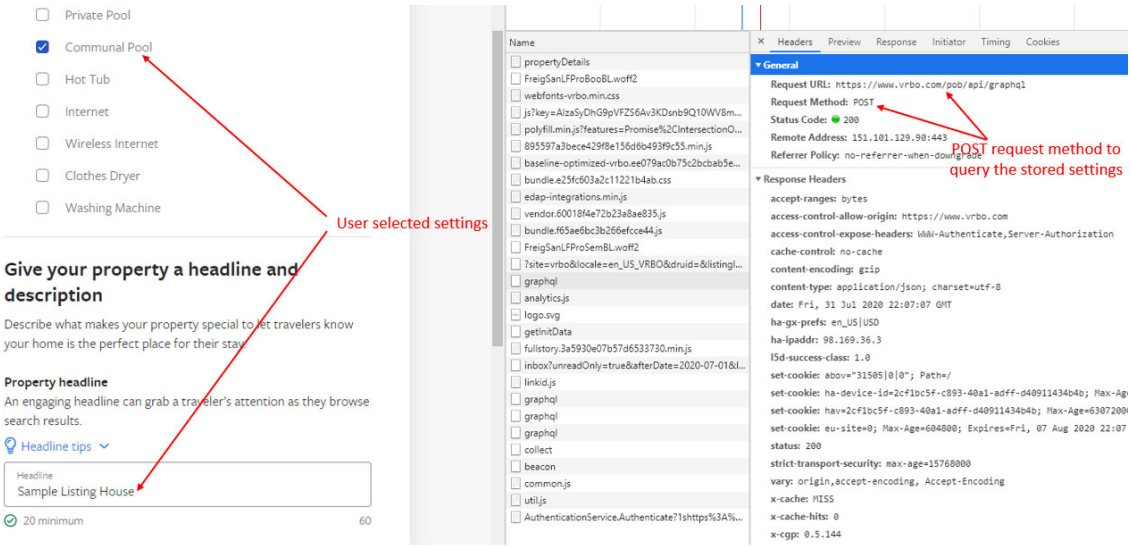




71. Upon selection of the desired setting, information representative of the selected

setting was stored in a database that supported the property listing website. On information and belief, information representative of selected settings for Vrbo property listing websites were stored in a database in a Vrbo server located at "odis.homeaway.com." *See* https://www.phocuswire.com/expedia-group-vrbo-homeaway-consolidation.

72. A website for the property listing was then generated in part by retrieving the information for the user selected settings stored in the database in Vrbo's server. In the example below, if user selectable settings such as an amenity "Communal Pool" and a property headline "Sample Listing House" were previously stored in the Vrbo database, a browser can load the website by sending a "graphql" POST requesting the stored settings from the database in Vrbo's server. Specifically, the "graphql" POST method sends a query message to Vrbo's server for listing details. The Vrbo server responds to the query by sending back a JSON file, which includes the amenity "Communal Pool" and the property headline "Sample Listing House." On information and belief, this functionality was present during relevant time periods of infringement.



▼ Request Headers

:authority: www.vrbo.com
:method: POST
:path: /pob/api/graphql
:scheme: https
accept: */*
accept-encoding: gzip, deflate, br
accept-language: en-US,en;q=0.9
clientid: Vrbo.PartnerOnboarding
content-length: 882
content-type: application/json
cookie: ha-device-id=2cf1bc5f-c893-40a1-adff-d40911434b4b; hav=2cf1bc5f-c893-40a1-adff-d40911434b4b; hal
Y6jwPv2b5rph9zDMbVpwX1YdnAfy5k; G_ENABLED_IDPS=google; HASESSIONV3=3d08855d-56e8-448a-98e7-2e5065c5b147
origin: https://www.vrbo.com
referer: https://www.vrbo.com/pob/checklist/321.2029562.2594079/propertyDetails
sec-fetch-dest: empty
sec-fetch-mode: cors
sec-fetch-site: same-origin
user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.
x-csrf-jwt: eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ0b2tlbiI6ImYzMDIyODk2Nzk0NWY5NDkzNjEzZWJhMzViNWE5NWQ5Z
x-homeaway-site: vrbo

▼ Request Payload view source

▼ {operationName: "ListingDetails",…}
operationName: "ListingDetails"
query: "query ListingDetails($listingId: String!, $siteName: String!, $locale: String!, $pcsVersion: S
▼ variables: {listingId: "321.2029562.2594079", siteName: "vrbo", locale: "en_US", pcsVersion: "/v2"}
listingId: "321.2029562.2594079"
locale: "en_US"
pcsVersion: "/v2"
siteName: "vrbo"

Query message is embedded in a JSON file in the "graphql" POST

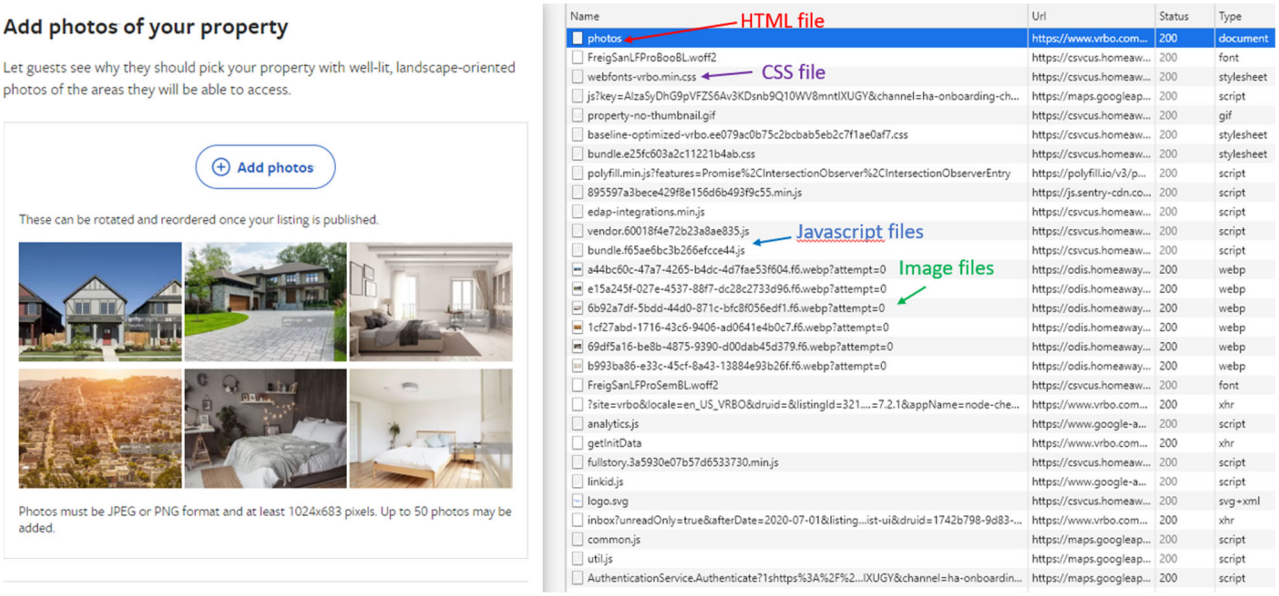
× Headers Preview Response Initiator Timing Cookies

▼ {data: {,…}, extensions: {}}
▼ data: {,…}
▼ listingDetails: {headline: "Sample Listing House", description: "", bedrooms: 2, sleeps: 1, fullBathrooms: 1,…}
▼ amenities: [{key: "e0c63dad-3a15-34c8-8b75-21f9de77742c", name: "CHILDREN_NOT_ALLOWED",…},…]
▶ 0: {key: "e0c63dad-3a15-34c8-8b75-21f9de77742c", name: "CHILDREN_NOT_ALLOWED",…}
▶ 1: {key: "fe9c67e2-eaef-352e-8ef8-a57aa59df12b", name: "PETS_NOT_ALLOWED",…}
▶ 2: {key: "811dd33c-f969-316e-b9fd-008e42b0072f", name: "NON_SMOKING_ONLY",…}
▼ 3: {key: "a6ac73d0-ac45-31a2-a33f-86b8e69af4f9", name: "COMMUNAL_POOL", displayName: "Communal Pool",…}
amenityType: "UNIT"
displayName: "Communal Pool"
key: "a6ac73d0-ac45-31a2-a33f-86b8e69af4f9"
name: "COMMUNAL_POOL"
__typename: "ListingAmenity"
bedrooms: 2
description: ""
error: null
fullBathrooms: 1
halfBathrooms: 0
headline: "Sample Listing House"
propertyType: "house"
sleeps: 1
▶ types: [{name: "studio", value: "studio", __typename: "PropertyType"},…]
__typename: "ListingDetails"
extensions: {}

Response JSON file from Vrbo includes the user selected settings

73. The Vrbo platform built the property listing website comprising one or more web

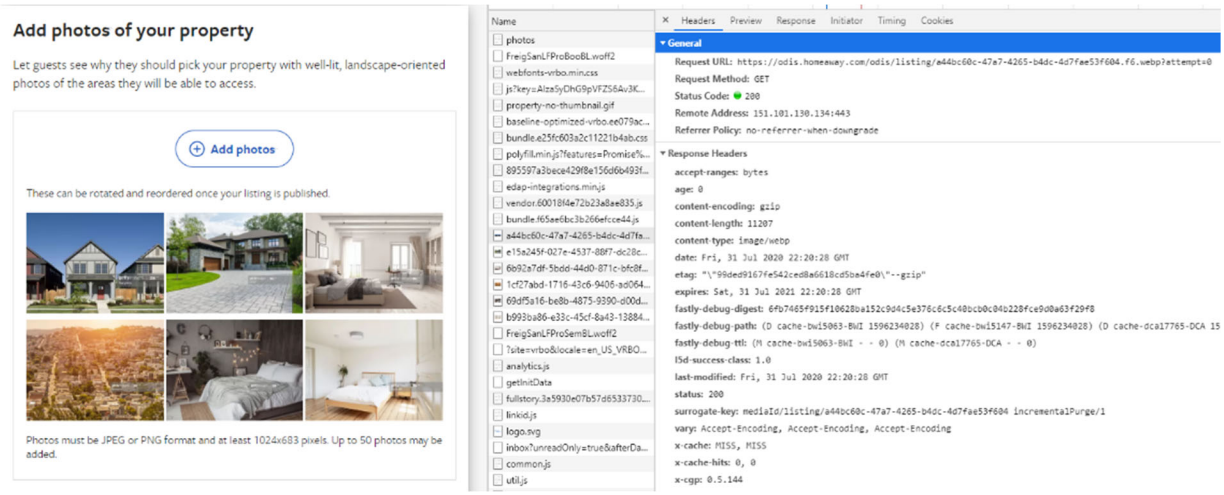
pages from the data for the selected settings stored in the database, and run time files that used the data stored in the database to generate commands for the browser engine to display the one or more web pages. In particular, the Vrbo platform relied on a browser engine to generate a website comprising one or more web pages based on settings data extracted from at least a portion of the Vrbo platform's database and at least one run time file. In the example below, the Vrbo platform's HTML file "photos" fetched from the Vrbo server embeds various run time files (including CSS files, and Javascript files). When the browser engine parses the HTML file, the web browser also makes a request (through the GET method) to fetch the embedded CSS and Javascript run time files. The image files are then downloaded from the Vrbo platform's database via an HTTP GET request. On information and belief, this functionality was present during relevant time periods of infringement.



```
1  <!doctype html>
2  <html lang="en">
3  <head>
4      <title>Publish Your Listing</title>
5      <meta charset="utf-8"/>
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7
8      <link rel="stylesheet" href="https://csvcus.homeaway.com/rsrcs-crs/onboarding-checklist-ui/baseline-optimized-vrbo.ee079ac0b75c2bcbab5eb2c7f
9      <link rel="preload" href="https://csvcus.homeaway.com/rsrcs-crs/web-fonts/2.8.0/fonts/freight-sans/FreigSanLFProBooBL.woff2" crossorigin="an
10     <link rel="stylesheet" href="https://csvcus.homeaway.com/rsrcs-crs/web-fonts/2.8.0/webfonts-vrbo.min.css" type="text/css">
11
12     <link rel="stylesheet" type="text/css" href="https://csvcus.homeaway.com/rsrcs-crs/onboarding-checklist-ui/bundle.e25fc603a2c11221b4ab.css">
13
14     <link rel="shortcut icon" href="https://csvcus.homeaway.com/rsrcs-crs/cdn-logos/4.1.1/sitename/vrbo/web/favicon.ico">
15     <script type="text/javascript" src="https://maps.googleapis.com/maps/api/js?key&#x3D;AIzaSyDhG9pVFZS6Av3KDsnb9Q10WV8mntIXUGY&amp;channel&#x3
16
17     <script>
18         window.analyticsdatalayer = {"analyticsbrand":"vrbo","appname":"node-onboarding-checklist-ui","appenvironment":"production","appversion"
19         window.edapOptions = {
20             skipPageview: true,
21             skipFlush: true
22         };
23         window.edap = window.edap || [];
24         window.ha = window.ha || {};
25         window.ha.csrfToken = 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ0b2tlbiI6ImYzMDIyODk2Nzk0NWY5NDkzNjEzZWJhMzViNWE5NWQ5ZmQ4NDZjZDk0NjhiZDhkI
26     </script>
27     <script type="text/javascript" src="https://csvcus.homeaway.com/rsrcs-crs/edap-integrations/9.22.0/javascripts/edap-integrations.min.js" asy
28     <script>
29       !function(a){function b(d){if(c[d])return c[d].exports;var e=c[d]={i:d,l:!1,exports:{}};return a[d].call(e.exports,e,e.exports,b),e.l=!0,e
30     //# sourceMappingURL=stab-analytics-polyfill.min.js.map
31     </script>
32
33                 <script type="text/javascript">
34                     window.errorReporterConfig = { url: '/pob/api/errors' }
35                 </script>
36
37             <script type="text/javascript" name="livelab-autoExpose">
38             window.__ABACUS__ = window.__ABACUS__ || [];
39             window.__ABACUS__.push('HA_PARTNER_FULLSTORY_LIVELAB');
40         </script>
```

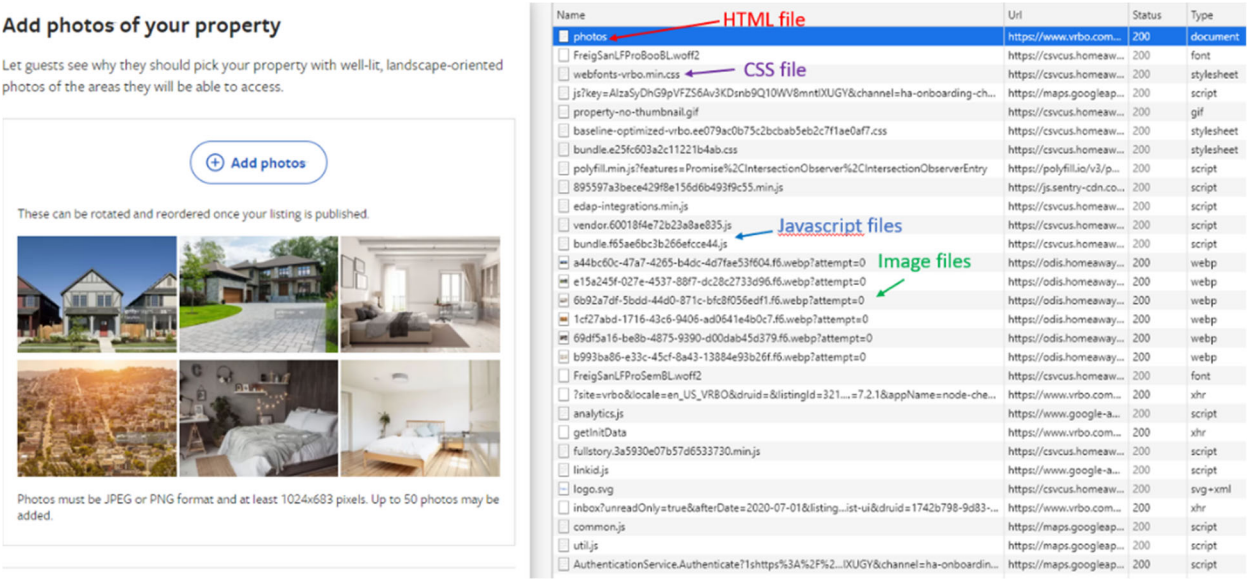
CSS file

Javascript file



74. The Vrbo platform fetched HTML (*.html) files, CSS (*.css) files, and Javascript (*.js) files from the Vrbo server and converted them with additional content (e.g. JSON files and image files) into a working website to display. In the example below, the Vrbo platform's source code, such as the HTML files, run time files (including CSS files, and Javascript files), and image files are fetched from the Vrbo server to build an "Add photos of you property" web page for display. On information and belief, this functionality was present during relevant time periods of

infringement.



75. The presence of the above referenced features is demonstrated, by way of example, by testing the Accused Instrumentalities for investigative purposes on https://www.expediagroup.com/, https://www.expedia.com/, and https://www.vrbo.com/, and by reference to publicly available information, including https://www.expediagroup.com/, https://welcome.expediagroup.com/en, https://expediaconnectivity.com/apis/product-management/property-api/api-definition.html, https://expediaconnectivity.com/apis/product-management/property-api/video.html, https://www.youtube.com/watch?v=NSVzEoqYLxI, https://welcome.expediagroup.com/en/how-it-works, https://aws.amazon.com/solutions/case-studies/expedia/, https://www.vrbo.com/, https://help.vrbo.com/articles/How-do-I-list-my-property-HA, https://help.vrbo.com/category/List_Your_Property, https://www.homeaway.com/platform/developer-api, and https://help.vrbo.com/category/Your_Listing. On information and belief, the above referenced features were present during relevant time periods of infringement.

76. On information and belief, Defendant has had knowledge of the '397 patent and

its infringement thereof at least as early as July 28, 2019, and no later than August 31, 2020, when Plaintiff provided notices of the '397 patent and Defendant's infringement of the '397 patent.

77. On information and belief, Defendant has contributed to the infringement of the '397 patent because Defendant knew that the infringing aspects of its infringing products and services, including but not limited to the Accused Instrumentalities, were made for use in an infringement, and were not staple articles of commerce suitable for substantial non-infringing uses.

78. On information and belief, Defendant has induced the infringement of the '397 patent, with knowledge of the '397 patent and that its acts, including without limitation using, offering to sell, selling within, and importing into the United States, the Accused Instrumentalities, would aid and abet and induce infringement by customers, clients, partners, developers, and end users of the foregoing.

79. In particular, Defendant's actions that aided and abetted others such as customers, clients, partners, developers, and end users to infringe included advertising and distributing the Accused Instrumentalities, and providing instructional materials, training, and other services regarding the Accused Instrumentalities. Defendant actively encouraged the adoption of the Accused Instrumentalities and provided support sites for the vast network of developers working with the Accused Instrumentalities, emphasizing the simple and user-friendly nature of the Accused Instrumentalities and explaining that "[a]s an Expedia Group Partner, you'll have instant access to Partner Central, our platform offering a host of innovative tools to help make day-to-day management of your business quick and simple" (*see, e.g.,* https://welcome.expediagroup.com/en/about-us/list-on-expedia) and "[s]et your price, dates, rules, and more. We give you the tools to make sure you're in control… We're here for you, 24/7… A dedicated support team is ready around the clock to make sure that everything runs smoothly" (*see,*

e.g., https://www.vrbo.com/en-us/list?icid=IL___O_Text___top_nav_link_hp). On information and belief, Defendant engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant had actual knowledge of the '397 patent and knowledge that their acts were inducing infringement of the '397 patent since at least the date Defendant received notice that its activities infringed the '397 patent.

80. Defendant's acts of infringement have caused damage to Plaintiff, and Plaintiff is entitled to recover damages from Defendant in an amount subject to proof at trial.

81. On information and belief, Defendant has acted with disregard of Plaintiff's patent rights, without any reasonable basis for doing so, and has willfully infringed the '397 patent.

82. The foregoing is illustrative of Defendant's infringement of the '397 patent. Plaintiff reserves the right to identify additional claims and Accused Instrumentalities in accordance with the Court's local rules and applicable scheduling orders.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 7,594,168

83. Plaintiff incorporates by reference paragraphs 1 to 82 above as if fully set forth herein.

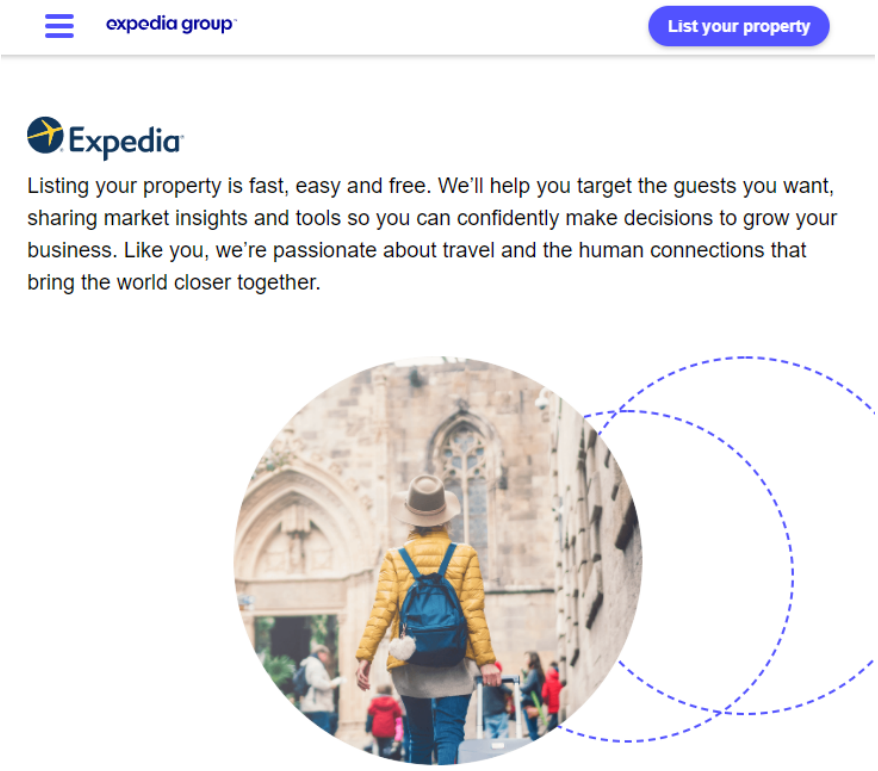
84. On information and belief, Defendant has infringed and is infringing the '168 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, directly and/or indirectly.

85. On information and belief, Defendant has infringed and is infringing the '168 patent by performing, without authority, one or more of the following acts: making, using, offering to sell, selling within, and importing into, the United States products and services that practice the claimed inventions of the '168 patent, including but not limited to the Expedia Group website

builder platform for the Expedia Group products (the "Expedia platform"), and the Vrbo website builder platform, also known as the HomeAway platform, for the Vrbo products (the "Vrbo platform") (collectively the "Accused Instrumentalities").

The Expedia platform:

86. The Expedia platform infringes at least claim 1 of the '168 patent through a combination of features that collectively practice each limitation of claim 1. By way of example, the Expedia platform provides a platform to produce property listing websites on the Expedia Group products, for hotels and other lodging providers where travelers can view and book accommodations.



87. On information and belief, the Expedia platform is supported by Amazon Web Services (AWS).

Expedia Group Increases Agility and Resiliency by Going All In on AWS

2018

Expedia Group is all in on AWS, with plans to migrate 80 percent of its mission-critical apps from its on-premises data centers to the cloud in the next two to three years. By using AWS, Expedia Group has become more resilient. Expedia Group's developers have been able to innovate faster while saving the company millions of dollars. Expedia Group provides travel-booking services across its flagship site Expedia.com and about 200 other travel-booking sites around the world.

https://aws.amazon.com/solutions/case-studies/expedia/

88. AWS provides cloud services through servers, and among other things, allows the Expedia platform to store files relating to websites on a cloud, using managed databases such as MySQL or a Content Delivery Network (CDN). *Id*.

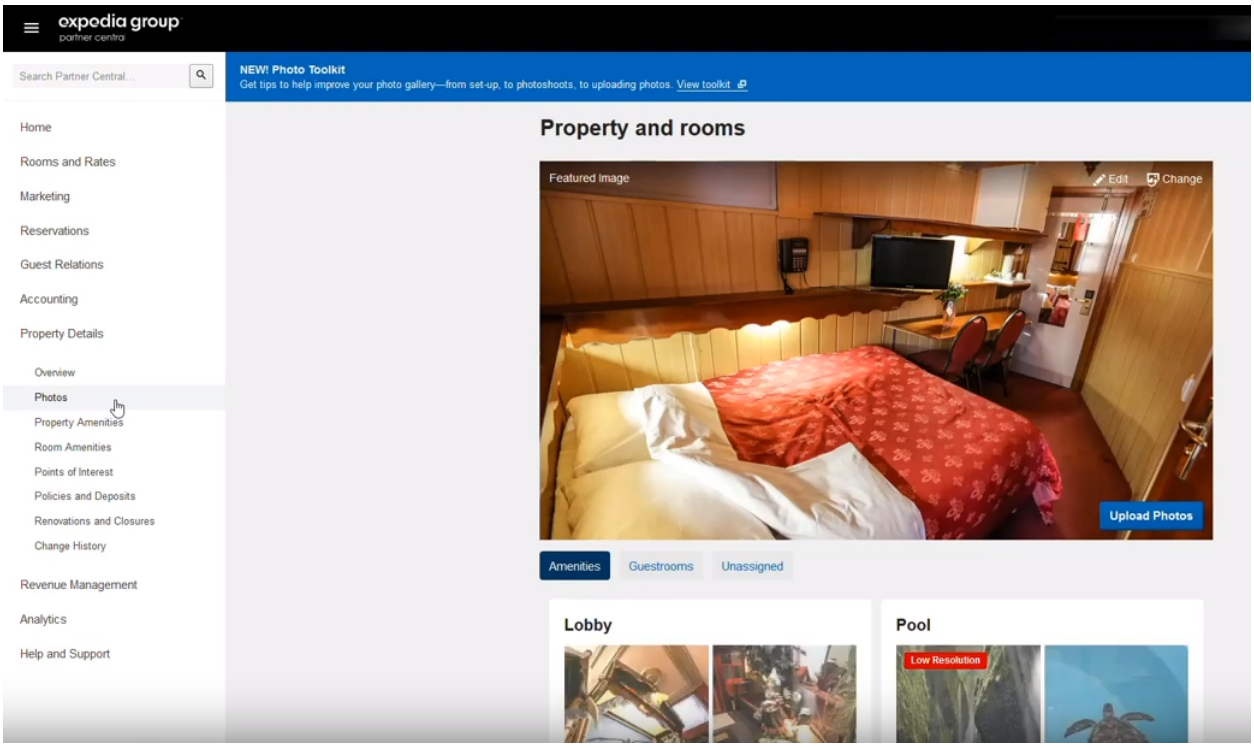
In simple words AWS allows you to do the following things-

1. Running web and application servers in the cloud to host dynamic websites.
2. Securely store all your files on the cloud so you can access them from anywhere.
3. Using managed databases like MySQL, PostgreSQL, Oracle or SQL Server to store information.
4. Deliver static and dynamic files quickly around the world using a Content Delivery Network (CDN).
5. Send bulk email to your customers.

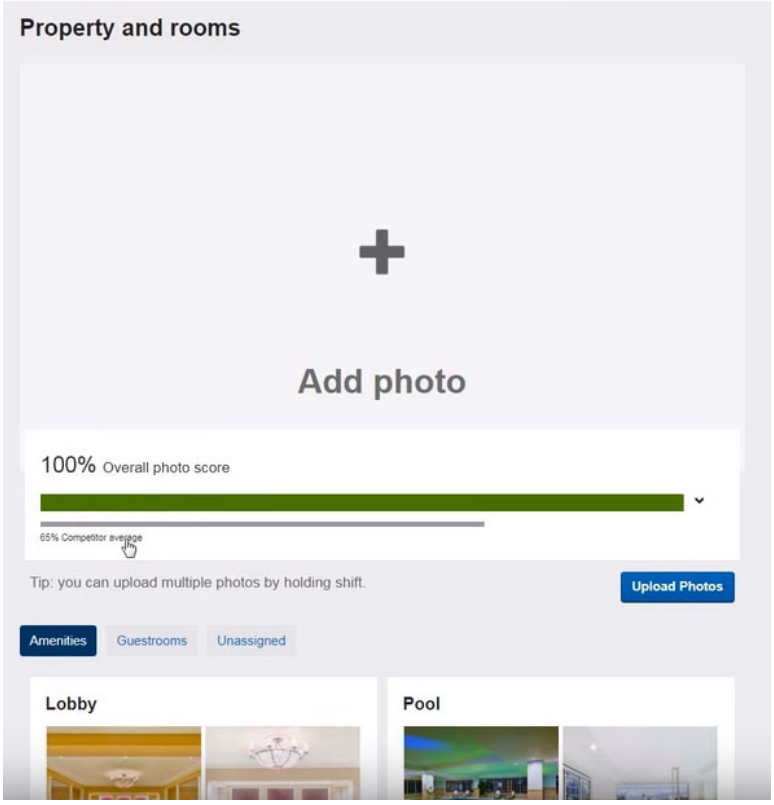
https://blog.usejournal.com/what-is-aws-and-what-can-you-do-with-it-395b585b03c

89. The Expedia platform's AWS server includes a build engine configured to accept user input to create a website comprising a plurality of web pages that each include objects. User

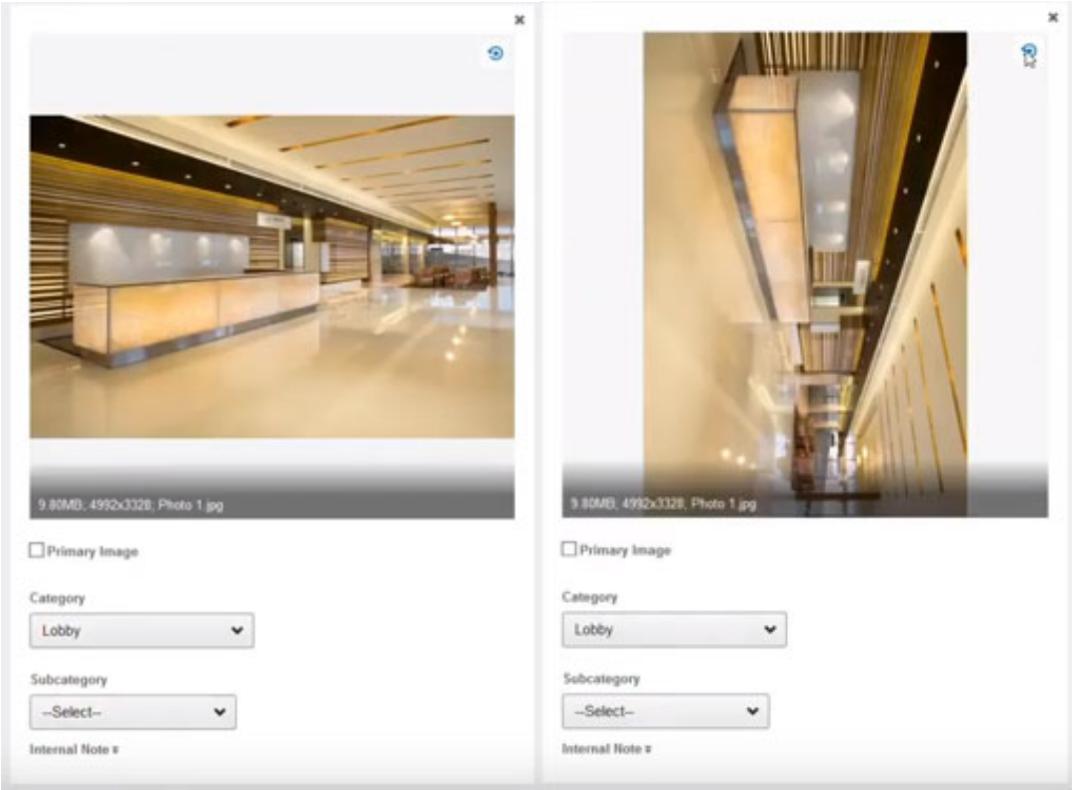
input for a website may include specification of the location, amenities, prices, policies, descriptions, images, and rules for guests for a property listing website.



90. For example, a user can input image selections for photo galleries for different areas of the property, such as the lobby and pool.



91. Upon input of an image, a user may associate a particular style to be associated with the image object. For example, a user may associate an orientation style for the image by rotating the image, or a caption style by entering a caption for the image.



92. An image object input by a user for an Expedia website is associated with styles defining transformations and time lines for the image. For example, when a thumbnail image in the photo gallery for a property on an Expedia website is clicked on, the thumbnail mage transforms into an enlarged image including a black background and an image caption at the bottom of screen. Further, the forward arrow on an enlarged image can be clicked on to transform the current enlarged image into the next enlarged image in the photo gallery, providing a photo slideshow.

Courtyard by Marriott New York City Manhattan Midtown East

Save | Reserve a room

★★★½

4.3/5 Excellent 2,572 reviews ›

Guests rated this property 4.5/5 for cleanliness.

Popular amenities

- Free WiFi
- Air Conditioning
- Restaurant
- Gym
- Breakfast Available
- Business Services

All amenities ›

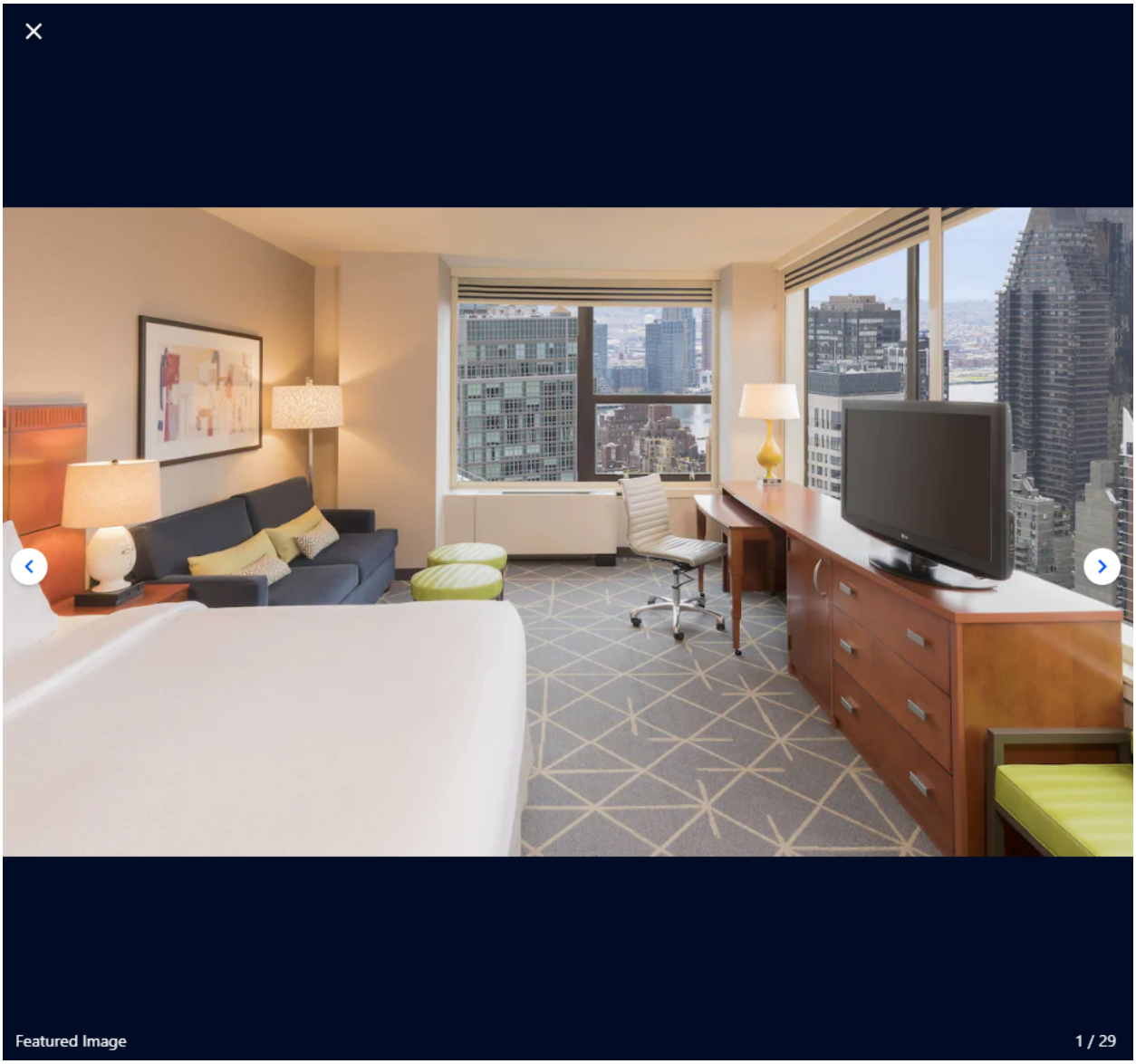
Cleaning and safety practices

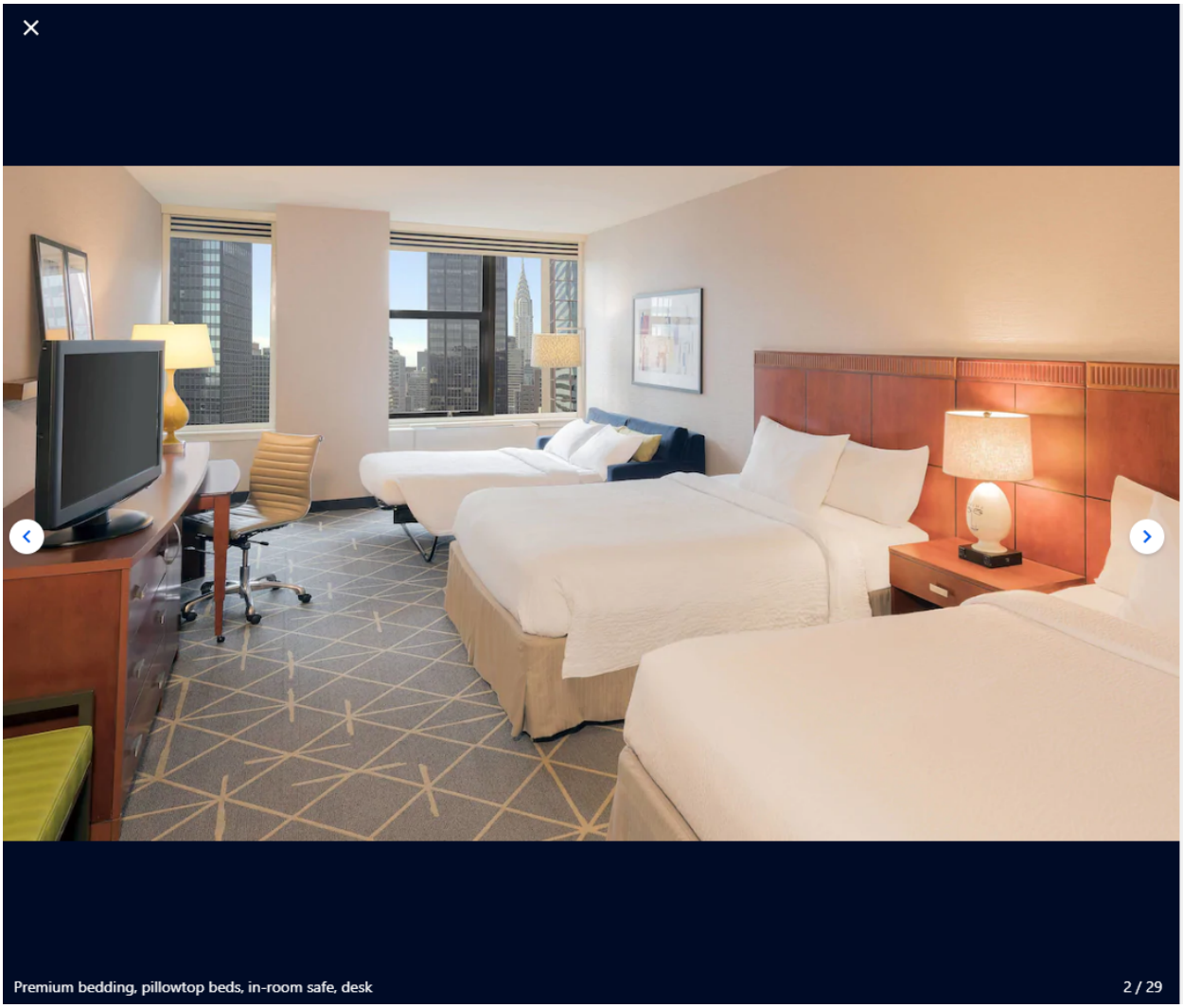
866 3rd Avenue, New York, NY View in a map ›

Explore the area

Museum of Modern Art	11 min walk
Rockefeller Center	12 min walk
Grand Central Terminal	14 min walk
New York, NY (LGA-LaGuardia)	21 min drive

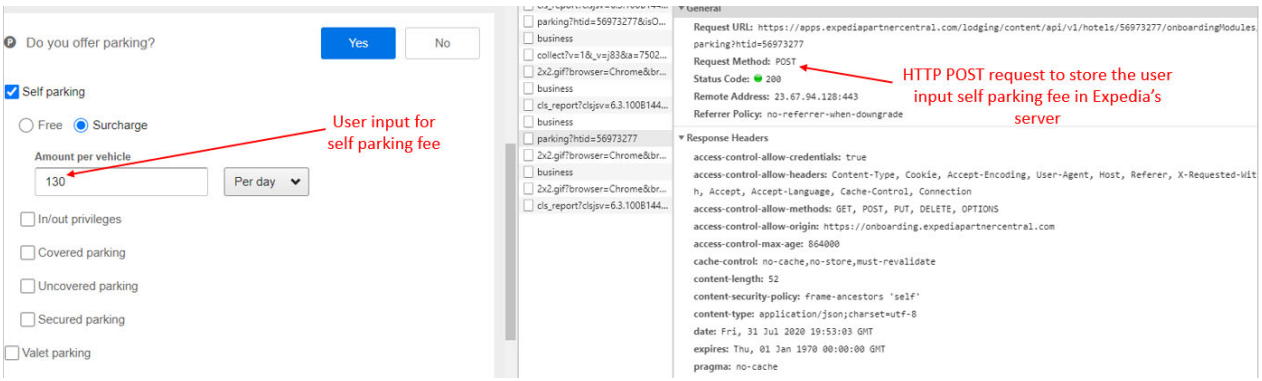
Express Mobile, Inc., Exhibit 2005
Page 2005 - 43
IPR2022-00597, Google LLC. v. Express Mobile, Inc.

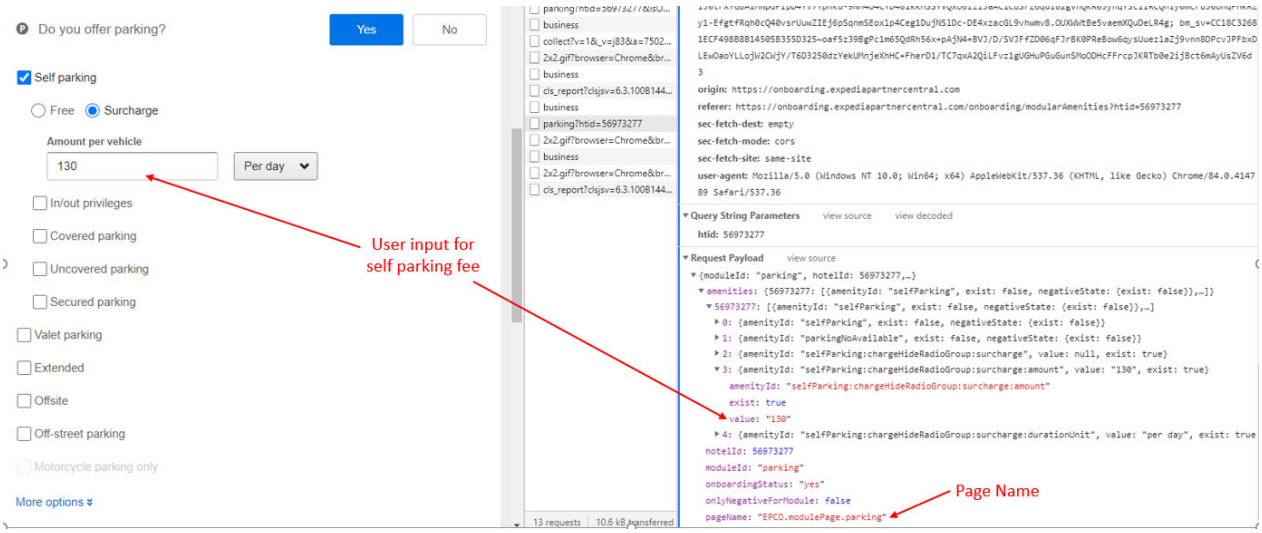

Featured Image
1 / 29



93. The Expedia platform is configured to produce a database with multidimensional array comprising the objects that comprise the website. As described above, user inputs for Expedia websites are stored in AWS mySQL databases, which comprise multidimensional array databases. Further, Expedia websites are rendered using JSON dataset, which are multidimensional in nature—for each website object, its JSON dataset includes object style, object identifiers, and an indication of the web page that the object is part of. This data is provided to the Expedia AWS server, accessible to a web browser to generate a website with the user inputs. In the example below, a user configures a "parking" object (i.e., module in Expedia websites) by

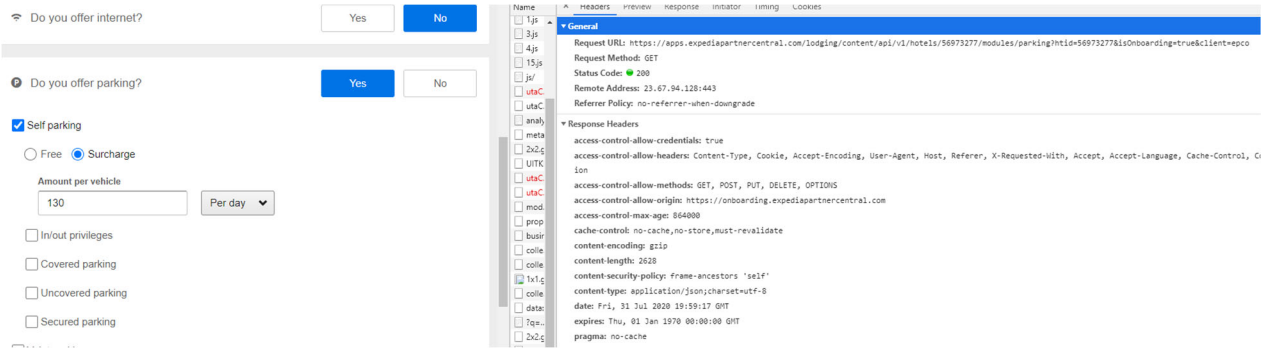
providing a "Self parking" option and sets a surcharge fee to "130 per day" when listing a property. The "Self parking" option and the user input surcharge fee "130" are sent to the server via an HTTP POST request "parking?htid=56973277" and are further stored in Expedia's database. In particular, the "Self parking" option and the surcharge fee "130" are sent to the server in the format of JSON data, in which the JSON data also includes the identification of the object (in this example, moduleId: "parking") and an indication of the web page that the object is part of (in this example, pageName: "EPCO.modulePage.parking").

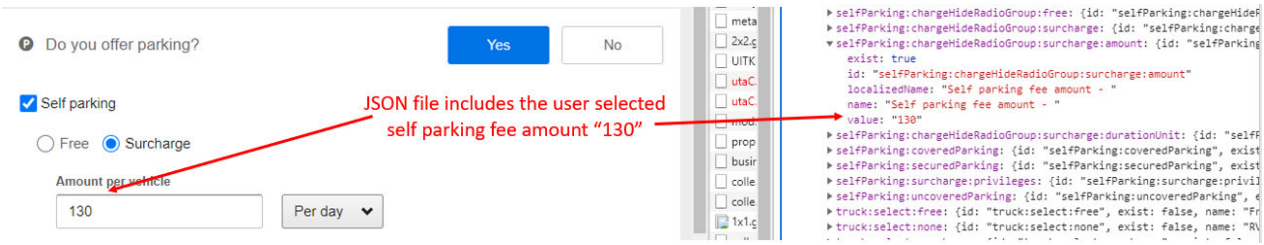




94. A web browser with access to a runtime engine can then generate the user configured website including the user input objects and style data extracted from the database. For example, a browser can send an HTTP GET request to fetch the stored "parking" object from the

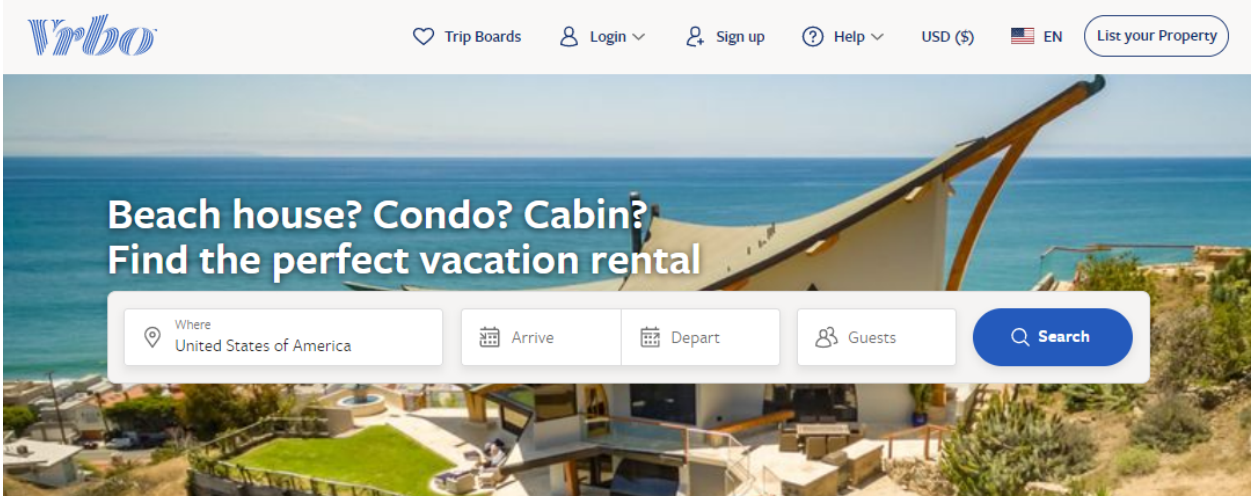
Expedia server "https://apps.expediapartnercentral.com." The "parking" object is stored in the format of JSON data, in which the JSON data includes the type of the parking "Self parking" and the user selected surcharging fee "130."





<u>The Vrbo Platform</u>:

95. The Vrbo platform infringes at least claim 1 of the '168 patent through a combination of features that collectively practice each limitation of claim 1. By way of example, the Vrbo platform provides a browser-based platform to produce property listing websites for vacation rental providers where travelers can view and book accommodations.



96. Website building platforms require a server supporting a build engine to build websites. On information and belief, the Vrbo platform includes a server located at "odis.homeaway.com" comprising a build engine configured to accept user input to create a website comprising a plurality of web pages that each include objects displaying different elements of the website. *See* https://www.phocuswire.com/expedia-group-vrbo-homeaway-consolidation.

97. A Vrbo website includes objects for displaying the listed property's location, prices, policies, descriptions, and images, and a user may enter inputs to associate styles with objects. For example, a user may define an orientation style of the image by rotating an image, or define a caption style by entering a caption for an image.

Welcome

- Location
- Details
- Photos
- Security
- Payment
- Pricing
- Booking readiness
- Publish listing

Add photos of your property

Let guests see why they should pick your property with well-lit, landscape-oriented photos of the areas they will be able to access.

Drag and drop photos here or

Add photos

You need at least 4 more photos

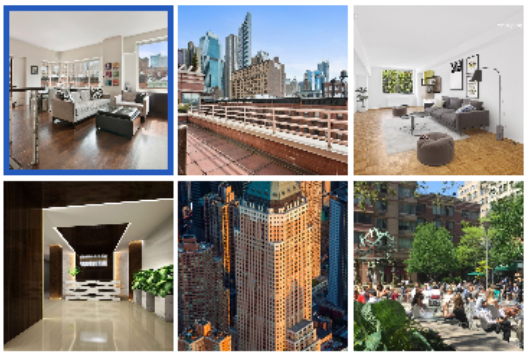
These can be rotated and reordered once your listing is published.

Photos must be JPEG or PNG format and at least 1024x683 pixels. Up to 50 photos may be added.

Back | Next

Photos

Add



+

Add photos

44 remaining

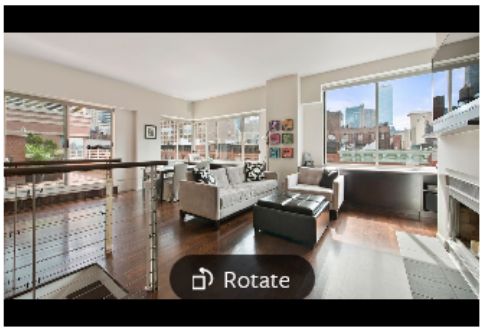
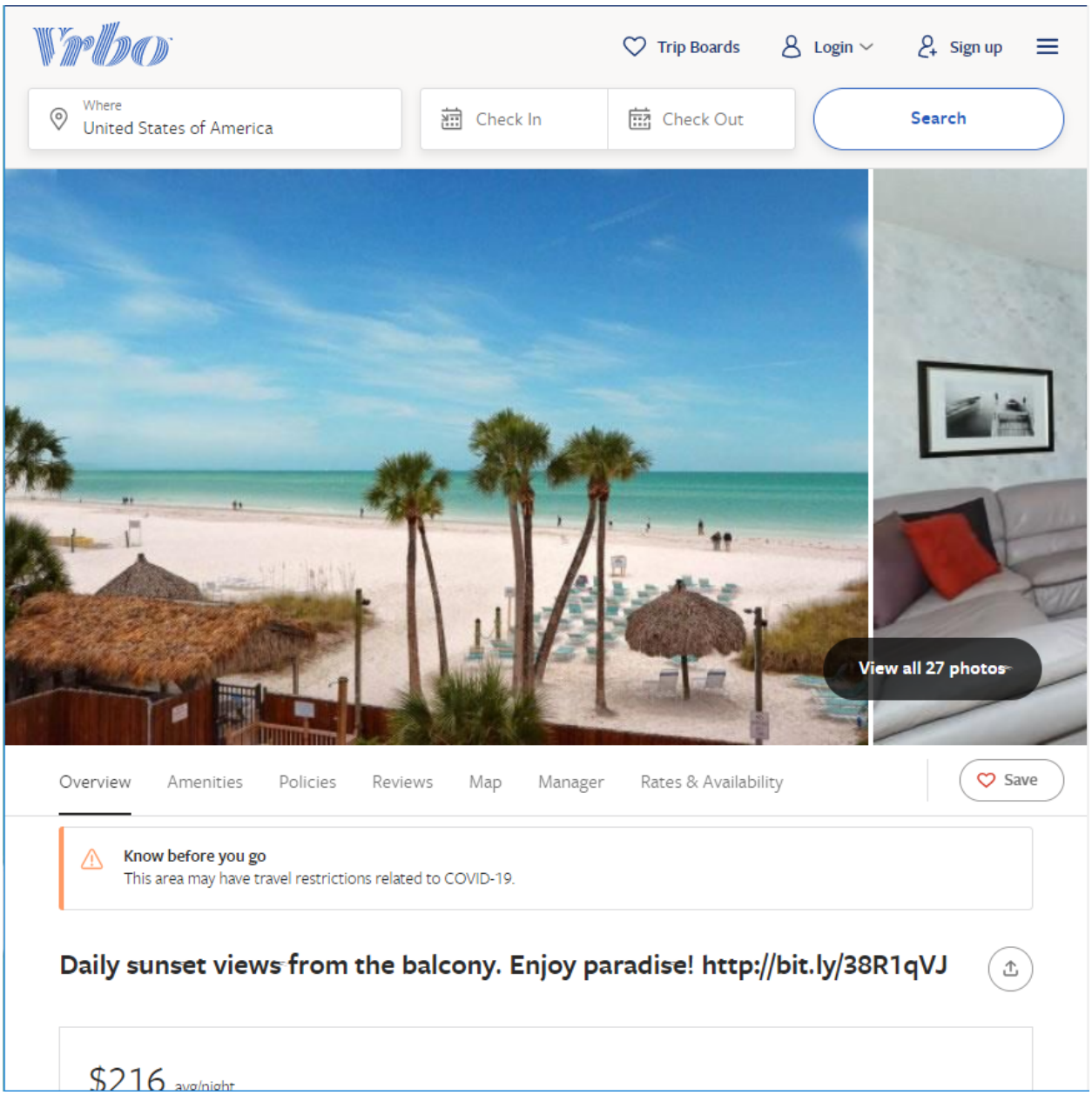


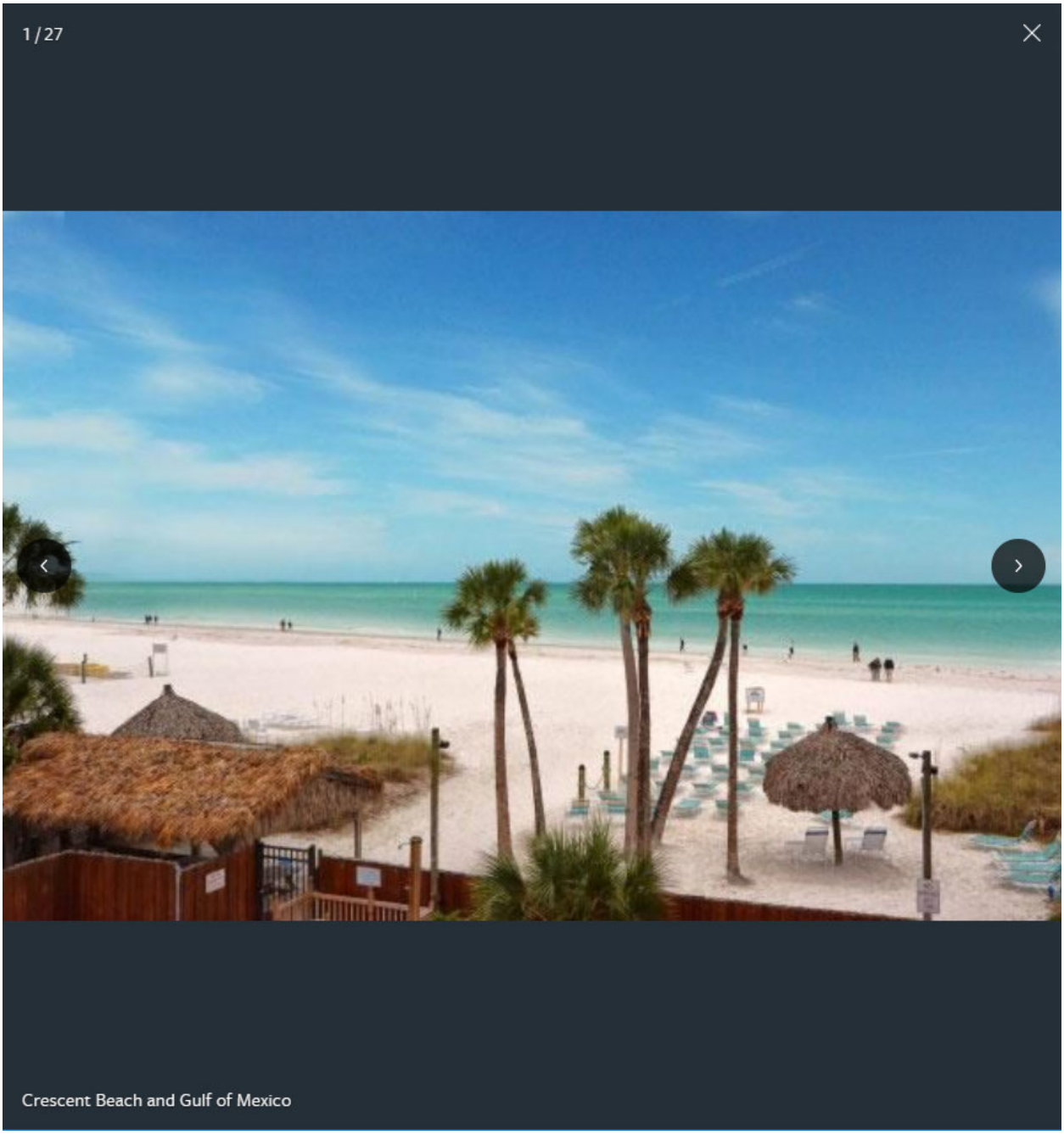
Photo Caption

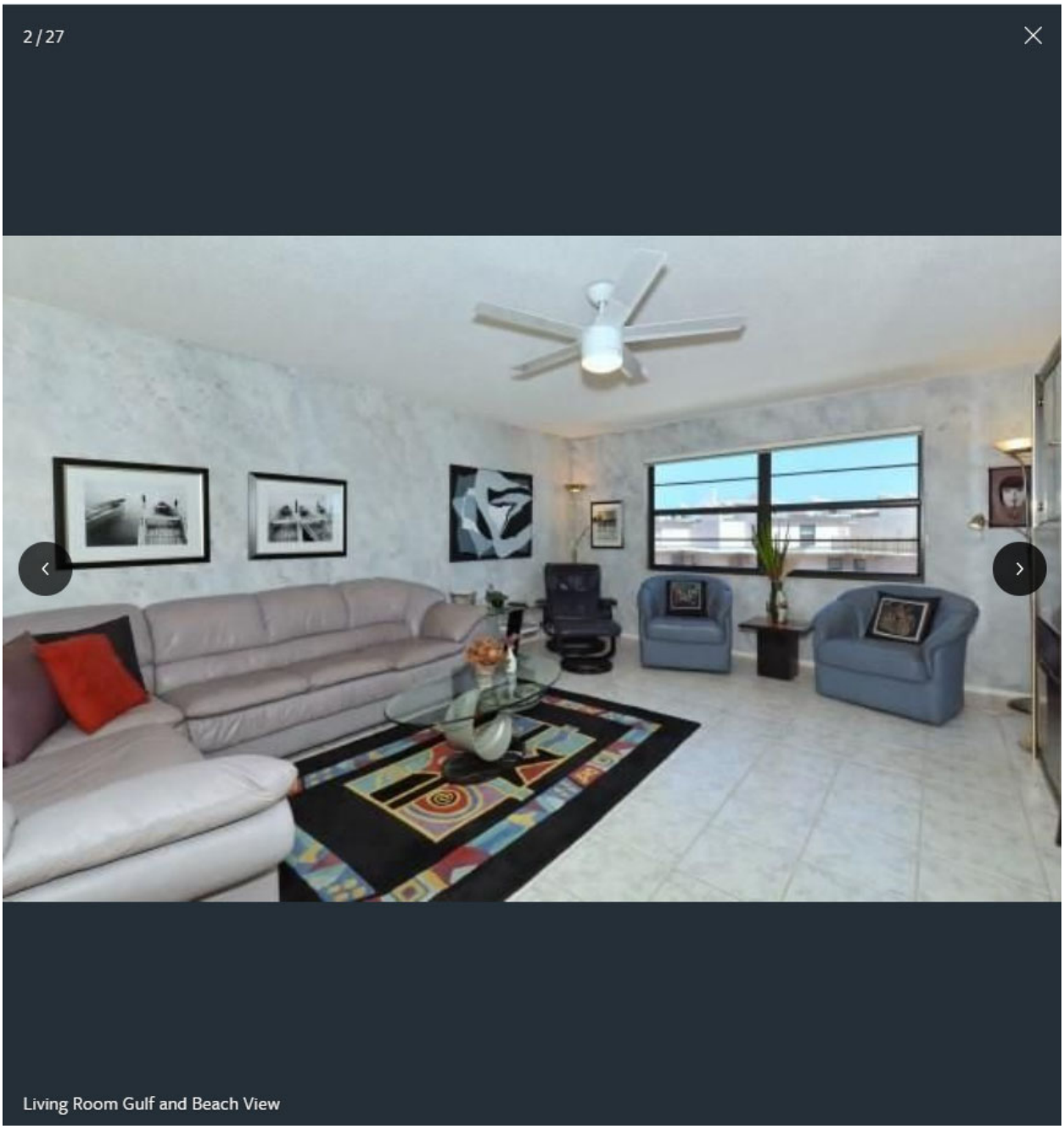
Living room

69 characters remaining

98. An image object uploaded by a user for a Vrbo website is associated with styles defining transformations and time lines for the image. For example, when an image in the photo gallery for a property on a Vrbo website is clicked on, the image transforms into an enlarged image including a black background and an image caption at the bottom of screen. Further, the forward arrow on the enlarged image can be clicked on to transform the current enlarged image into the next enlarged image of the photo gallery, providing a photo slideshow.

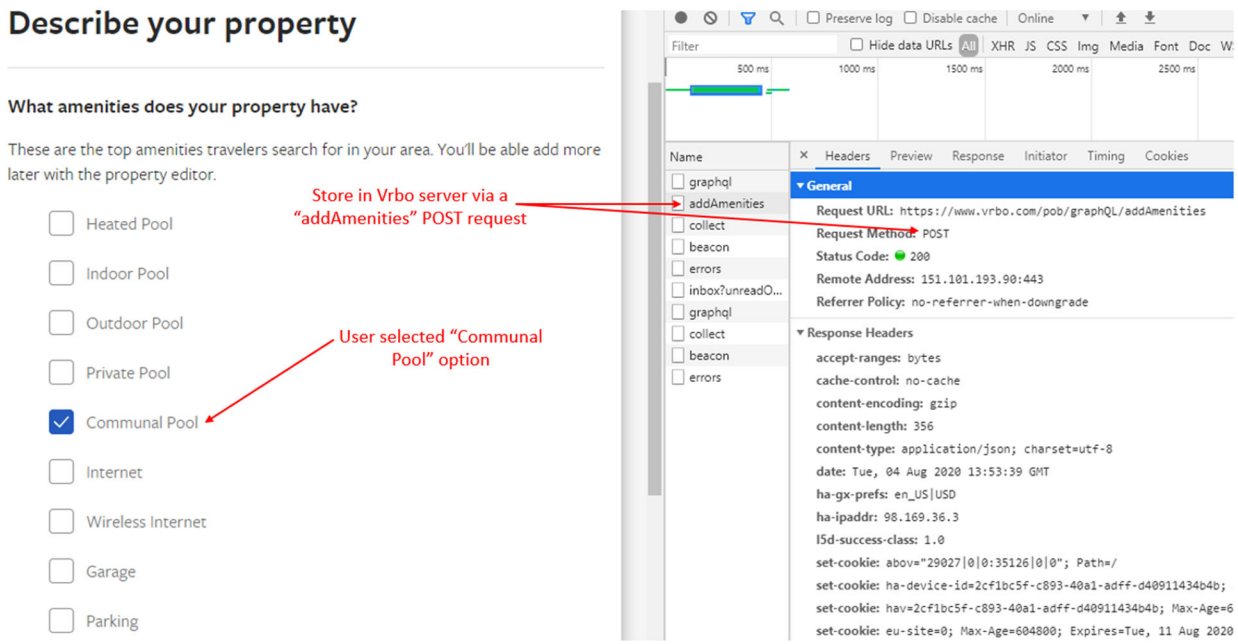


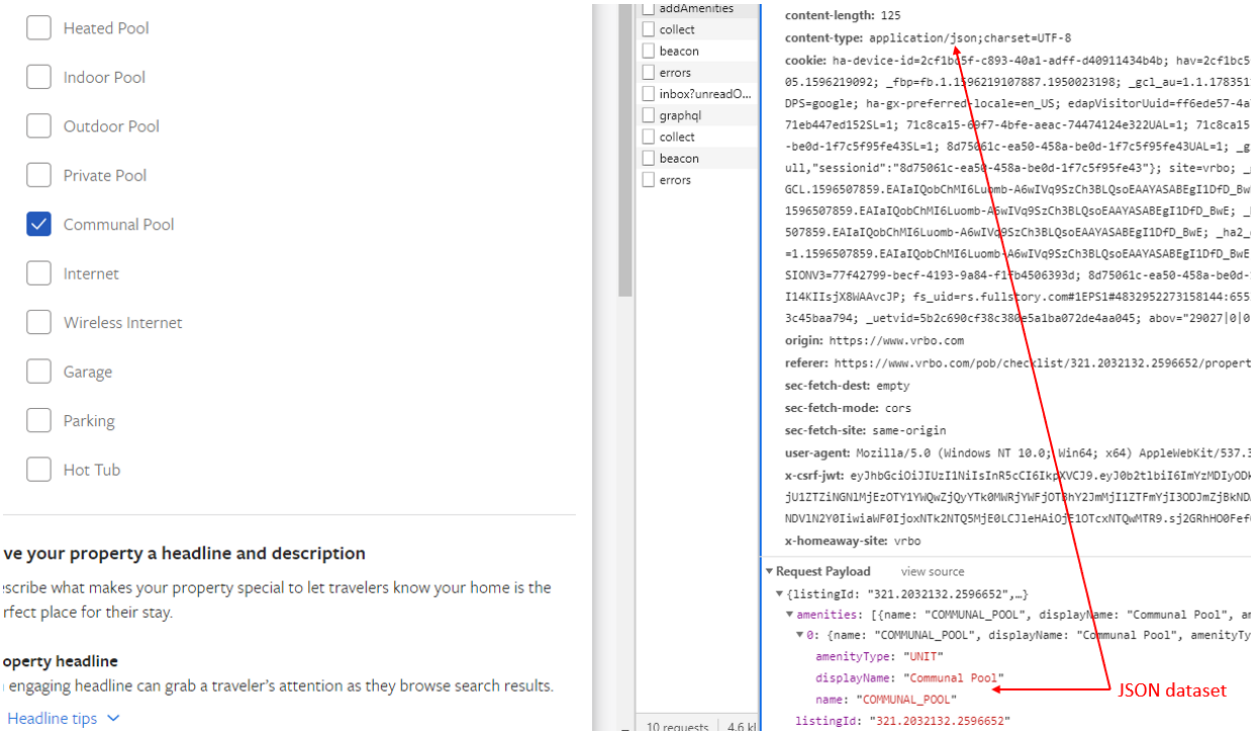

1 / 27
Crescent Beach and Gulf of Mexico

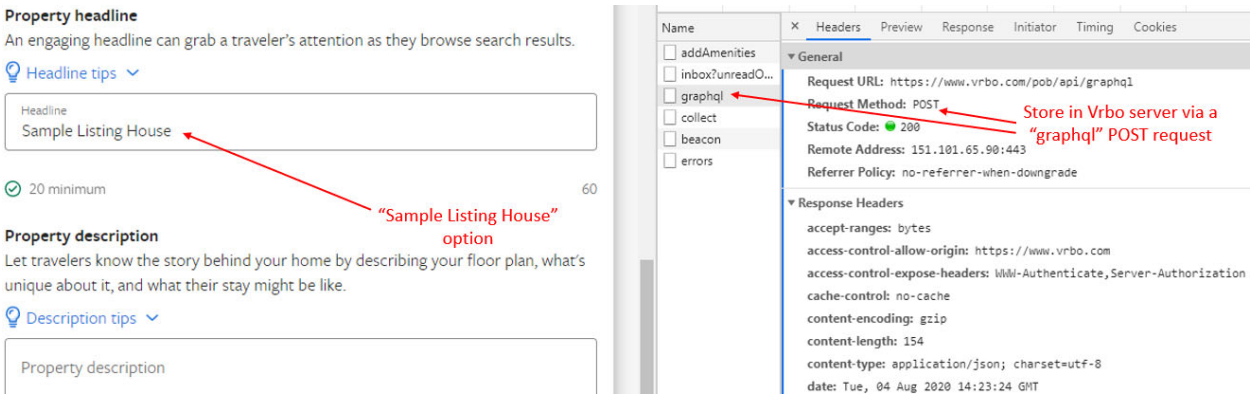


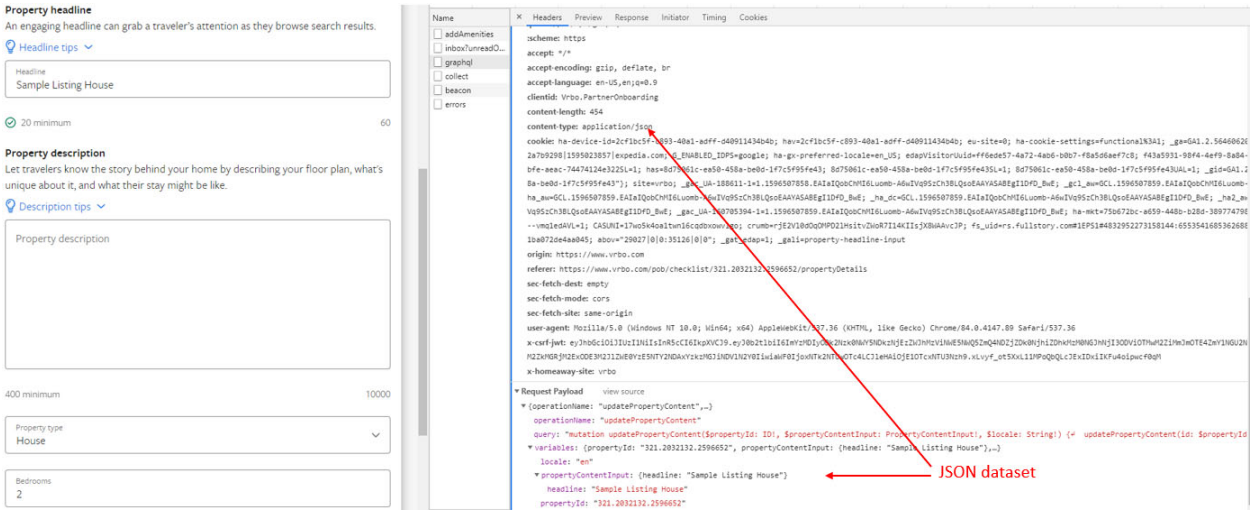
99. On information and belief, the Vrbo platform is configured to produce a database with a multidimensional array including the objects that comprise the website. Vrbo websites are rendered using JSON dataset, which are multidimensional in nature. The JSON dataset for an object on a Vrbo website includes object style, object identifiers, and an indication of the web page that the object is part of. This data is provided to the Vrbo server, accessible to a web browser to

generate a website with the user inputs. In the example below, a user configures the amenity object in the "Describe your property" web page by selecting a "Communal Pool" option and adding the property headline "Sample Listing House." The selected settings are sent to and stored in the database in Vrbo's server in the format of JSON data via an "addAmenities" POST request and a "graphql" POST request, respectively.

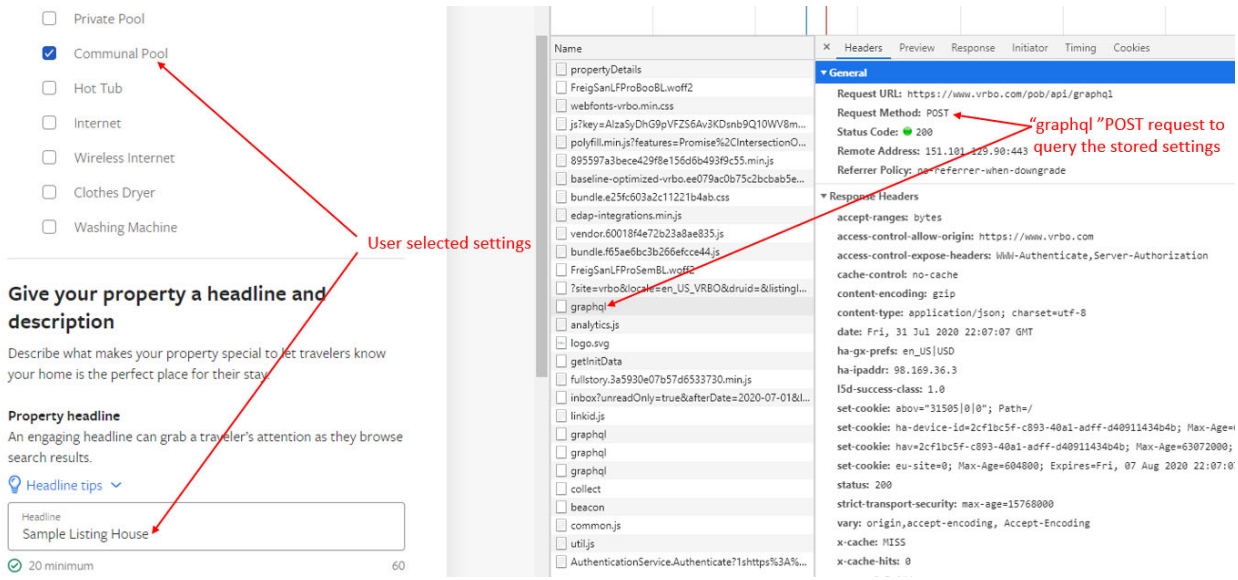



Heated Pool
Indoor Pool
Outdoor Pool
Private Pool
Communal Pool
Internet
Wireless Internet
Garage
Parking
Hot Tub
ve your property a headline and description
scribe what makes your property special to let travelers know your home is the
rfect place for their stay.
operty headline
engaging headline can grab a traveler's attention as they browse search results.
Headline tips
addAmenities
collect
beacon
errors
inbox?unreadO...
graphql
collect
beacon
errors
content-length: 125
content-type: application/json;charset=UTF-8
origin: https://www.vrbo.com
referer: https://www.vrbo.com/pob/checklist/321.2032132.2596652/propert
sec-fetch-dest: empty
sec-fetch-mode: cors
sec-fetch-site: same-origin
x-homeaway-site: vrbo
Request Payload
view source
{listingId: "321.2032132.2596652",…}
amenities: [{name: "COMMUNAL_POOL", displayName: "Communal Pool",
0: {name: "COMMUNAL_POOL", displayName: "Communal Pool", amenityTy
amenityType: "UNIT"
displayName: "Communal Pool"
name: "COMMUNAL_POOL"
listingId: "321.2032132.2596652"
JSON dataset


Property headline
An engaging headline can grab a traveler's attention as they browse search results.
Headline tips
Headline
Sample Listing House
20 minimum
60
"Sample Listing House" option
Property description
Let travelers know the story behind your home by describing your floor plan, what's unique about it, and what their stay might be like.
Description tips
Property description
Name
addAmenities
inbox?unreadO...
graphql
collect
beacon
errors
Headers
Preview
Response
Initiator
Timing
Cookies
General
Request URL: https://www.vrbo.com/pob/api/graphql
Request Method: POST
Status Code: 200
Remote Address: 151.101.65.90:443
Referrer Policy: no-referrer-when-downgrade
Store in Vrbo server via a "graphql" POST request
Response Headers
accept-ranges: bytes
access-control-allow-origin: https://www.vrbo.com
access-control-expose-headers: WWW-Authenticate,Server-Authorization
cache-control: no-cache
content-encoding: gzip
content-length: 154
content-type: application/json; charset=utf-8
date: Tue, 04 Aug 2020 14:23:24 GMT


Property headline
An engaging headline can grab a traveler's attention as they browse search results.
Headline tips
Headline
Sample Listing House
20 minimum
60
Property description
Let travelers know the story behind your home by describing your floor plan, what's unique about it, and what their stay might be like.
Description tips
Property description
400 minimum
10000
Property type
House
Bedrooms
2
Name
addAmenities
inbox?unreadO...
graphql
collect
beacon
errors
Headers
Preview
Response
Initiator
Timing
Cookies
Request Payload
view source
operationName: "updatePropertyContent"
propertyContentInput: {headline: "Sample Listing House"}
JSON dataset

100. A web browser with access to a runtime engine can then generate the user configured website including the user input objects and style data extracted from the database. For example, when a browser loads the "Describe your property" web page, a "graphql" POST requests the amenity object from the Vrbo server "https://www.vrbo.com." The Vrbo server responds with a JSON data comprising the user selected "Communal Pool" option and "Sample Listing House" headline. In addition, the JSON data includes the type name "ListingDetails," amenity type "UNIT" and additional meta-information that describe the amenity object.



```
▼ Request Headers
  :authority: www.vrbo.com
  :method: POST
  :path: /pob/api/graphql
  :scheme: https
  accept: */*
  accept-encoding: gzip, deflate, br
  accept-language: en-US,en;q=0.9
  clientid: Vrbo.PartnerOnboarding
  content-length: 882
  content-type: application/json
  cookie: ha-device-id=2cf1bc5f-c893-40a1-adff-d40911434b4b; hav=2cf1bc5f-c893-40a1-adff-d40911434b4b; hal
  Y6jwPv2b5rph9zDMbVpwX1YdnAfy5k; G_ENABLED_IDPS=google; HASESSIONV3=3d08855d-56e8-448a-98e7-2e5065c5b147
  origin: https://www.vrbo.com
  referer: https://www.vrbo.com/pob/checklist/321.2029562.2594079/propertyDetails
  sec-fetch-dest: empty
  sec-fetch-mode: cors
  sec-fetch-site: same-origin
  user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.
  x-csrf-jwt: eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ0b2tlbiI6ImYzMDIyODk2Nzk0NWY5NDkzNjEzZWJhMzViNWE5NWQ5Z
  x-homeaway-site: vrbo
```


Query message is embedded in a JSON file in the "graphql" POST


```
▼ Request Payload    view source
  ▼ {operationName: "ListingDetails",…}
    operationName: "ListingDetails"
    query: "query ListingDetails($listingId: String!, $siteName: String!, $locale: String!, $pcsVersion: S
  ▼ variables: {listingId: "321.2029562.2594079", siteName: "vrbo", locale: "en_US", pcsVersion: "/v2"}
      listingId: "321.2029562.2594079"
      locale: "en_US"
      pcsVersion: "/v2"
      siteName: "vrbo"
```



```
× Headers  Preview  Response  Initiator  Timing  Cookies
▼ {data: {,…}, extensions: {}}
  ▼ data: {,…}
    ▼ listingDetails: {headline: "Sample Listing House", description: "", bedrooms: 2, sleeps: 1, fullBathrooms: 1,…}
      ▼ amenities: [{key: "e0c63dad-3a15-34c8-8b75-21f9de77742c", name: "CHILDREN_NOT_ALLOWED",…},…]
        ▶ 0: {key: "e0c63dad-3a15-34c8-8b75-21f9de77742c", name: "CHILDREN_NOT_ALLOWED",…}
        ▶ 1: {key: "fe9c67e2-eaef-352e-8ef8-a57aa59df12b", name: "PETS_NOT_ALLOWED",…}
        ▶ 2: {key: "811dd33c-f969-316e-b9fd-008e42b0072f", name: "NON_SMOKING_ONLY",…}
        ▼ 3: {key: "a6ac73d0-ac45-31a2-a33f-86b8e69af4f9", name: "COMMUNAL_POOL", displayName: "Communal Pool",…}
            amenityType: "UNIT"
            displayName: "Communal Pool"
            key: "a6ac73d0-ac45-31a2-a33f-86b8e69af4f9"
            name: "COMMUNAL_POOL"
            __typename: "ListingAmenity"
      bedrooms: 2
      description: ""
      error: null
      fullBathrooms: 1
      halfBathrooms: 0
      headline: "Sample Listing House"
      propertyType: "house"
      sleeps: 1
      ▶ types: [{name: "studio", value: "studio", __typename: "PropertyType"},…]
      __typename: "ListingDetails"
  extensions: {}
```


Response JSON file from Vrbo includes the user selected settings

101. The presence of the above referenced features is demonstrated, by way of

example, by testing the Accused Instrumentalities for investigative purposes on https://www.expediagroup.com/, https://www.expedia.com/, and https://www.vrbo.com/, and by reference to publicly available information, including https://www.expediagroup.com/, https://welcome.expediagroup.com/en, https://expediaconnectivity.com/apis/product-management/property-api/api-definition.html, https://expediaconnectivity.com/apis/product-management/property-api/video.html, https://www.youtube.com/watch?v=NSVzEoqYLxI, https://welcome.expediagroup.com/en/how-it-works, https://aws.amazon.com/solutions/case-studies/expedia/, https://www.vrbo.com/, https://help.vrbo.com/articles/How-do-I-list-my-property-HA, https://help.vrbo.com/category/List_Your_Property, https://www.homeaway.com/platform/developer-api, and https://help.vrbo.com/category/Your_Listing.

102. On information and belief, Defendant has had knowledge of the '168 patent and its infringement thereof at least as early as July 28, 2019, and no later than August 31, 2020, when Plaintiff provided notices of the '168 patent and Defendant's infringement of the '168 patent. Furthermore, Defendant has been aware of the '168 patent and its infringement thereof since at least the filing of this complaint.

103. On information and belief, Defendant has contributed and is contributing to the infringement of the '168 patent because Defendant knows that the infringing aspects of its infringing products and services, including but not limited to the Accused Instrumentalities, are made for use in an infringement, and are not staple articles of commerce suitable for substantial non-infringing uses.

104. On information and belief, Defendant has induced and is inducing the infringement of the '168 patent, with knowledge of the '168 patent and that its acts, including

without limitation using, offering to sell, selling within, and importing into the United States, the Accused Instrumentalities, would aid and abet and induce infringement by customers, clients, partners, developers, and end users of the foregoing.

105. In particular, Defendant's actions that aid and abet others such as customers, clients, partners, developers, and end users to infringe include advertising and distributing the Accused Instrumentalities, and providing instructional materials, training, and other services regarding the Accused Instrumentalities. Defendant actively encourages the adoption of the Accused Instrumentalities and provides support sites for the vast network of developers working with the Accused Instrumentalities, emphasizing the simple and user-friendly nature of the Accused Instrumentalities and explaining that "[a]s an Expedia Group Partner, you'll have instant access to Partner Central, our platform offering a host of innovative tools to help make day-to-day management of your business quick and simple" (*see, e.g.,* https://welcome.expediagroup.com/en/about-us/list-on-expedia) and "[s]et your price, dates, rules, and more. We give you the tools to make sure you're in control… We're here for you, 24/7… A dedicated support team is ready around the clock to make sure that everything runs smoothly" (*see, e.g.,* https://www.vrbo.com/en-us/list?icid=IL___O_Text___top_nav_link_hp). On information and belief, Defendant has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant has had actual knowledge of the '168 patent and knowledge that their acts were inducing infringement of the '168 patent since at least the date Defendant received notice that its activities infringed the '168 patent.

106. Defendant's acts of infringement have caused damage to Plaintiff, and Plaintiff is entitled to recover damages from Defendant in an amount subject to proof at trial.

107. Defendant's infringement of Plaintiff's rights under the '168 patent will continue

to damage Plaintiff's business, causing irreparable harm, for which there is no adequate remedy at law, unless enjoined by this Court.

108. On information and belief, Defendant has acted with disregard of Plaintiff's patent rights, without any reasonable basis for doing so, and has willfully infringed and does willfully infringe the '168 patent.

109. The foregoing is illustrative of Defendant's infringement of the '168 patent. Plaintiff reserves the right to identify additional claims and Accused Instrumentalities in accordance with the Court's local rules and applicable scheduling orders.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 9,063,755

110. Plaintiff incorporates by reference paragraphs 1 to 109 above as if fully set forth herein.

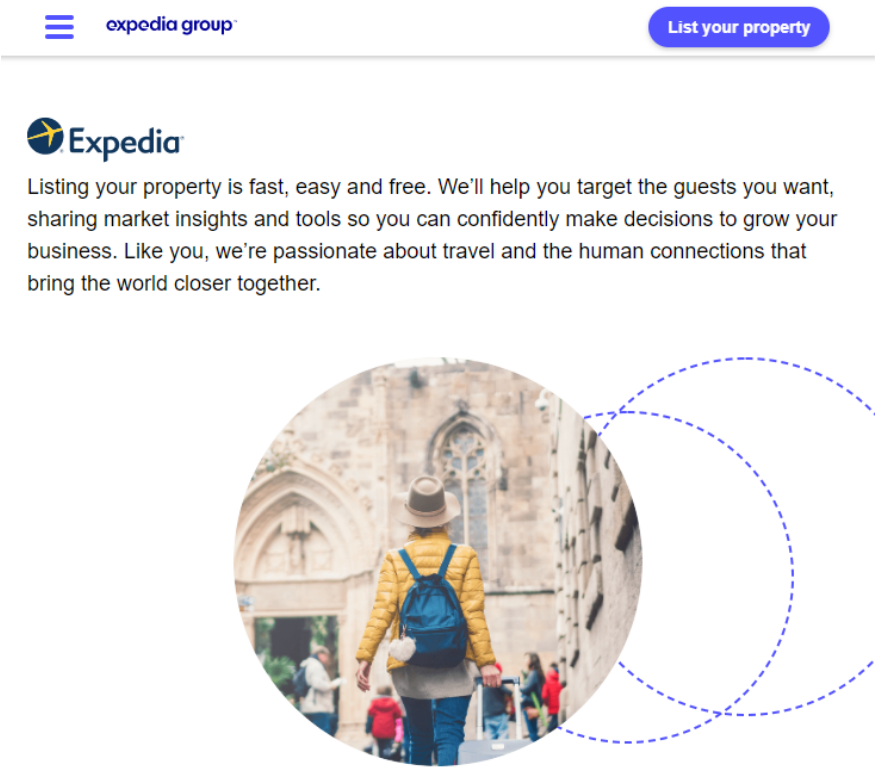
111. On information and belief, Defendant has infringed and is infringing the '755 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, directly and/or indirectly.

112. On information and belief, Defendant has infringed and is infringing the '755 patent by performing, without authority, one or more of the following acts: making, using, offering to sell, selling within, and importing into, the United States products and services that practice the claimed inventions of the '755 patent, including but not limited to the Expedia Group website builder platform for the Expedia Group products (the "Expedia platform"), and the Vrbo website builder platform, also known as the HomeAway platform, for the Vrbo products (the "Vrbo platform") (collectively the "Accused Instrumentalities").

The Expedia Platform:

113. The Expedia Platform infringes at least claim 12 of the '755 patent through a

combination of features that collectively practice each claimed limitation of claim 12. By way of example, the Expedia platform provides a platform to produce property listings for hotels and other lodgings to be displayed on a display of a device.



114. The Expedia platform utilizes a registry of web components related to inputs and outputs of web services, with each web component including a plurality of corresponding symbolic names for inputs and outputs. Web services available on the Expedia platform include various Application Programming Interfaces (APIs) that may be integrated on a property listing.

Developers

Integrate with the Expedia Marketplace with our advanced connectivity technology. You'll find everything you need to connect via a full suite of hospitality APIs. Get started by reviewing our documentation and samples, and get your test account.

- Proven APIs that automate the management of property availability, rates, and reservations
- Powerful feature solutions that provide additional value by automating the process of managing property descriptions and images

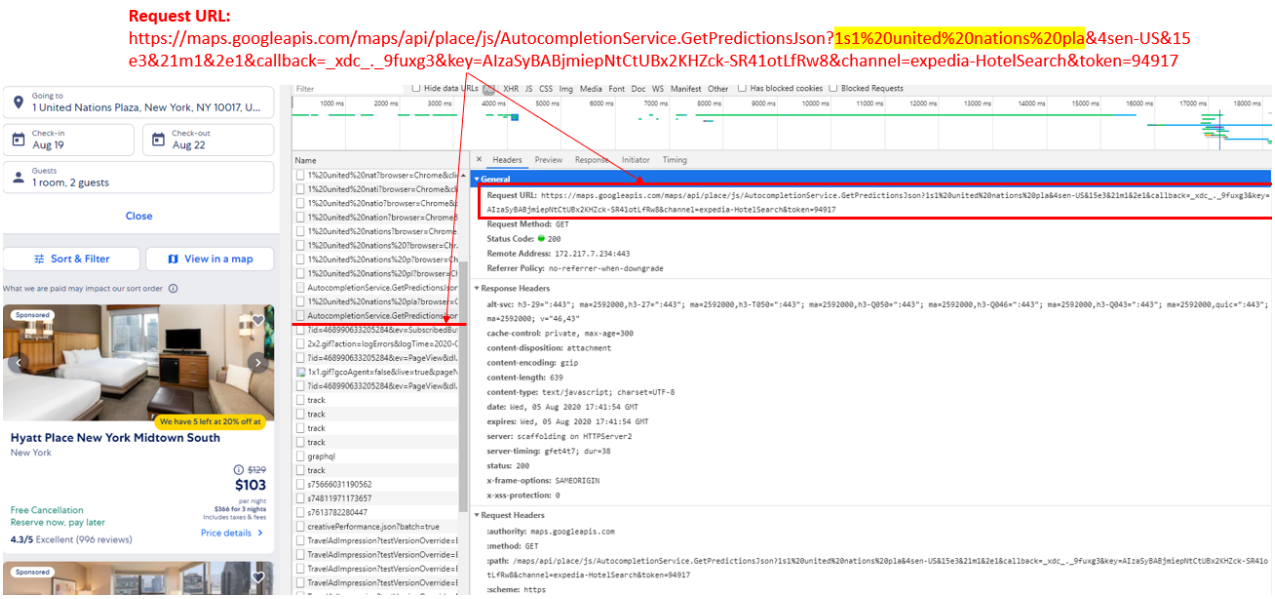
View Connectivity APIs →

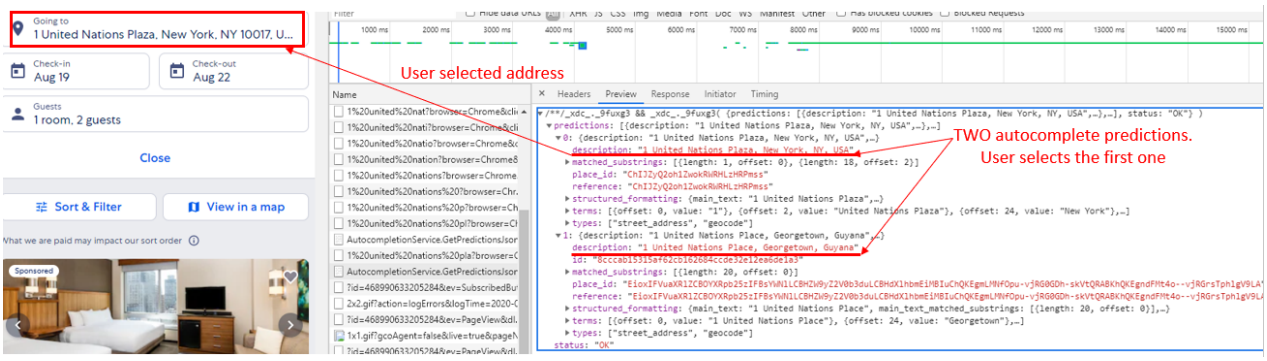
https://expediaconnectivity.com/

115. On information and belief, the Expedia platform utilizes JSON data to evoke web components for the APIs and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially character strings (i.e., symbolic names) with no persistent address or pointer. For example, the Expedia platform can embed an interactive map on a property listing to display the location of the property by integrating the Google Maps API and setting the location of the property with a simple HTTP request. To this end, the Google Maps API utilizes JSON data to communicate the location information for the property.

116. The registry for the Expedia platform also includes addresses for the web services where the input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps web service when a user inputs a partial address for a property to initiate an autocompletion service. The user-input address "1 united nations pla" (a partial address for the "Millennium Hilton

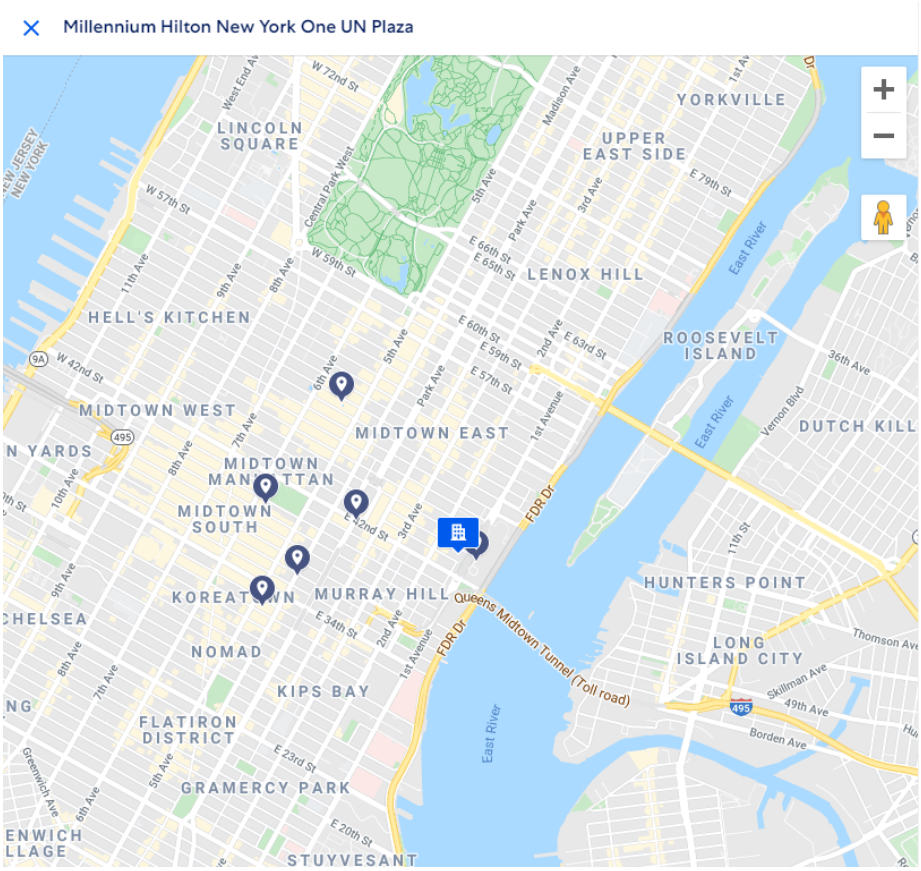
New York One UN Plaza") is embedded in the request URL and sent to the Google Maps API via an HTTP GET request to initiate an autocompletion service and retrieve predicted locations based on the partial address. The autocompletion service provided by Google Maps API responds with autocomplete predictions (e.g., "1 United Nations Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with the predicted address and identification of the address.





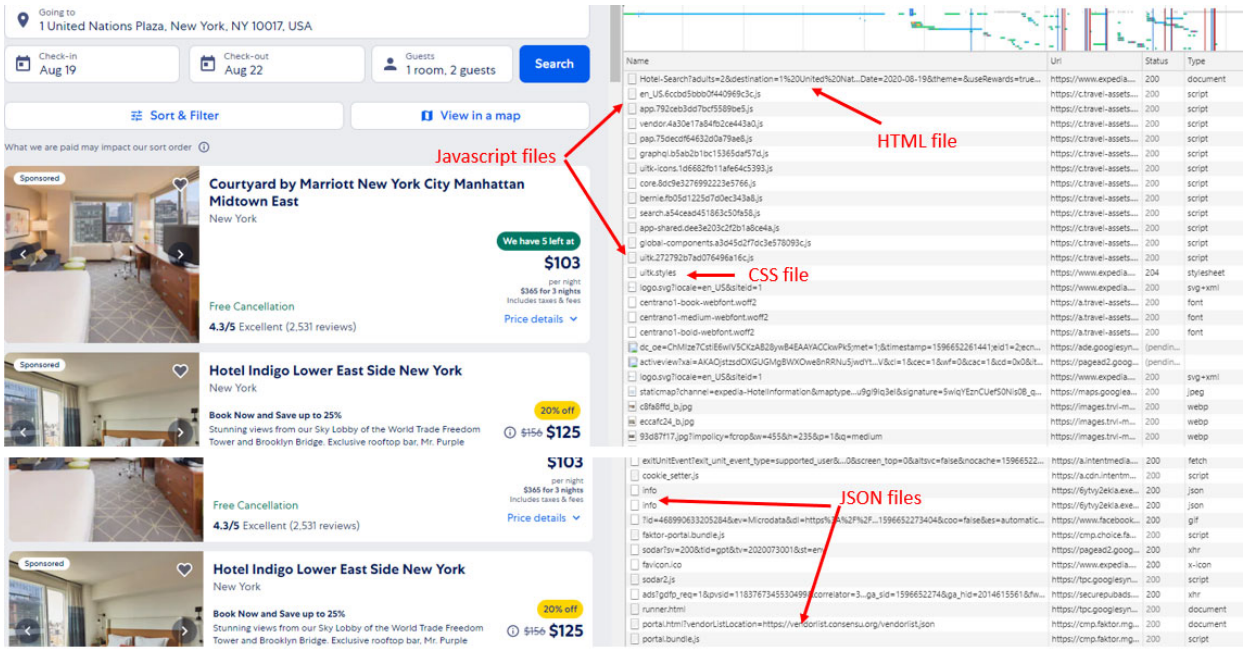
117. The Expedia platform is configured to allow definition of a UI object corresponding to a web component for an input or output of a web service, for presentation on the display. For

example, when the Google Maps API described above is embedded onto a property listing, UI objects for web components such as a map image, zoom-in and zoom-out buttons, and pins for nearby attractions and points of interest are defined for the Google Map web service.

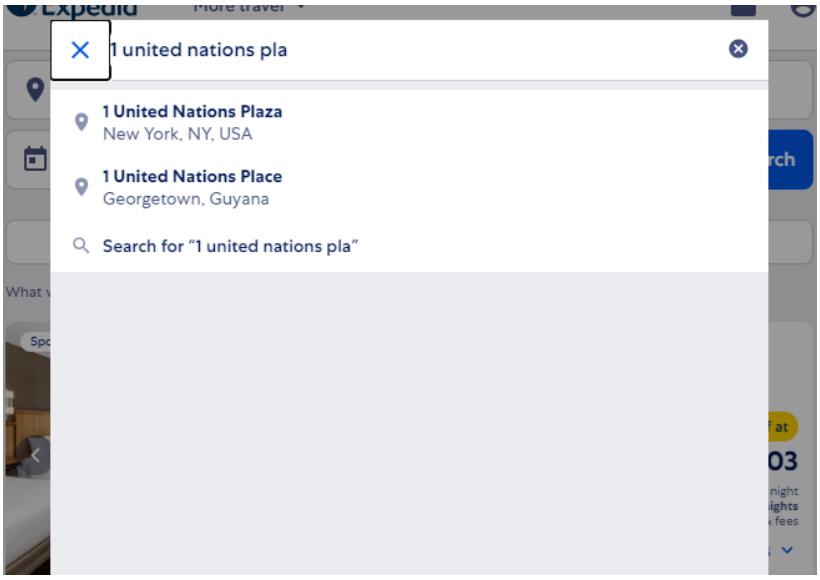


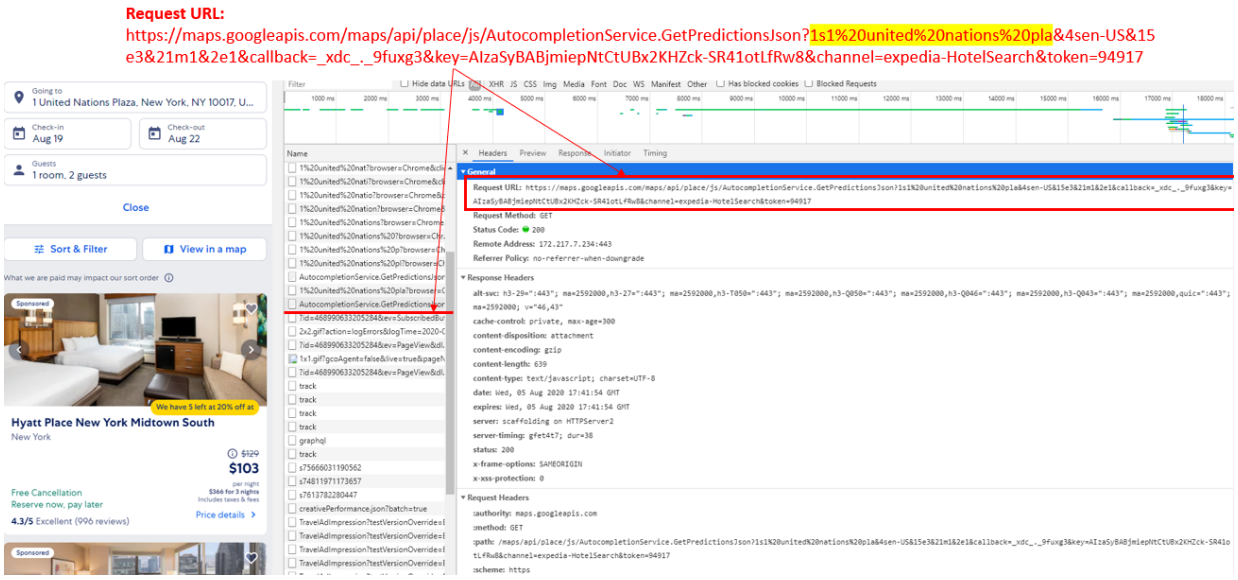
118. When a UI object is defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The Expedia platform then produces a device-independent application that includes the JSON data, as well as standard HTML, CSS and Javascript code. The application is executed on a device together with a device-dependent player, such as a browser engine for a browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. In the exemplary screenshots below, the Expedia platform converts HTML, CSS, Javascript, JSON, and other files into an active

website.



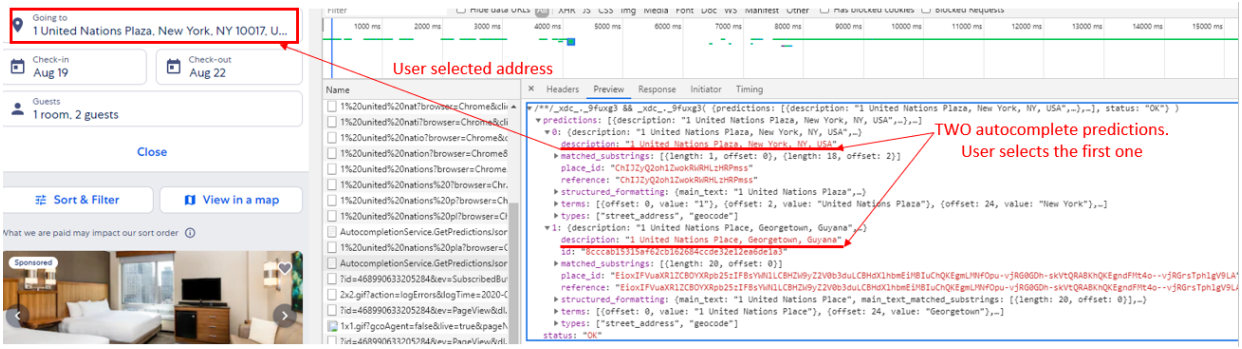
119. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name for the output. By way of example, the Expedia platform's Google Maps API can accept an input value such as a partial address from a user, as described above. The input partial address "1 united nations pla" is sent to the autocompletion service in the Google Maps API with an HTTP GET request. The address of the property is embedded in the request URL, with "1s" as a corresponding input symbolic name associated with the input value.

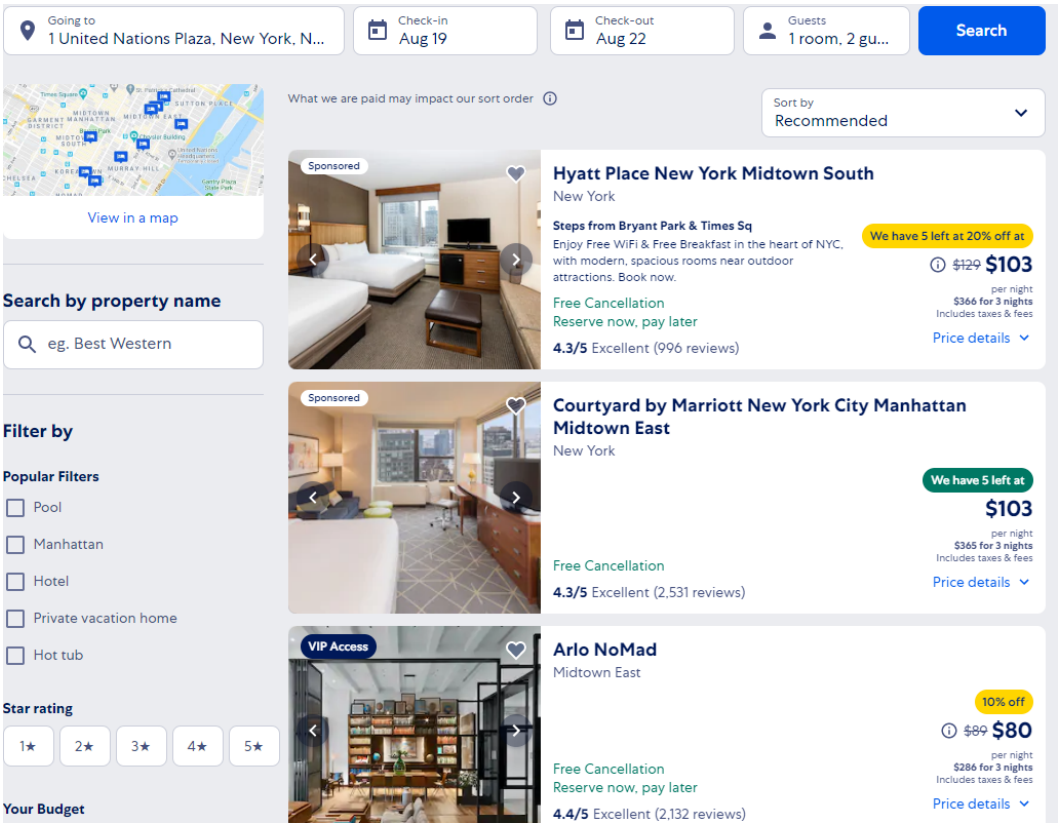




120. The input symbolic name is utilized by the Google Maps web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input partial address is received as described above, the autocompletion service generates and transmits corresponding autocomplete predictions (e.g., "1 United Nations Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with

the predicted address and identification of the address. From these autocomplete predictions, the user can select a complete address and request the server to display other properties located around that address.

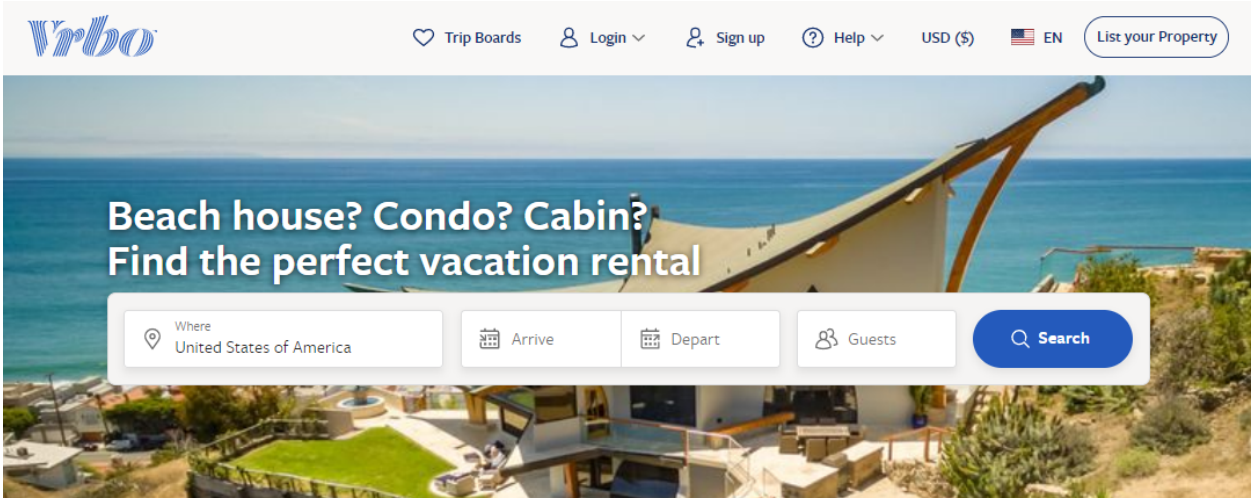




<u>The Vrbo Platform:</u>

121. The Vrbo platform infringes at least claim 12 of the '755 patent through a combination of features that collectively practice each claimed limitation of claim 12. By way of

example, the Vrbo platform provides a platform to produce property listings for vacation rentals to be displayed on a display of a device.



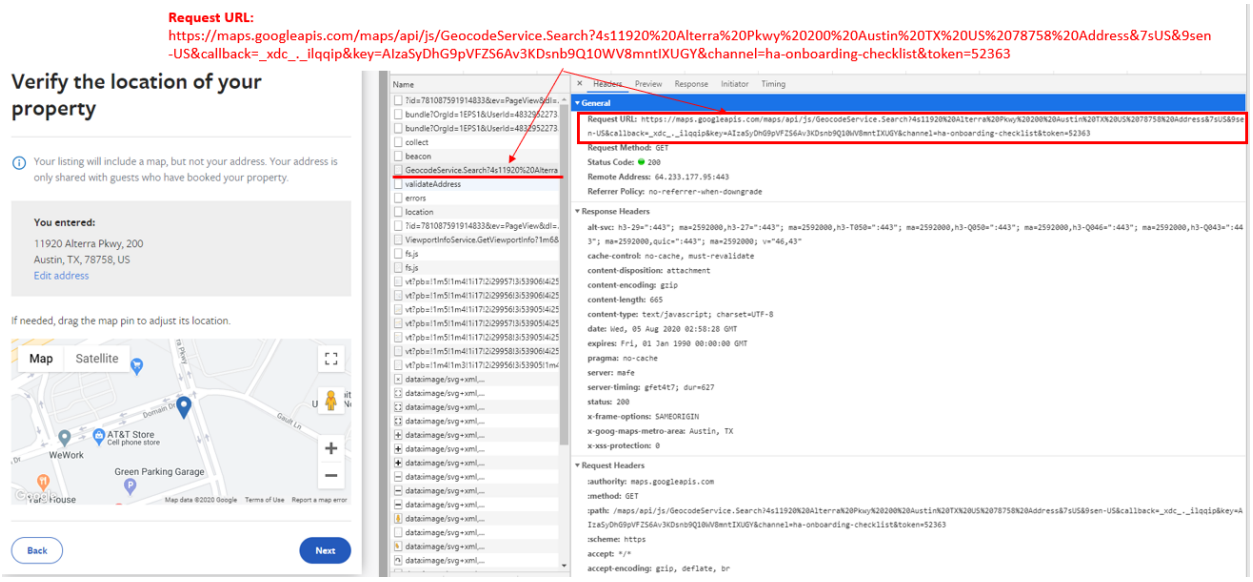
122. The Vrbo platform utilizes a registry of web components related to inputs and outputs of web services, with each web component including a plurality of corresponding symbolic names for inputs and outputs. Web services available on the Vrbo platform include various Application Programming Interfaces (APIs) (also known as "Homeaway APIs") that may be integrated on the property listings.

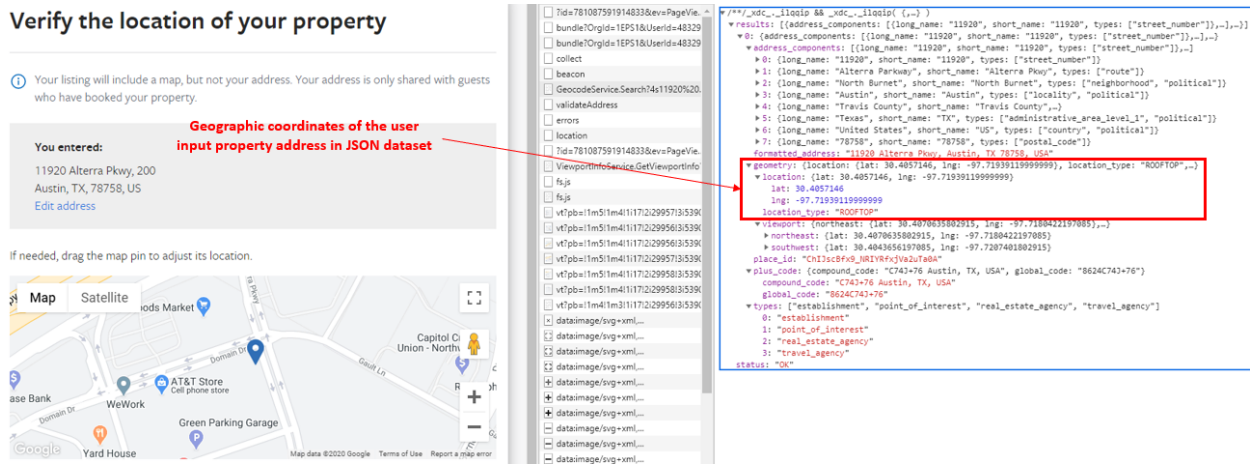
https://www.homeaway.com/platform/developer-api

123. On information and belief, the Vrbo platform utilizes JSON data to evoke web components for the APIs and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially character strings (i.e., symbolic names) with no persistent address or pointer. For example, each Vrbo property listing can embed an interactive map on a property listing to display the location of the property by integrating Google Maps API on the listing and by setting the location of the property with a simple HTTP request. In particular, the Google Maps API utilizes JSON data to communicate the location information for the property.

124. The registry for the Vrbo platform also includes addresses for the web services where the input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps

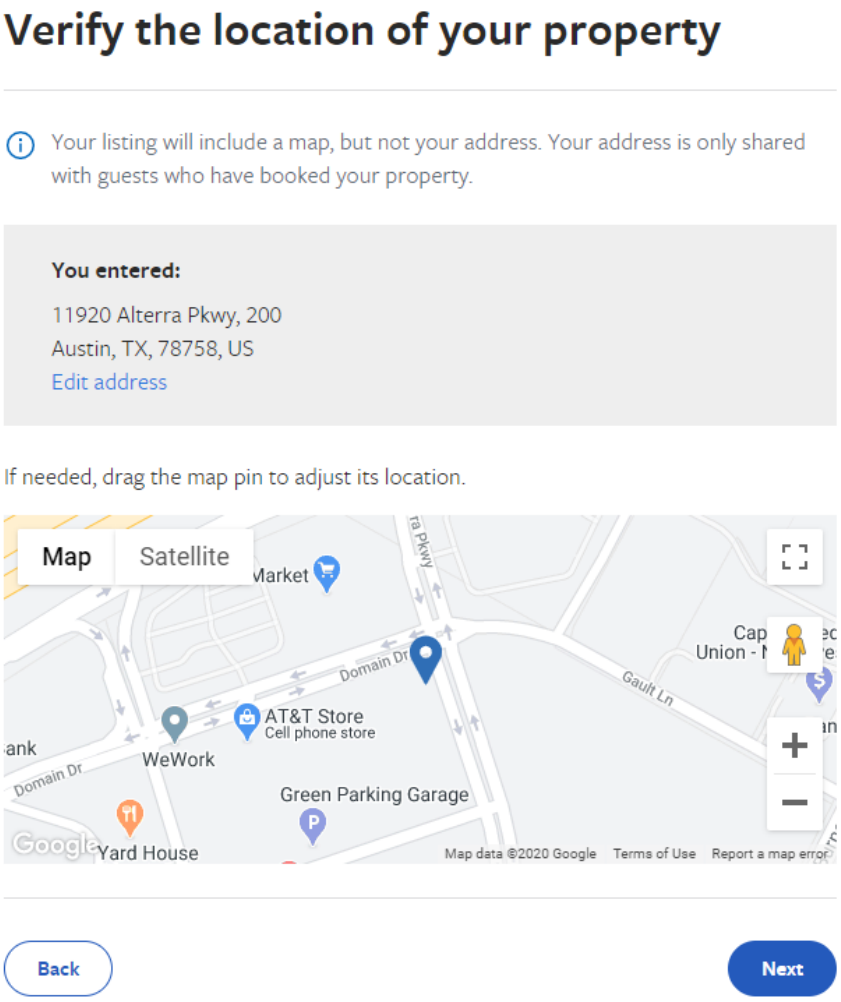
web service when an address is input into the API. The user input property address is embedded in the request URL and is sent to the Google Maps API via an HTTP GET request for Geocoding service, which converts the address into geographic coordinates and places a marker on the map to indicate the property's location. The Geocoding service in the Google Maps API responds to the input address with corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data, in which "formatted_address," "lat," and "lng" correspond to output symbolic names generated in response to the user input property address.





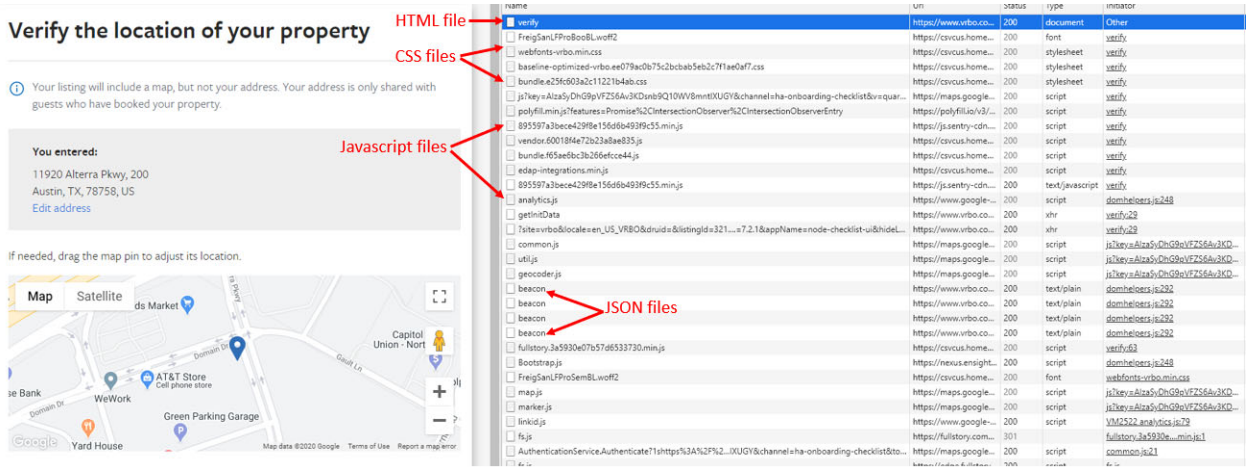
125. The Vrbo platform is configured to allow definition of a UI object corresponding

to a web component for an input or output of a web service, for presentation on the display. For example, when the Google Maps API described above is embedded onto a property listing, UI objects for web components such as a map image, zoom-in and zoom-out buttons, and pins for nearby attractions and points of interest are defined for the Google Map web service.



126. When a UI object is defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The Vrbo platform then produces a device-independent application that includes the JSON data, as well as standard HTML, CSS and Javascript code. The application is executed on a device together with a device-dependent player, such as a browser engine for a browser, or an operating

system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. In the example below, the Vrbo platform converts HTML, CSS, Javascript, JSON, and other files into an active "Verify the location of your property" web page.



127. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name. By way of example, the Vrbo platform can accept an input value (e.g., typed address of the property) from a user, as described above. When the user clicks on the "Save and continue" button, the input value is sent to the Geocoding service in the Google Maps API with an HTTP GET request. The address of the property is then embedded in the request URL with "4s" as a corresponding input symbolic name associated with the input address.

Where is your property located?

Your listing will include a map, but not your address. Your address is only shared with guests who have booked your property.

Country
United States

Street address
11920 Alterra Pkwy

Unit number (optional)
200

City
Austin

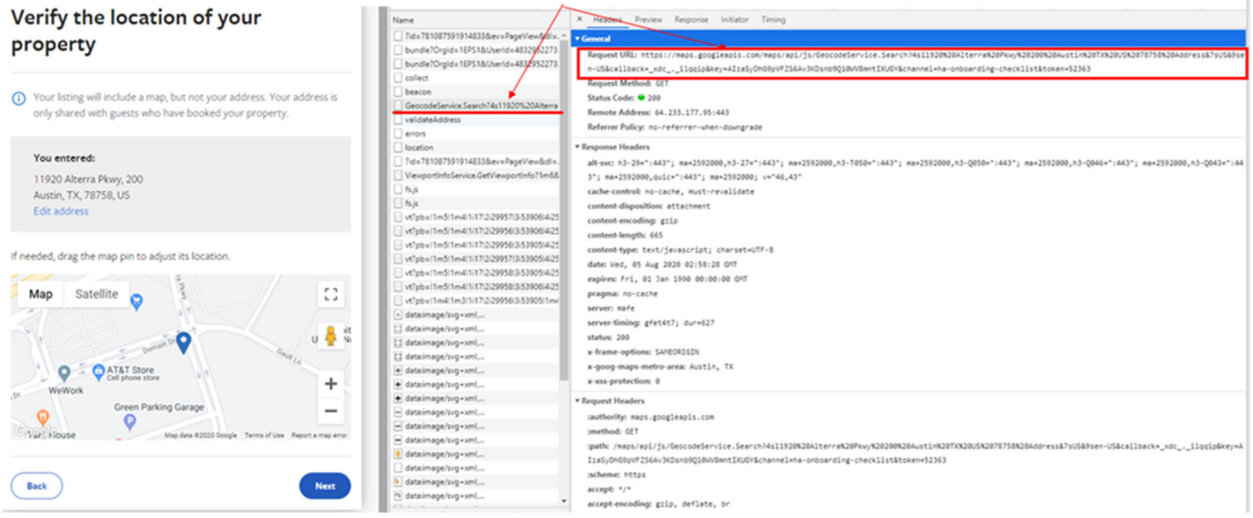
State
Texas

ZIP code
78758

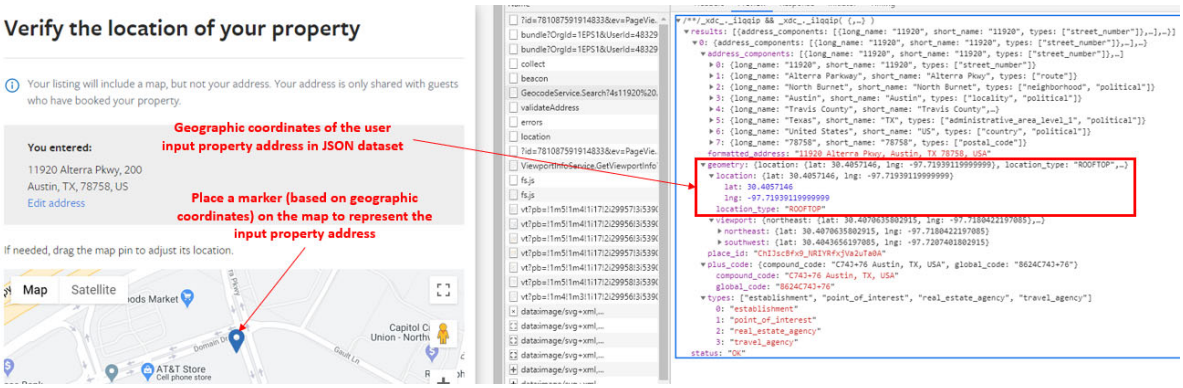
Back

Save and continue

Request URL:
https://maps.googleapis.com/maps/api/js/GeocodeService.Search?4s11920%20Alterra%20Pkwy%20200%20Austin%20TX%20US%2078758%20Address&7sUS&9sen-US&callback=_xdc_._ilqqip&key=AIzaSyDhG9pVFZS6Av3KDsnb9Q10WV8mntIXUGY&channel=ha-onboarding-checklist&token=52363



128. The input symbolic name is utilized by the Google Map web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input address is received as described above, the Geocoding service generates and transmits corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data to the Vrbo platform. The JSON data includes "formatted_address," "lat," and "lng," which represent symbolic names associated with the property address, and latitude and longitude coordinates. The geographic coordinates are then utilized to place a marker on the map indicating the address of property.



129. The presence of the above referenced features is demonstrated, by way of example, by testing the Accused Instrumentalities for investigative purposes on https://www.expediagroup.com/, https://www.expedia.com/, and https://www.vrbo.com/, and by reference to publicly available information, including https://www.expediagroup.com/, https://welcome.expediagroup.com/en, https://expediaconnectivity.com/, https://expediaconnectivity.com/apis/product-management/property-api/api-definition.html, https://expediaconnectivity.com/apis/product-management/property-api/video.html, https://www.youtube.com/watch?v=NSVzEoqYLxI, https://welcome.expediagroup.com/en/how-it-works, https://aws.amazon.com/solutions/case-studies/expedia/, https://www.vrbo.com/,

https://help.vrbo.com/articles/How-do-I-list-my-property-HA, https://help.vrbo.com/category/List_Your_Property, https://www.homeaway.com/platform/developer-api, https://developers.google.com/maps/documentation/javascript/geocoding, and https://help.vrbo.com/category/Your_Listing.

130. On information and belief, Defendant has had knowledge of the '755 patent and its infringement thereof at least as early as July 28, 2019, and no later than August 31, 2020, when Plaintiff provided notices of the '755 patent and Defendant's infringement of the '755 patent. Furthermore, Defendant has been aware of the '755 patent and its infringement thereof since at least the filing of this complaint.

131. On information and belief, Defendant has contributed and is contributing to the infringement of the '755 patent because Defendant knows that the infringing aspects of its infringing products and services, including but not limited to the Accused Instrumentalities, are made for use in an infringement, and are not staple articles of commerce suitable for substantial non-infringing uses.

132. On information and belief, Defendant has induced and is inducing the infringement of the '755 patent, with knowledge of the '755 patent and that its acts, including without limitation using, offering to sell, selling within, and importing into the United States, the Accused Instrumentalities, would aid and abet and induce infringement by customers, clients, partners, developers, and end users of the foregoing.

133. In particular, Defendant's actions that aid and abet others such as customers, clients, partners, developers, and end users to infringe include advertising and distributing the Accused Instrumentalities, providing instructional materials, training, and other services regarding

the Accused Instrumentalities, and providing free listings for the Accused Instrumentalities. Defendant actively encourages the adoption of the Accused Instrumentalities and provides support sites for the vast network of developers working with the Accused Instrumentalities, emphasizing the simple and user-friendly nature of the Accused Instrumentalities and explaining that "[l]isting is free and it's easy to get started. Just tell us about your property (Is it an inn? A vacation home? A ryokan?) and we'll set up your account" (*see, e.g.,* https://welcome.expediagroup.com/en/how-it-works.) and "[s]et your price, dates, rules, and more. We give you the tools to make sure you're in control… We're here for you, 24/7… A dedicated support team is ready around the clock to make sure that everything runs smoothly" (*see, e.g.,* https://www.vrbo.com/en-us/list?icid=IL___O_Text___top_nav_link_hp). On information and belief, Defendant has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant has had actual knowledge of the '755 patent and knowledge that their acts were inducing infringement of the '755 patent since at least the date Defendant received notice that its activities infringed the '755 patent.

134. Defendant's acts of infringement have caused damage to Plaintiff, and Plaintiff is entitled to recover damages from Defendant in an amount subject to proof at trial.

135. Defendant's infringement of Plaintiff's rights under the '755 patent will continue to damage Plaintiff's business, causing irreparable harm, for which there is no adequate remedy at law, unless enjoined by this Court.

136. On information and belief, Defendant has acted with disregard of Plaintiff's patent rights, without any reasonable basis for doing so, and has willfully infringed and does willfully infringe the '755 patent.

137. The foregoing is illustrative of Defendant's infringement of the '755 patent.

Plaintiff reserves the right to identify additional claims and Accused Instrumentalities in accordance with the Court's local rules and applicable scheduling orders.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 9,471,287

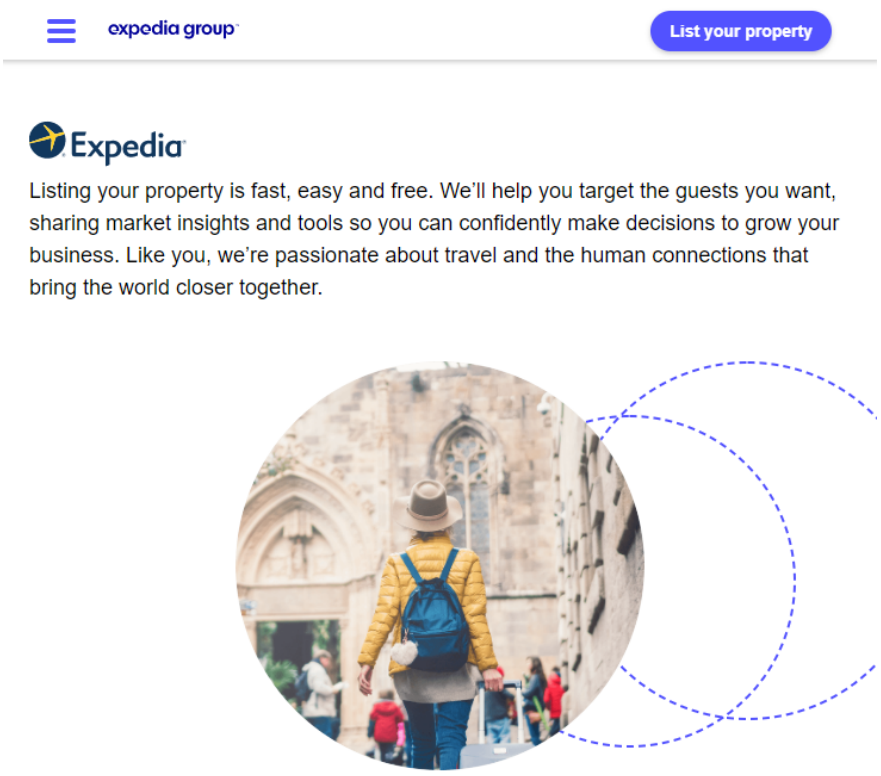
138. Plaintiff incorporates by reference paragraphs 1 to 137 above as if fully set forth herein.

139. On information and belief, Defendant has infringed and is infringing the '287 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, directly and/or indirectly.

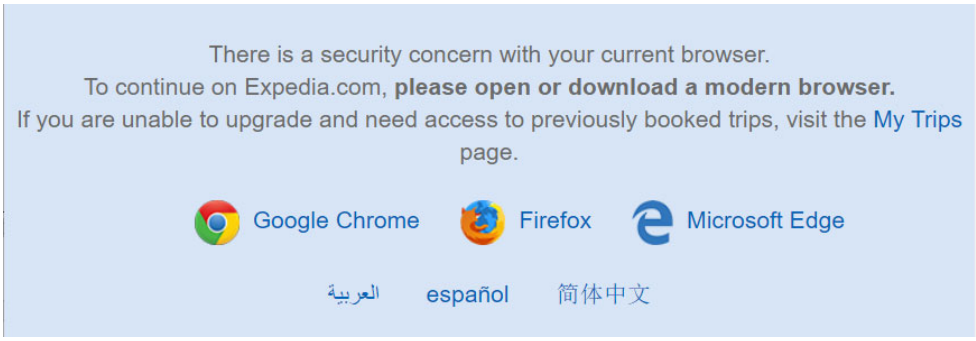
140. On information and belief, Defendant has infringed and is infringing the '287 patent by performing, without authority, one or more of the following acts: making, using, offering to sell, selling within, and importing into, the United States products and services that practice the claimed inventions of the '287 patent, including but not limited to the Expedia Group website builder platform for the Expedia Group products (the "Expedia platform"), and the Vrbo website builder platform, also known as the HomeAway platform, for the Vrbo products (the "Vrbo platform") (collectively the "Accused Instrumentalities").

The Expedia Platform:

141. The Expedia platform infringes at least claim 15 of the '287 patent through a combination of features that collectively practice each claimed limitation of claim 15. By way of example, the Expedia platform provides a platform to produce property listings for hotels and other lodgings to be displayed on a display of a device.



142. The Expedia platform displays content through a device that has a device-dependent player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. For example, the Expedia platform displays content through modern browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge.



https://www.expedia.com/upgradebrowser

143. The Expedia platform defines a UI object for presentation on the display, the UI object corresponding to a web component included in a registry of one or more web components selected from an input of a web service and an output of a web service. Web services available on the Expedia platform include various Application Programming Interfaces (APIs) that may be integrated on a property listing.

Developers

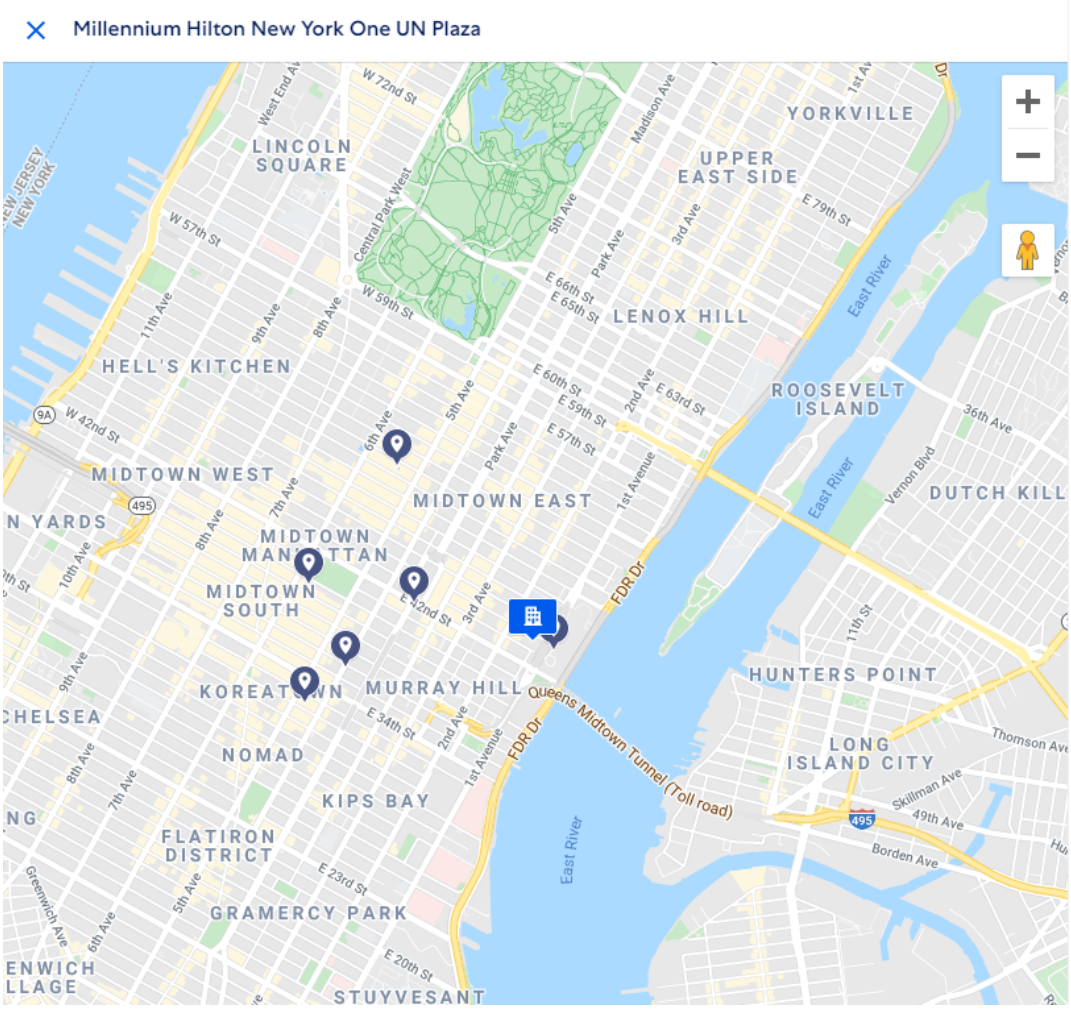
Integrate with the Expedia Marketplace with our advanced connectivity technology. You'll find everything you need to connect via a full suite of hospitality APIs. Get started by reviewing our documentation and samples, and get your test account.

- Proven APIs that automate the management of property availability, rates, and reservations
- Powerful feature solutions that provide additional value by automating the process of managing property descriptions and images

View Connectivity APIs →

https://expediaconnectivity.com/

144. By way of example, when an interactive map is embedded on the property listing to integrate the Google Maps API, UI objects for input and output web components such as a map image, zoom-in and zoom-out buttons, and pin drops for nearby attractions and points of interest, are defined for the Google Maps web service.



145. In order to store and transmit data for the APIs, the Expedia platform employs JSON data to evoke web components and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially character strings (i.e., symbolic names) with no persistent address or pointer. For example, when the Google Maps API is embedded on a property listing, the Expedia platform sets the location of the property with a simple HTTP request, employing JSON data to communicate the location information for the property with the Expedia platform.

146. The Expedia platform's web components and symbolic names (e.g., JSON data) described above, are located in a MySQL registry used by Amazon Web Services (AWS), a cloud

computing service for the Expedia platform.

Expedia Group Increases Agility and Resiliency by Going All In on AWS

2018

Expedia Group is all in on AWS, with plans to migrate 80 percent of its mission-critical apps from its on-premises data centers to the cloud in the next two to three years. By using AWS, Expedia Group has become more resilient. Expedia Group's developers have been able to innovate faster while saving the company millions of dollars. Expedia Group provides travel-booking services across its flagship site Expedia.com and about 200 other travel-booking sites around the world.

https://aws.amazon.com/solutions/case-studies/expedia/

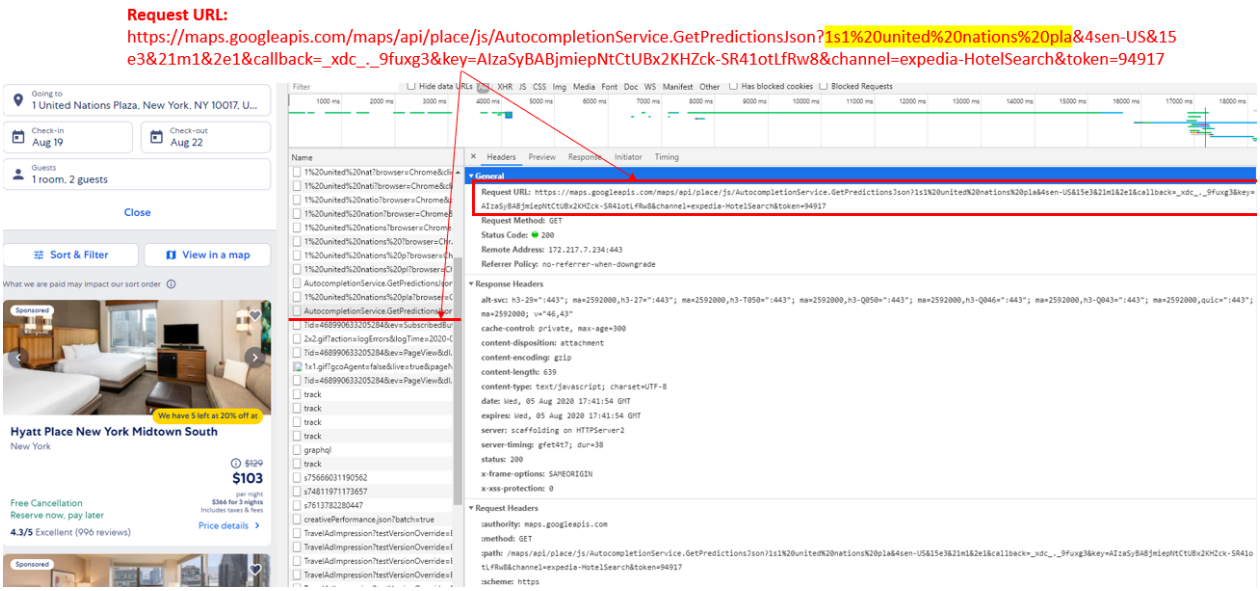
In simple words AWS allows you to do the following things-

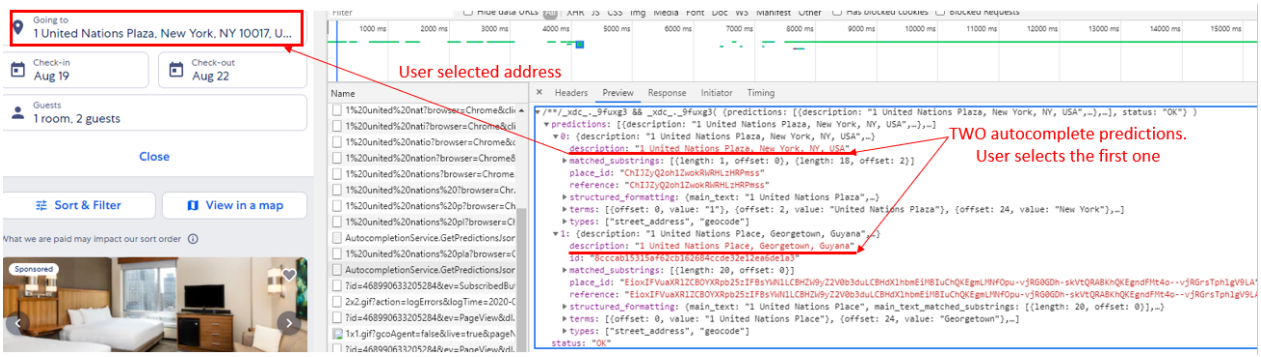
1. Running web and application servers in the cloud to host dynamic websites.
2. Securely store all your files on the cloud so you can access them from anywhere.
3. Using managed databases like MySQL, PostgreSQL, Oracle or SQL Server to store information.
4. Deliver static and dynamic files quickly around the world using a Content Delivery Network (CDN).
5. Send bulk email to your customers.

https://blog.usejournal.com/what-is-aws-and-what-can-you-do-with-it-395b585b03c

147. The registry for the Expedia platform also includes addresses for the web services where input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps web service when a user inputs a partial address for a property to initiate an autocompletion

service. The user-input property address "1 united nations pla" (e.g., address for the "Millennium Hilton New York One UN Plaza") is embedded in the request URL and is sent to the Google Maps API via an HTTP GET request to initiate an autocompletion service and retrieve predicted locations based on the partial address. The autocompletion service provided by Google Maps API responds with autocomplete predictions (e.g., "1 United Nations Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with the predicted address and identification of the address.

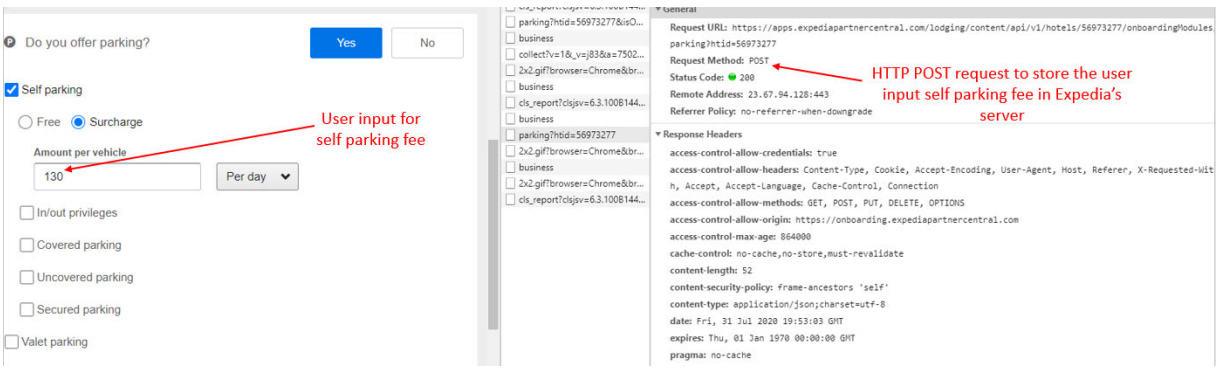


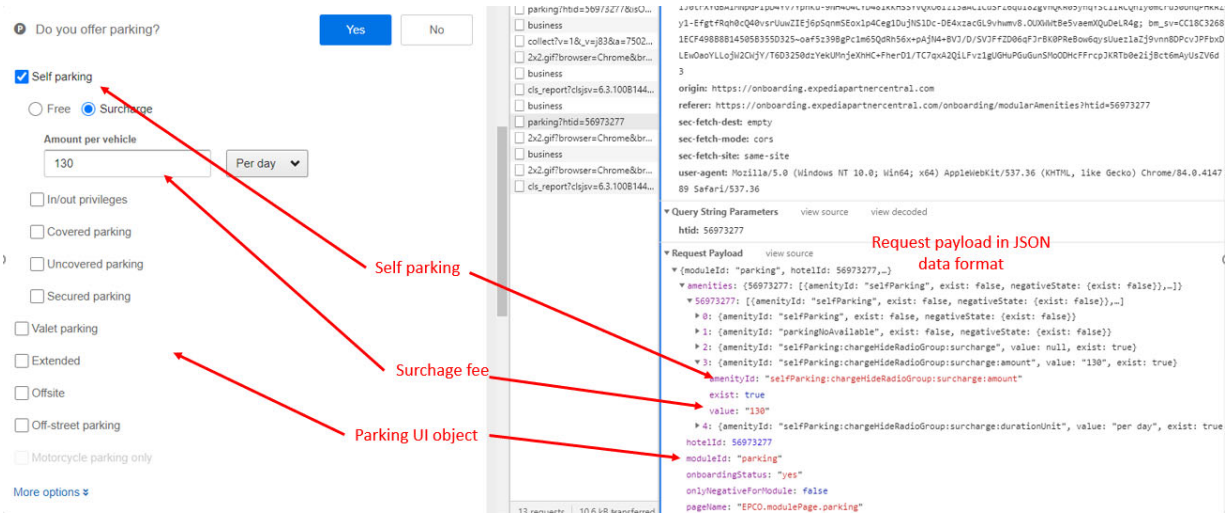


148. The defined UI objects described above are either selected by a user of an

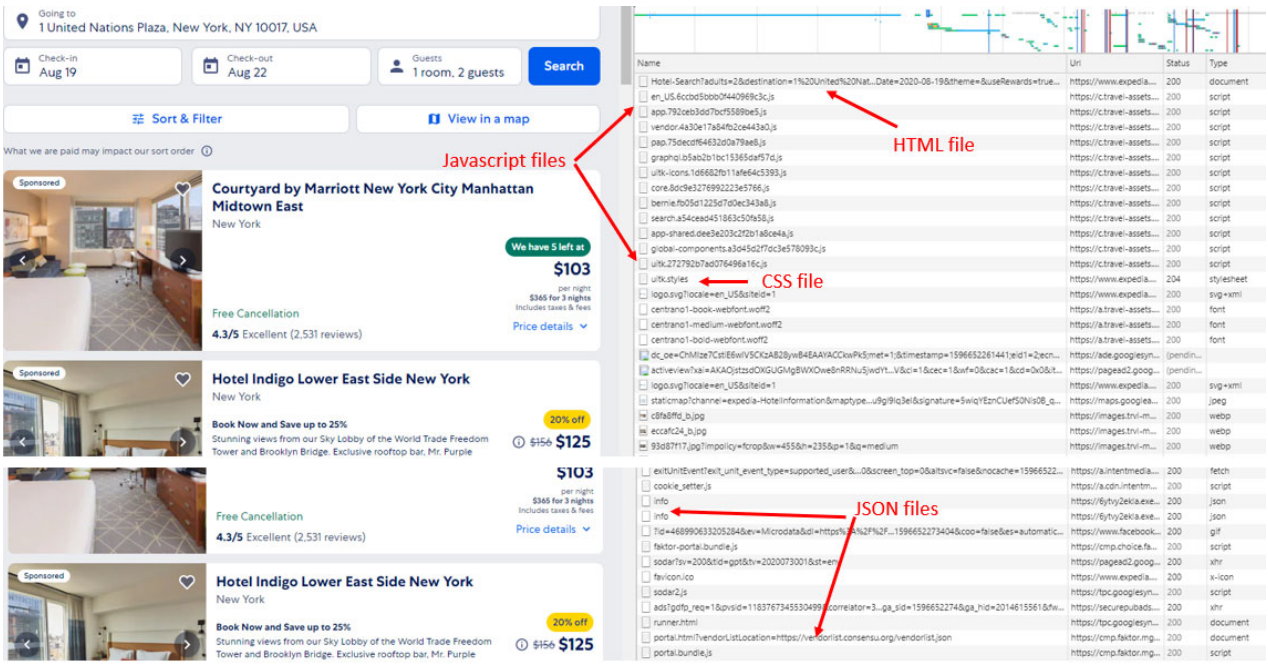
authoring tool or automatically selected by the Expedia platform as preferred UI objects. For example, when the Google Maps API is integrated onto a property listing as described above, UI objects for web components such as the zoom-in and zoom-out buttons are automatically selected by the Expedia platform as preferred UI objects.

149. When a UI object is so defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The symbolic name has an associated data format class type corresponding to a subclass of UI objects that support the data format type of the symbolic name, and has the preferred UI object. For example, as shown below, a user can configure a "parking" object (i.e., a module in Expedia websites) by providing a "Self parking" option and set a surcharge fee to "130 per day" when listing his/her property. The "Self parking" option and the user input surcharge fee "130" are sent to the Expedia server in the format of JSON data via a HTTP POST request "parking?htid=56973277" and are further stored in the Expedia's database. In particular, "AmenityId" is a symbolic name associated with the "Self parking" option and "value" is a symbolic name associated with the amount of the surcharge fee "130."

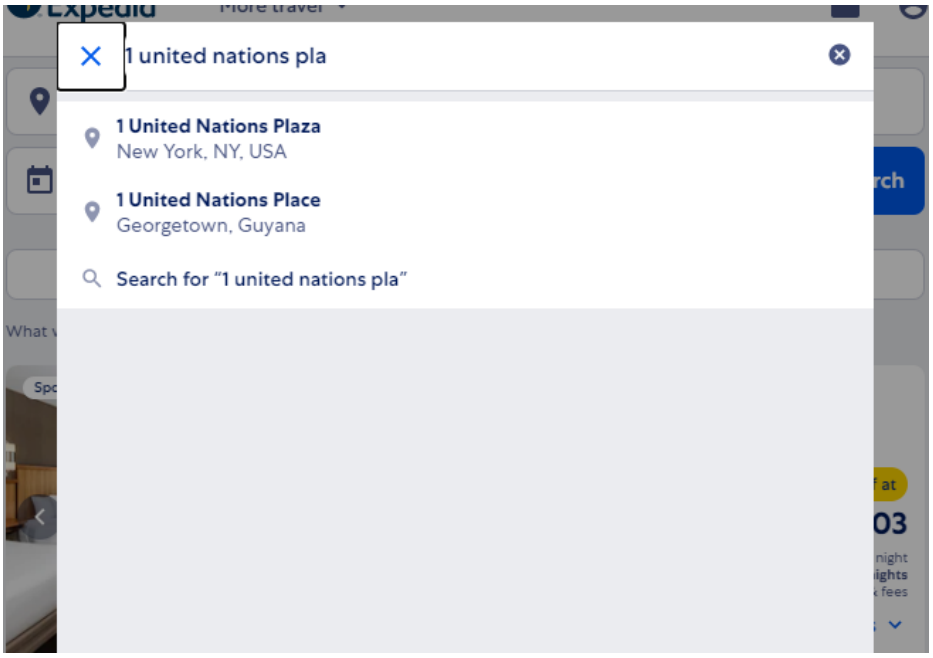


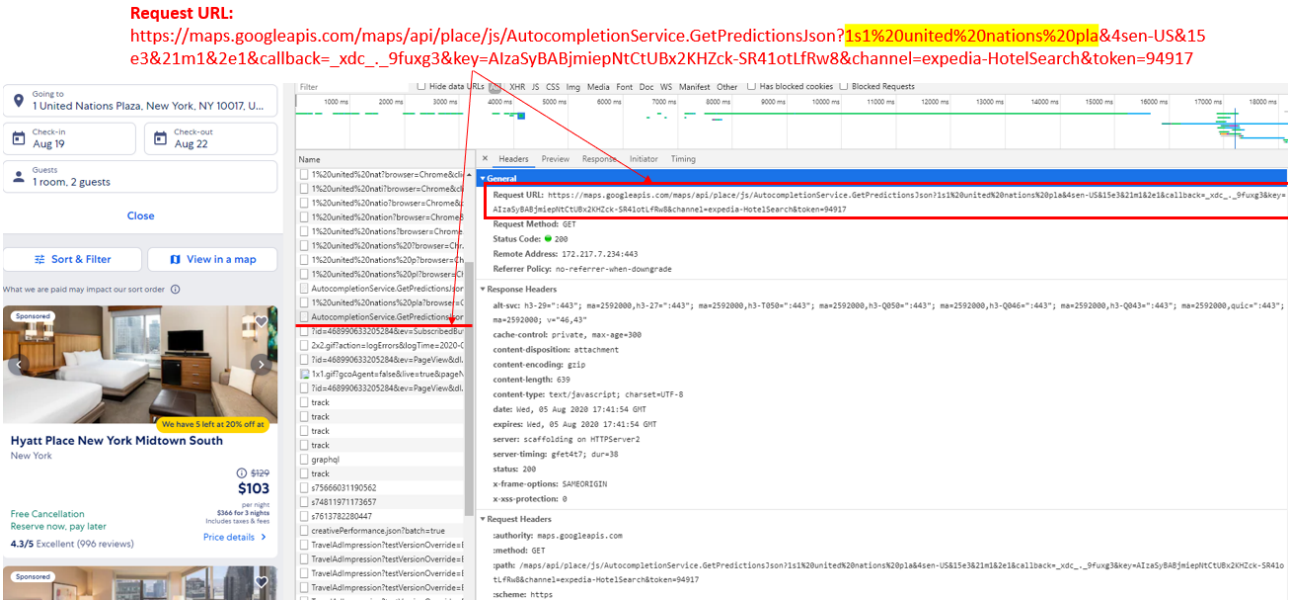


150. The Expedia platform then produces a device-independent application that includes the JSON data, as well as standard HTML, CSS and Javascript code. The application is executed on a device together with a device-dependent player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. In the example below, the Expedia platform converts HTML, CSS, Javascript, JSON, and other files into an active property listing.



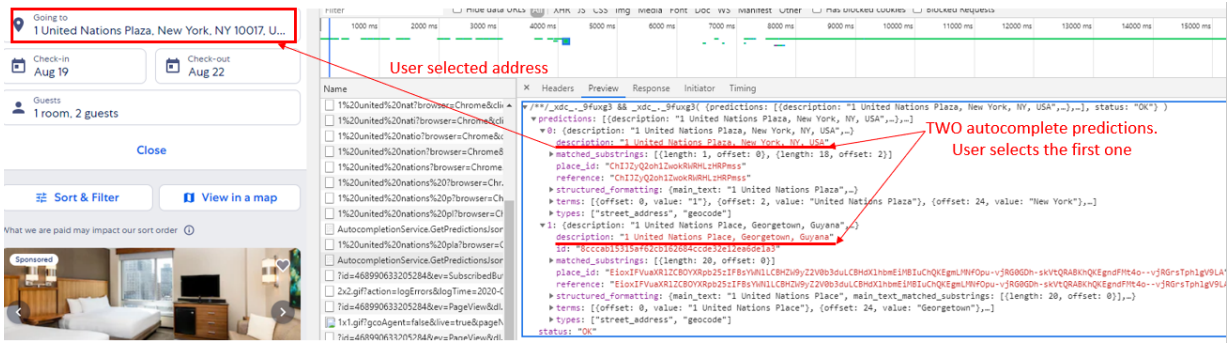
151. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name for the output. By way of example, the Expedia platform's Google Maps API can accept an input value such as a partial address from a user, as described above. As shown below, the input partial address "1 united nations pla" is sent to the autocompletion service in the Google Maps API with an HTTP GET request. The address of the property is embedded in the request URL, with "1s" as a corresponding input symbolic name associated with the input value.

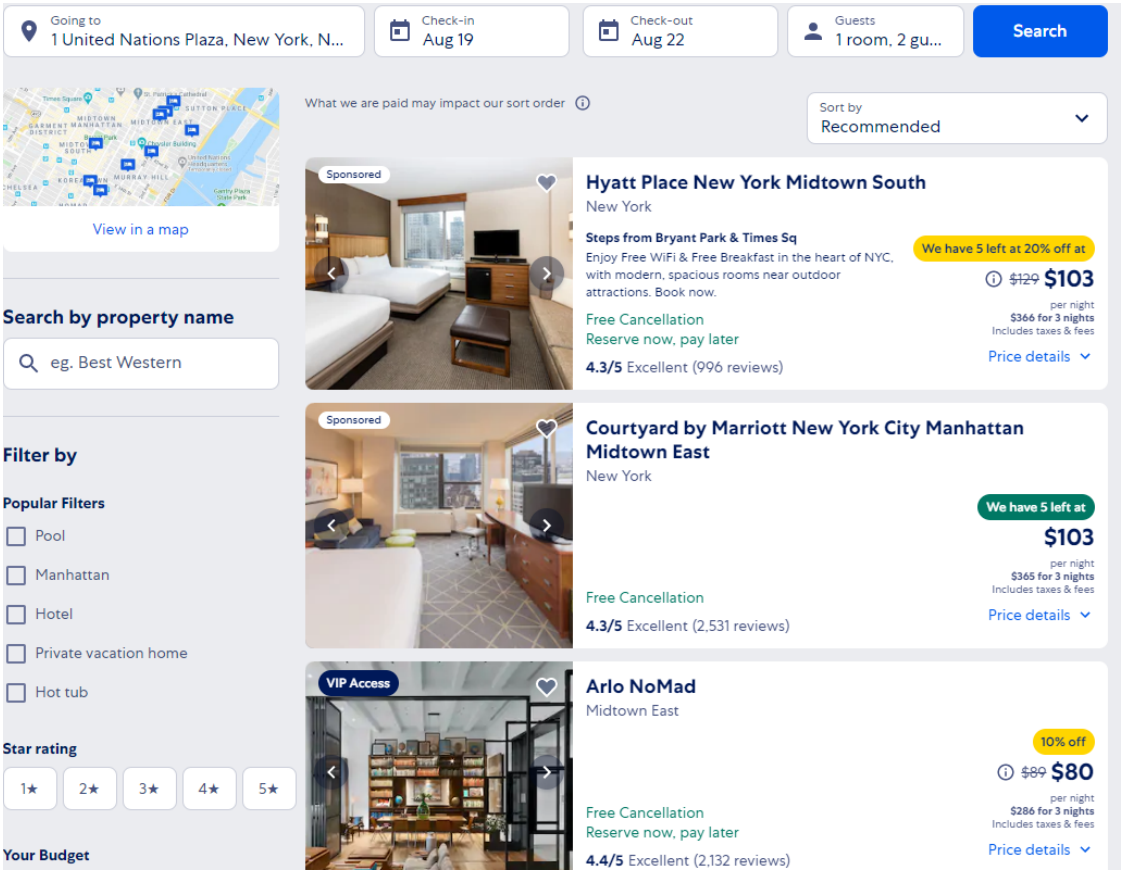




152. The input symbolic name is utilized by the Google Maps web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input partial address is received as described above, the autocompletion service generates and transmits corresponding autocomplete predictions (e.g., "1 United Nations

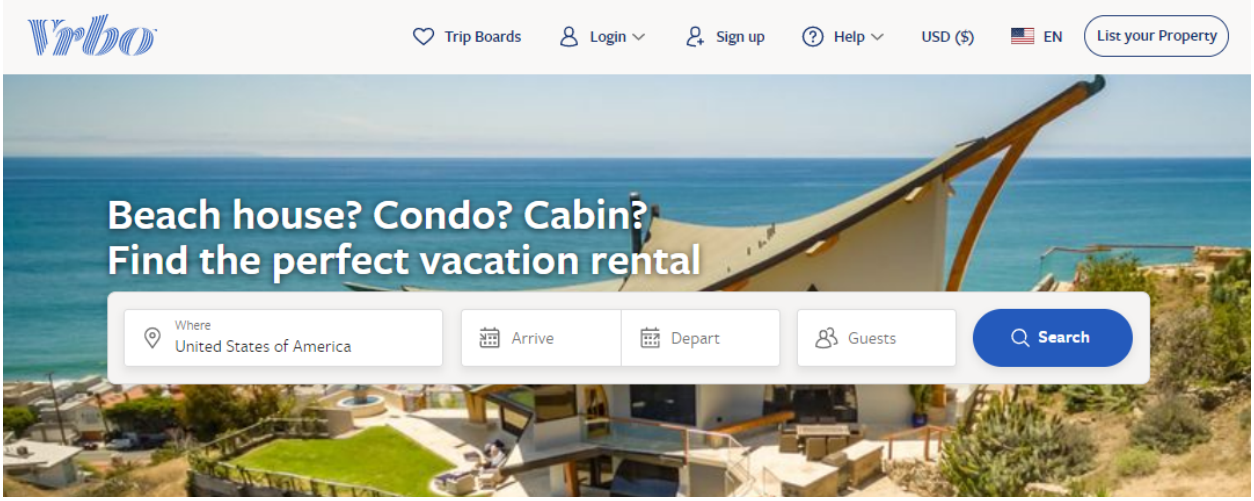
Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with the predicted address and identification of the address. From these autocomplete predictions, the user can select the complete address and request the server to display other properties located around that address.





<u>The Vrbo Platform</u>:

153. The Vrbo platform infringes at least claim 15 of the '287 patent through a combination of features that collectively practice each claimed limitation of claim 15. By way of example, the Vrbo platform provides a platform to produce property listings for vacation rentals to be displayed on a display of a device.



154. The Vrbo platform displays content through a device that has a device-dependent player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. For example, the Vrbo platform displays content through modern browsers such as Google Chrome, Mozilla Firefox, Microsoft Edge, Internet Explorer, iOS Safari, and Android Chrome.

Vrbo

Trip Boards | Login

FILTERS + | Search Help | TRAVELER CHAT

Find Help by Category

- Find a Property
- Book a Property
- Your Stay
- Your Review
- Getting Started
- Your Safety
- Your Account
- Your Listing
- Manage Reservations

Help Home /Your Account /Sign In

What web browsers are supported by the site?

We strive to provide our customers with modern, fast, safe and secure web browsing experience.

In order to provide you with a great user experience, we officially support the following browsers:

- Internet Explorer / Edge 16 or higher
- Firefox 59 or higher
- Chrome 64 or higher
- Safari 10 or higher

On mobile devices, we officially support the following:

- iOS Safari 9 or higher (iPhone and iPad)
- Android Chrome 65 or higher (Android Phones and Tablets)

While our sites may continue to function on other devices and in other browsers than those listed, occasionally you may see a warning if you are using a browser or device with known issues. While we do our best to support browsers that are most commonly in use, it is not possible to support all, and therefore we recommend upgrading to one of the above-mentioned browsers.

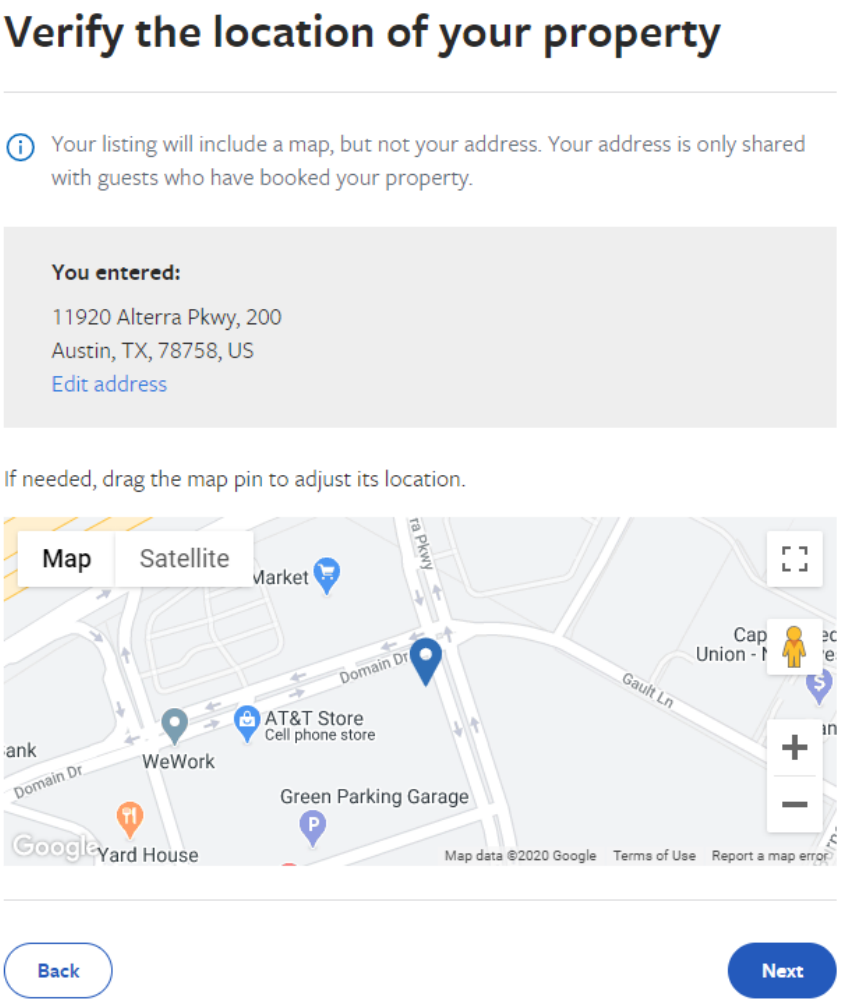
To view instructions on how to upgrade your internet browser, visit http://browsehappy.com/.

https://help.vrbo.com/articles/What-web-browsers-are-supported-by-the-site

155. The Vrbo platform defines a UI object for presentation on the display, the UI object corresponding to a web component included in a registry of one or more web components selected from an input of a web service and an output of a web service. Web services available on the Expedia platform include various Application Programming Interfaces (APIs) that may be integrated on a property listing.

https://www.homeaway.com/platform/developer-api

156. By way of example, when an interactive map is embedded on the property listing by integrating the Google Maps API, UI objects for input and output web components such as a map image, zoom-in and zoom-out buttons, and pins for nearby attractions and points of interest, are defined for the Google Map web service.

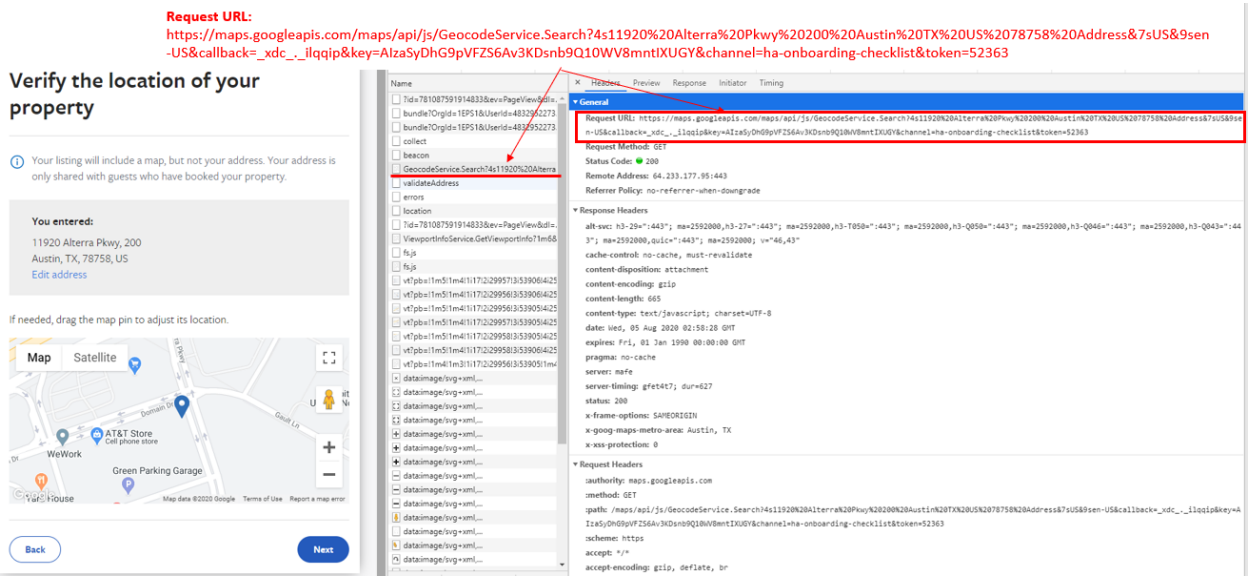


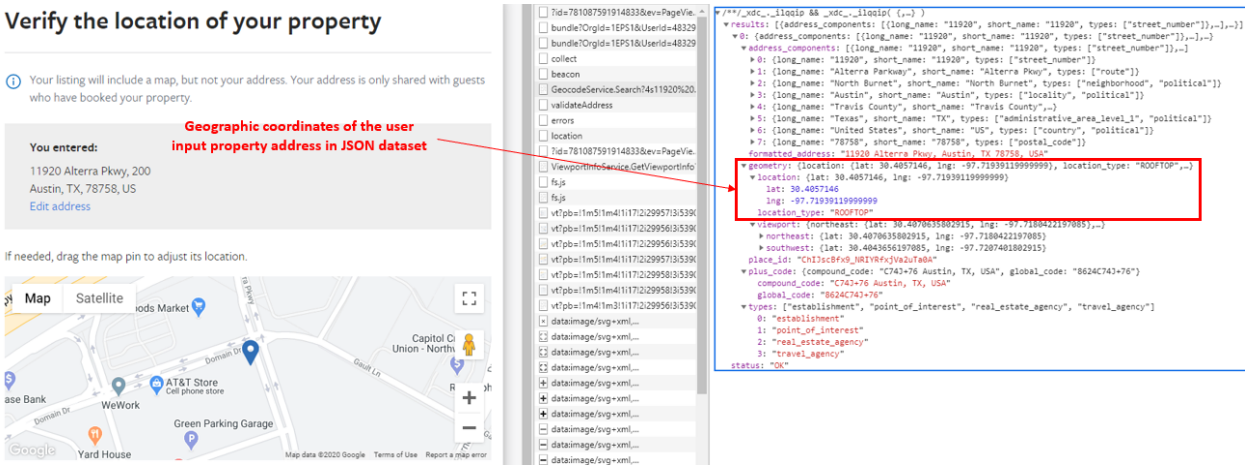
157. In order to store and transmit data for the APIs, the Vrbo platform employs JSON data to evoke web components and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially character strings (i.e., symbolic names) with no persistent address or pointer. For example, when the Google Maps API is embedded on a property listing, the Vrbo platform sets the location of the property with a simple HTTP request, employing JSON data to communicate the location information for the property with the Expedia platform.

158. On information and belief, the Vrbo platform's web components and corresponding symbolic names (e.g., JSON data) described above are located in a registry at Vrbo's server located at "odis.homeaway.com." *See* https://www.phocuswire.com/expedia-group-

vrbo-homeaway-consolidation.

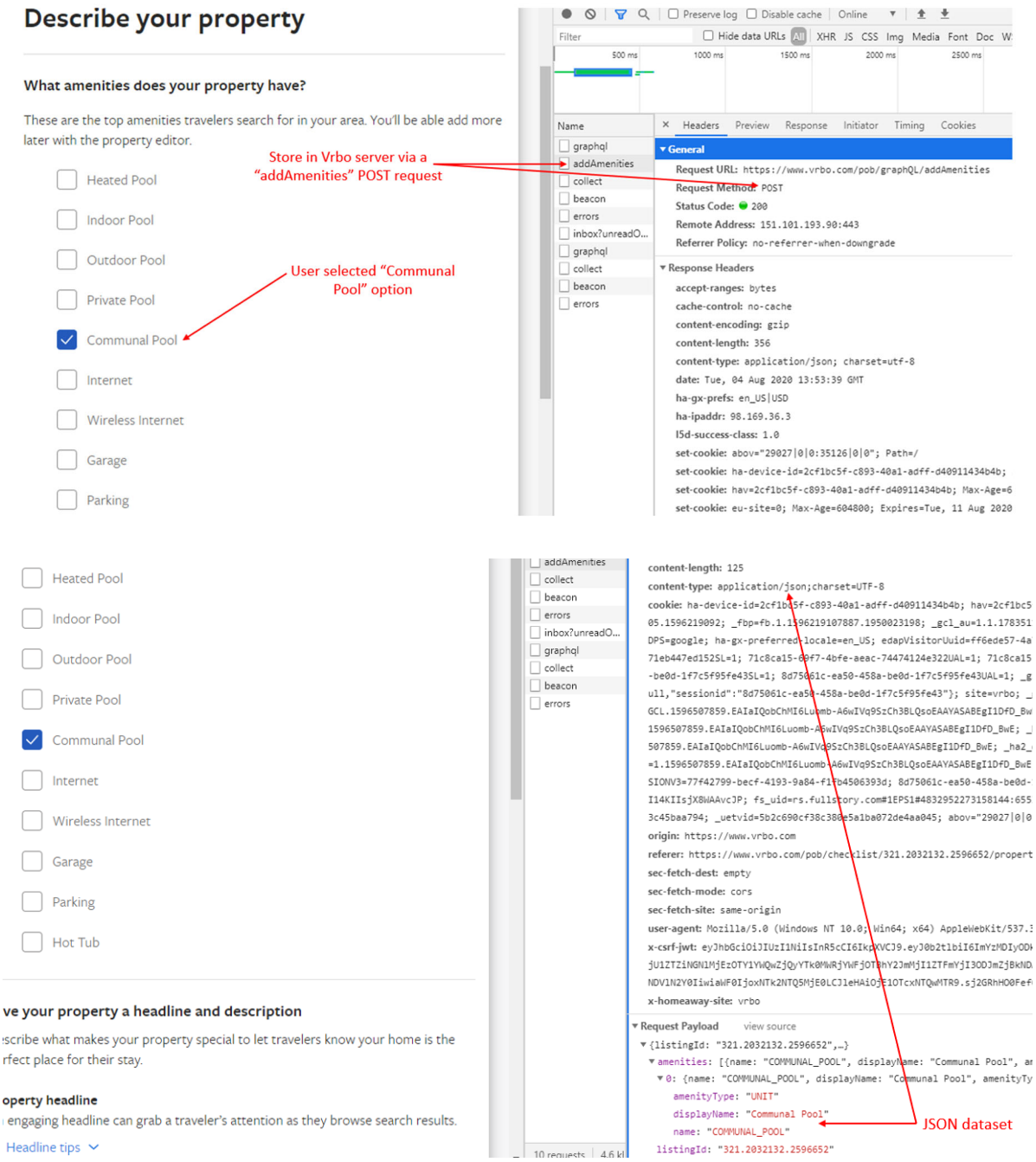
159. The registry for the Vrbo platform also includes addresses for the web services where the input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps web service when an address for a property is input into the API. The user-input property address is embedded in the request URL and is sent to the Google Maps API via an HTTP GET request for Geocoding service, which converts the address into geographic coordinates and places a marker on the map indicating the property's location. The Geocoding service in the Google Maps API responds to the input address with corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data, in which "formatted_address," "lat," and "lng" are the output symbolic names associated with the input property address, and latitude and longitude coordinates.





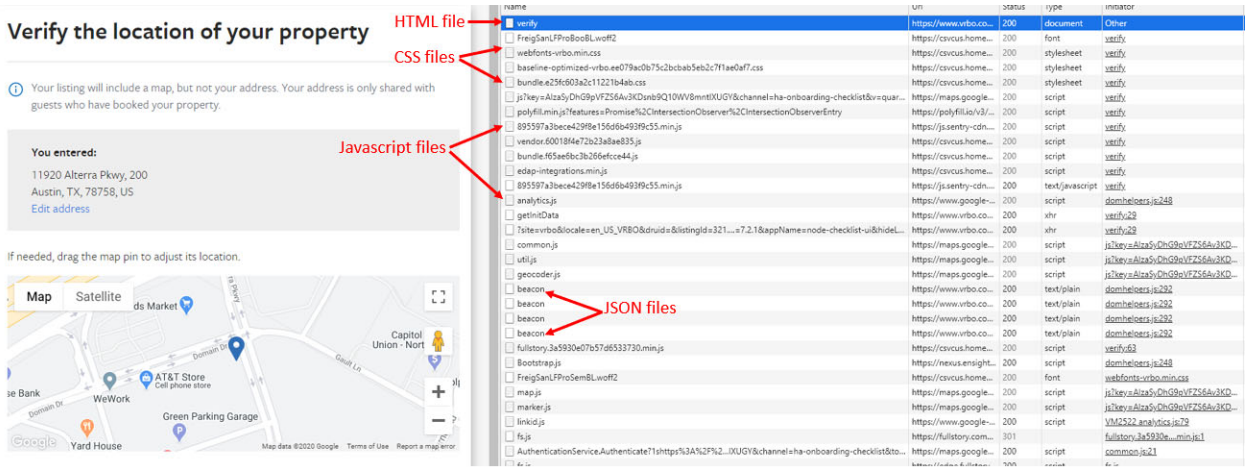
160. The defined UI objects described above are either selected by a user of an authoring tool or automatically selected by the Vrbo platform as preferred UI objects. For example, when the Google Maps API is integrated onto a property listing as described above, UI objects for web components such as the zoom-in and zoom-out buttons are automatically selected by the Vrbo platform as preferred UI objects.

161. When a UI object is so defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The symbolic name has an associated data format class type corresponding to a subclass of UI objects that support the data format type of the symbolic name, and has the preferred UI object. For example, as shown below, a user can configure the amenity object in a "Describe your property" web page by selecting a user selectable "Communal Pool" option. The "Communal Pool" option is then sent to and stored in the database in Vrbo's server in the format of JSON data via an "addAmenities" POST request. In particular, "name" is a symbolic name associated with the value "Communal_Pool" in the amenity object.

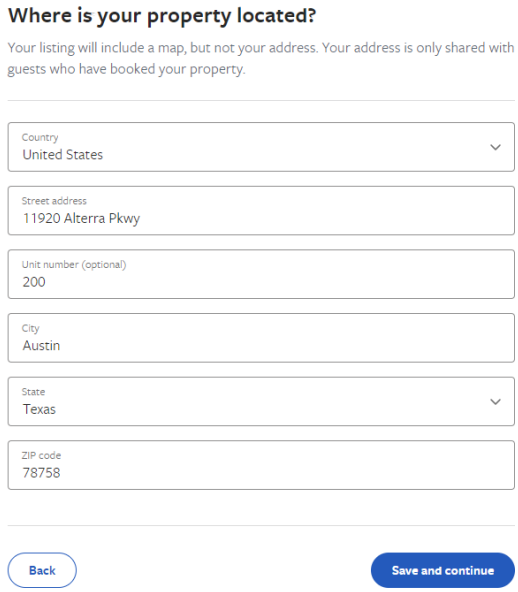


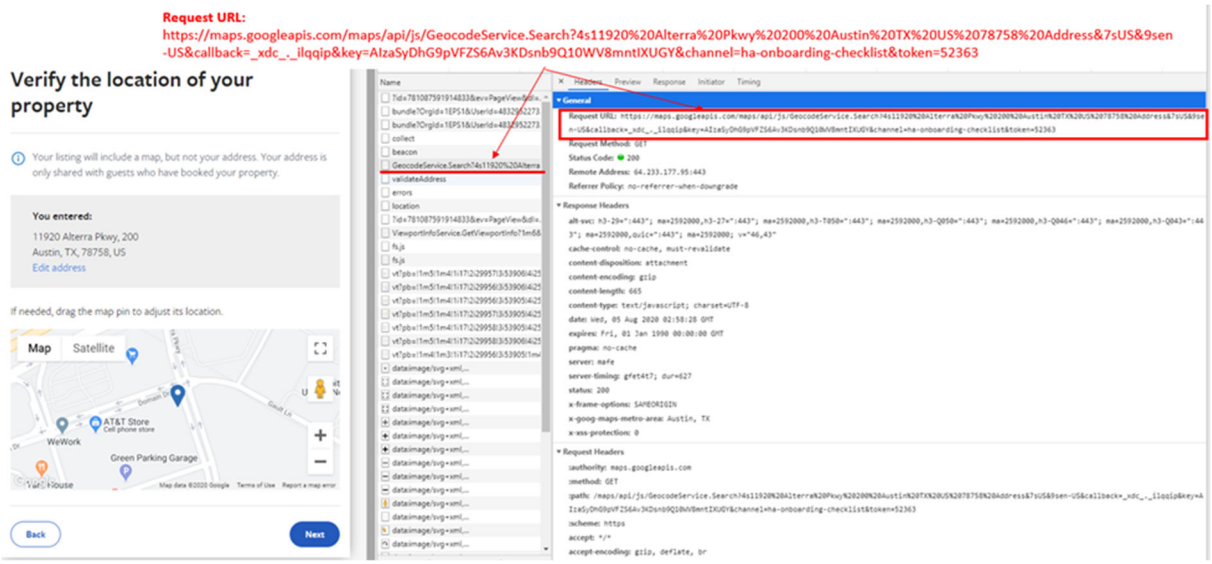
162. The Vrbo platform then produces a device-independent application that includes the JSON data, as well as standard HTML, CSS and Javascript code. The application is executed on a device together with a device-dependent player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. In the example

below, the Vrbo platform converts HTML, CSS, Javascript, JSON, and other files into an active "Verify the location of your property" web page.



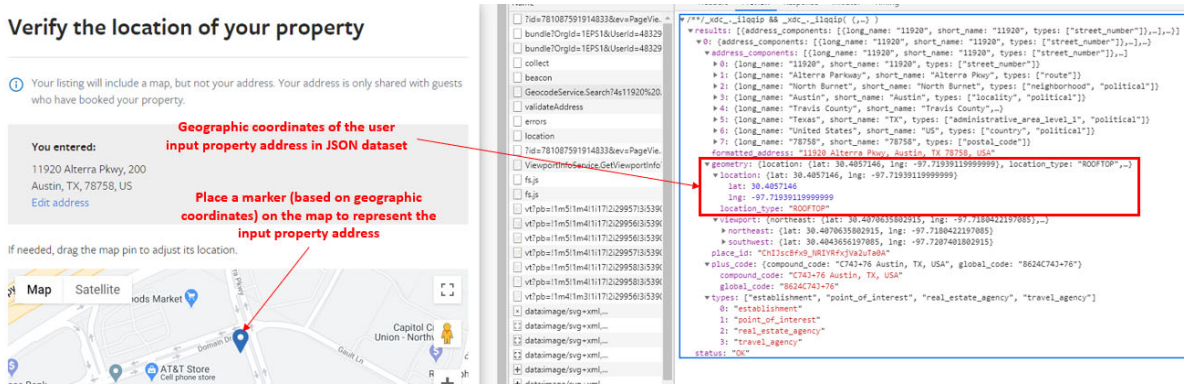
163. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name. For example, the Vrbo platform can accept an input value such as the typed address of the property from a user, as described above. When the user clicks on the "Save and continue" button, the input value is sent to the Geocoding service in the Google Maps API with an HTTP GET request. The address of the property is embedded in the request URL, with "4s" as a corresponding input symbolic name associated with the input value.





164. The input symbolic name is utilized by the Google Maps web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input address is received as described above, the Geocoding service generates and transmits corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data to the Vrbo platform. The JSON data includes "formatted_address," "lat,"

and "lng" that constitute symbolic names associated with the property address, and latitude and longitude coordinates. The geographic coordinates are then utilized to place a marker on the map indicating the address of property.



165. The presence of the above referenced features is demonstrated, by way of example, by testing the Accused Instrumentalities for investigative purposes on https://www.expediagroup.com/, https://www.expedia.com/, and https://www.vrbo.com/, and by reference to publicly available information, including https://www.expediagroup.com/, https://welcome.expediagroup.com/en, https://expediaconnectivity.com/, https://expediaconnectivity.com/apis/product-management/property-api/api-definition.html, https://expediaconnectivity.com/apis/product-management/property-api/video.html, https://www.youtube.com/watch?v=NSVzEoqYLxI, https://welcome.expediagroup.com/en/how-it-works, https://aws.amazon.com/solutions/case-studies/expedia/, https://www.vrbo.com/, https://help.vrbo.com/articles/How-do-I-list-my-property-HA, https://help.vrbo.com/category/List_Your_Property, https://www.homeaway.com/platform/developer-api, https://developers.google.com/maps/documentation/javascript/geocoding, and https://help.vrbo.com/category/Your_Listing.

166. On information and belief, Defendant has had knowledge of the '287 patent and its infringement thereof at least as early as July 28, 2019, and no later than August 31, 2020, when Plaintiff provided notices of the '287 patent and Defendant's infringement of the '287 patent. Furthermore, Defendant has been aware of the '287 patent and its infringement thereof since at least the filing of this complaint.

167. On information and belief, Defendant has contributed and is contributing to the infringement of the '287 patent because Defendant knows that the infringing aspects of its infringing products and services, including but not limited to the Accused Instrumentalities, are made for use in an infringement, and are not staple articles of commerce suitable for substantial non-infringing uses.

168. On information and belief, Defendant has induced and is inducing the infringement of the '287 patent, with knowledge of the '287 patent and that its acts, including without limitation using, offering to sell, selling within, and importing into the United States, the Accused Instrumentalities, would aid and abet and induce infringement by customers, clients, partners, developers, and end users of the foregoing.

169. In particular, Defendant's actions that aid and abet others such as customers, clients, partners, developers, and end users to infringe include advertising and distributing the Accused Instrumentalities, and providing instructional materials, training, and other services regarding the Accused Instrumentalities. Defendant actively encourages the adoption of the Accused Instrumentalities and provides support sites for the vast network of developers working with the Accused Instrumentalities, emphasizing the simple and user-friendly nature of the Accused Instrumentalities and explaining that "[a]s an Expedia Group Partner, you'll have instant access to Partner Central, our platform offering a host of innovative tools to help make day-to-day

management of your business quick and simple" (*see, e.g.,* https://welcome.expediagroup.com/en/about-us/list-on-expedia) and "[s]et your price, dates, rules, and more. We give you the tools to make sure you're in control… We're here for you, 24/7… A dedicated support team is ready around the clock to make sure that everything runs smoothly" (*see, e.g.,* https://www.vrbo.com/en-us/list?icid=IL___O_Text___top_nav_link_hp). On information and belief, Defendant has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant has had actual knowledge of the '287 patent and knowledge that their acts were inducing infringement of the '287 patent since at least the date Defendant received notice that its activities infringed the '287 patent.

170. Defendant's acts of infringement have caused damage to Plaintiff, and Plaintiff is entitled to recover damages from Defendant in an amount subject to proof at trial.

171. Defendant's infringement of Plaintiff's rights under the '287 patent will continue to damage Plaintiff's business, causing irreparable harm, for which there is no adequate remedy at law, unless enjoined by this Court.

172. On information and belief, Defendant has acted with disregard of Plaintiff's patent rights, without any reasonable basis for doing so, and has willfully infringed and does willfully infringe the '287 patent.

173. The foregoing is illustrative of Defendant's infringement of the '287 patent. Plaintiff reserves the right to identify additional claims and Accused Instrumentalities in accordance with the Court's local rules and applicable scheduling orders.

COUNT V – INFRINGEMENT OF U.S. PATENT NO. 9,928,044

174. Plaintiff incorporates by reference paragraphs 1 to 173 above as if fully set forth herein.

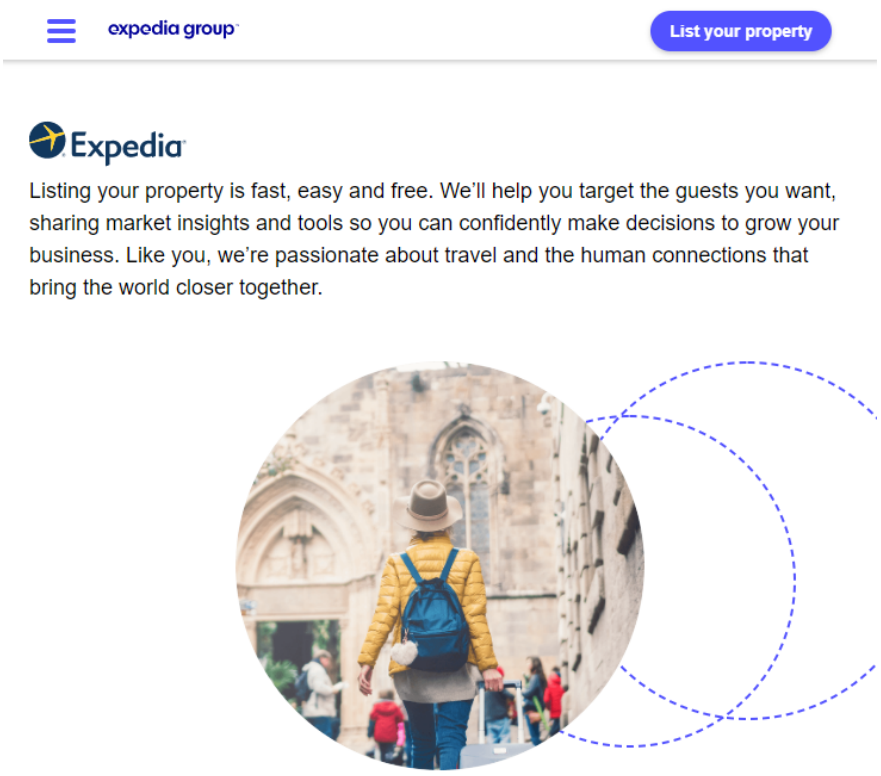
Express Mobile, Inc., Exhibit 2005
Page 2005 - 98
IPR2022-00597, Google LLC. v. Express Mobile, Inc.

175. On information and belief, Defendant has infringed and is infringing the '044 patent under 35 U.S.C. § 271, either literally and/or under the doctrine of equivalents, directly and/or indirectly.

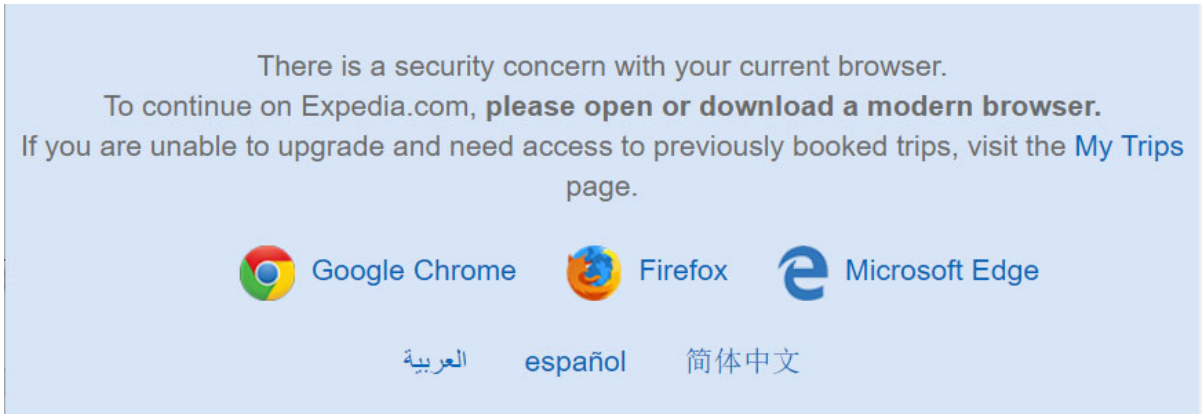
176. On information and belief, Defendant has infringed and is infringing the '044 patent by performing, without authority, one or more of the following acts: making, using, offering to sell, selling within, and importing into, the United States products and services that practice the claimed inventions of the '044 patent, including but not limited to the Expedia Group website builder platform for the Expedia Group products (the "Expedia platform"), and the Vrbo website builder platform, also known as the HomeAway platform, for the Vrbo product (the "Vrbo platform") (collectively the "Accused Instrumentalities").

The Expedia Platform:

177. The Expedia platform infringes at least claim 15 of the '044 patent through a combination of features that collectively practice each claimed limitation of claim 15. By way of example, the Expedia platform provides a platform to produce property listings for hotels and other lodgings to be displayed on a display of a device.



178. In particular, the Expedia platform provides a platform for displaying content on a display of a device having a player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. For example, the Expedia platform displays content through modern browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge.



https://www.expedia.com/upgradebrowser

179. The Expedia platform includes a non-volatile memory for storing symbolic names required for evoking one or more web components each related to a set of inputs and outputs of a web service obtainable over a network. In particular, the Expedia platform is supported by a database provided by Amazon Web Services (AWS), a cloud computing service for the Expedia platform.

Expedia Group Increases Agility and Resiliency by Going All In on AWS

2018

Expedia Group is all in on AWS, with plans to migrate 80 percent of its mission-critical apps from its on-premises data centers to the cloud in the next two to three years. By using AWS, Expedia Group has become more resilient. Expedia Group's developers have been able to innovate faster while saving the company millions of dollars. Expedia Group provides travel-booking services across its flagship site Expedia.com and about 200 other travel-booking sites around the world.

https://aws.amazon.com/solutions/case-studies/expedia/

In simple words AWS allows you to do the following things-

1. Running web and application servers in the cloud to host dynamic websites.
2. Securely store all your files on the cloud so you can access them from anywhere.
3. Using managed databases like MySQL, PostgreSQL, Oracle or SQL Server to store information.
4. Deliver static and dynamic files quickly around the world using a Content Delivery Network (CDN).
5. Send bulk email to your customers.

https://blog.usejournal.com/what-is-aws-and-what-can-you-do-with-it-395b585b03c

180. Databases conventionally use non-volatile computer memories to store data. The computer memory in the Expedia platform thus stores data for the property listings, including symbolic names for evoking inputs and outputs of web services. Web services available on the Expedia platform include various Application Programming Interfaces (APIs) that may be integrated on the property listings.

Developers

Integrate with the Expedia Marketplace with our advanced connectivity technology. You'll find everything you need to connect via a full suite of hospitality APIs. Get started by reviewing our documentation and samples, and get your test account.

- Proven APIs that automate the management of property availability, rates, and reservations
- Powerful feature solutions that provide additional value by automating the process of managing property descriptions and images

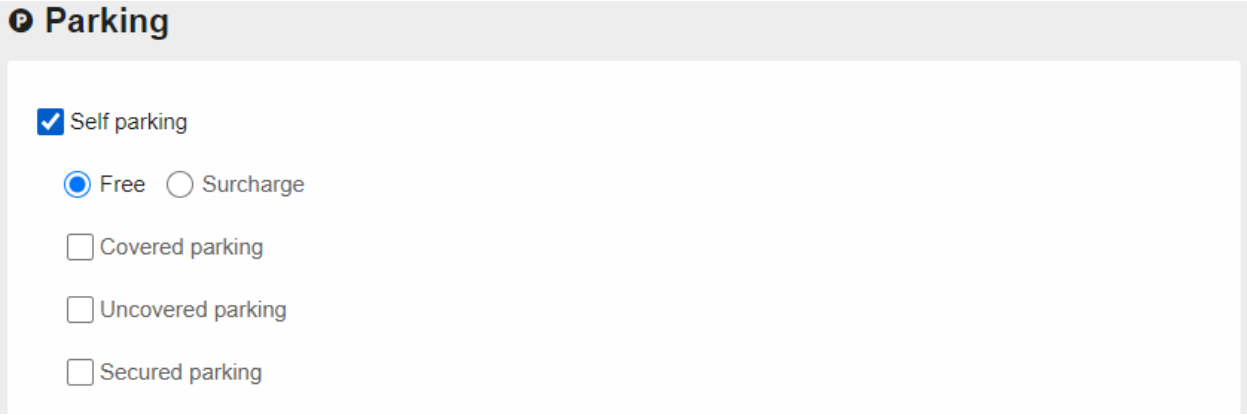
View Connectivity APIs →

https://expediaconnectivity.com/

181. In order to store and transmit data for the APIs, the Expedia platform employs JSON data to evoke web components and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially symbolic names constituting character strings with no persistent address or pointer.

182. Each symbolic name has an associated data format class type corresponding to a subclass of UI objects that support the data format type of the symbolic name, and has the preferred UI object. For example, as shown below, when a user selects the "Self parking" amenity, the radio

button “Free” is the selected automatically as the preferred UI object. In addition, the request payload is in the format of JSON format, in which the symbolic name “amenityId” is associated with value “selfParking:chargeHideRadioGroup:free.”

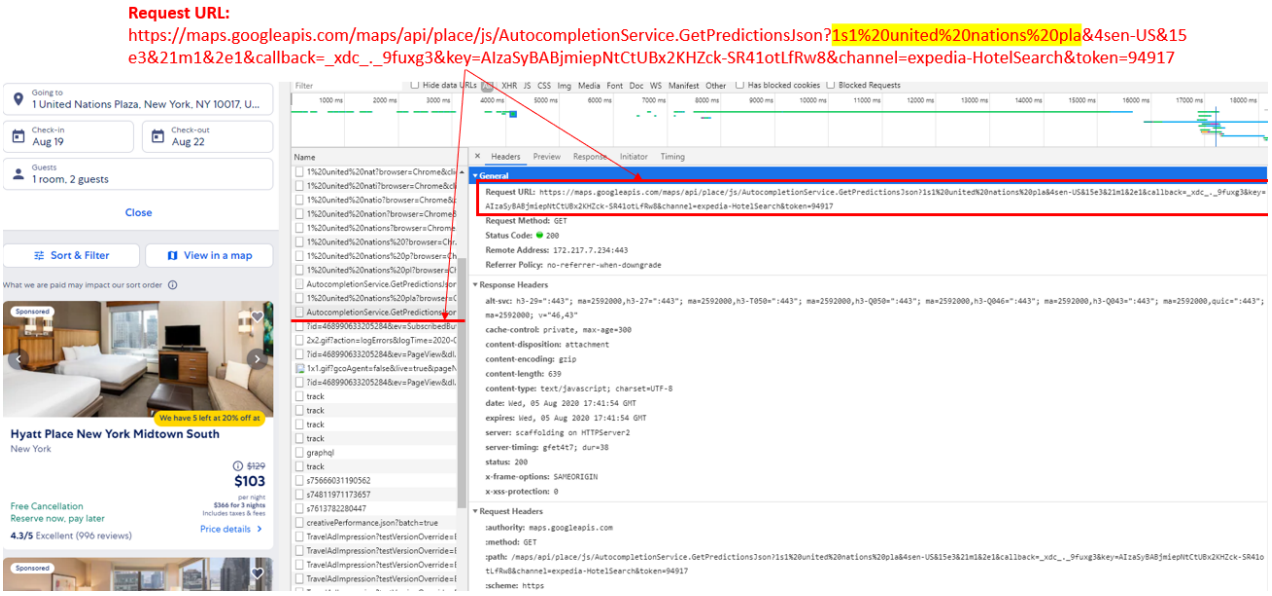


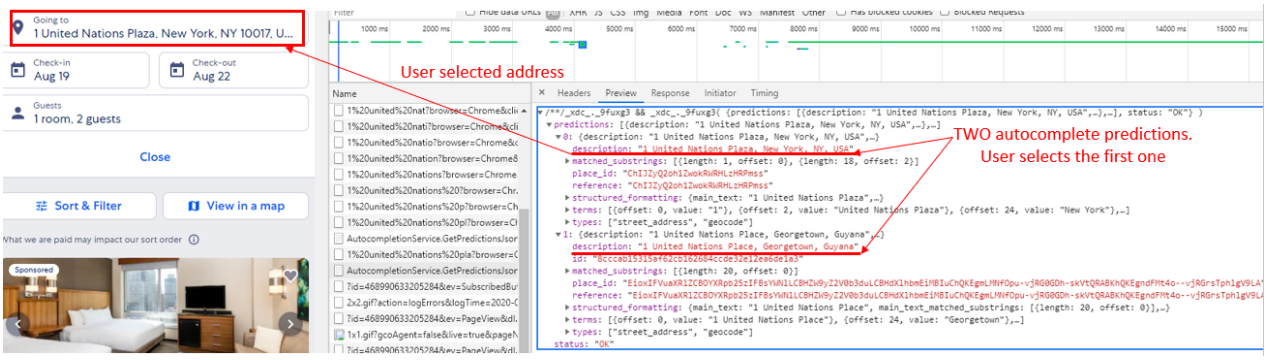

```
▾ Query String Parameters    view source    view decoded
  htid: 56973277

▾ Request Payload    view source
  ▾ {moduleId: "parking", hotelId: 56973277, pageName: "EPC.modulePage.parking",…}
    ▾ amenities: {56973277: [{amenityId: "selfParking:chargeHideRadioGroup:surcharge", value: null, exist: false},…]}
      ▾ 56973277: [{amenityId: "selfParking:chargeHideRadioGroup:surcharge", value: null, exist: false},…]
        ▸ 0: {amenityId: "selfParking:chargeHideRadioGroup:surcharge", value: null, exist: false}
        ▸ 1: {amenityId: "selfParking:chargeHideRadioGroup:surcharge:amount", value: null, exist: false}
        ▸ 2: {amenityId: "selfParking:chargeHideRadioGroup:surcharge:durationUnit", value: null, exist: false}
        ▾ 3: {amenityId: "selfParking:chargeHideRadioGroup:free", value: null, exist: true}
            amenityId: "selfParking:chargeHideRadioGroup:free"
            exist: true
            value: null
      hotelId: 56973277
      moduleId: "parking"
      onlyNegativeForModule: false
      pageName: "EPC.modulePage.parking"
      rooms: null
```


183. The computer memory where data for the property listings are stored also includes addresses for the web services where the input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps web service when a user inputs a partial address for a property to initiate an autocompletion service. In particular, the user-input address “1 united nations pla” (a partial address for the “Millennium Hilton New York One UN Plaza”) is embedded

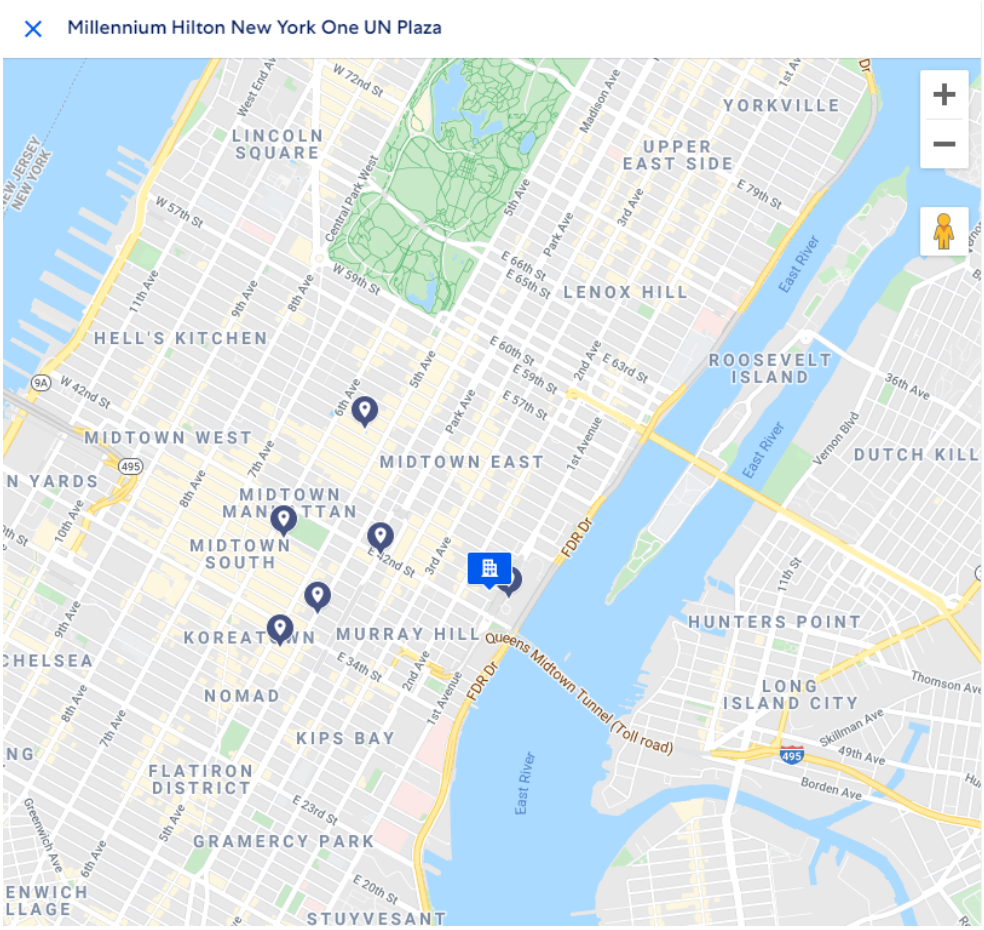
in the request URL and sent to the Google Maps API via an HTTP GET request to initiate an autocompletion service and retrieve predicted locations based on the partial address. The autocompletion service provided by the Google Maps API responds with autocomplete predictions (e.g., "1 United Nations Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with the predicted address and identification of the address.





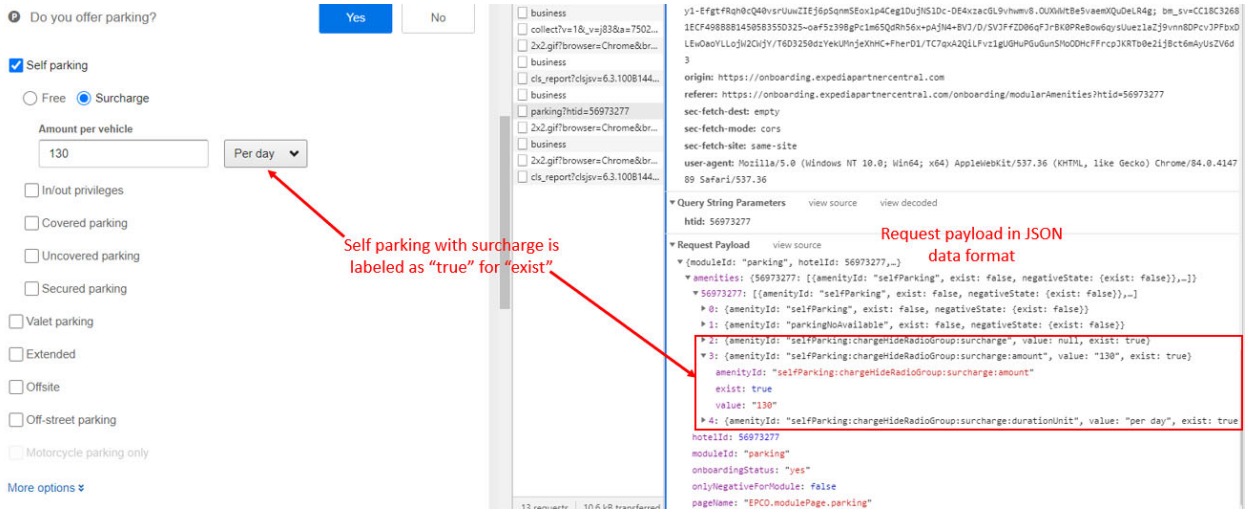
184. The Expedia platform defines a UI object for presentation on the display, where the UI object corresponds to a web component included in the computer memory, and the web component is selected from a group consisting of an input or output for an API (i.e., a web service).

By way of example, when an interactive map is embedded on the property listing to integrate the Google Maps API, UI objects for input and output web components such as a map image, zoom-in and zoom-out buttons, and pins for nearby attractions and points of interest, are defined for the Google Maps web service. Each of these UI objects is automatically selected by the Expedia platform as a preferred UI object.



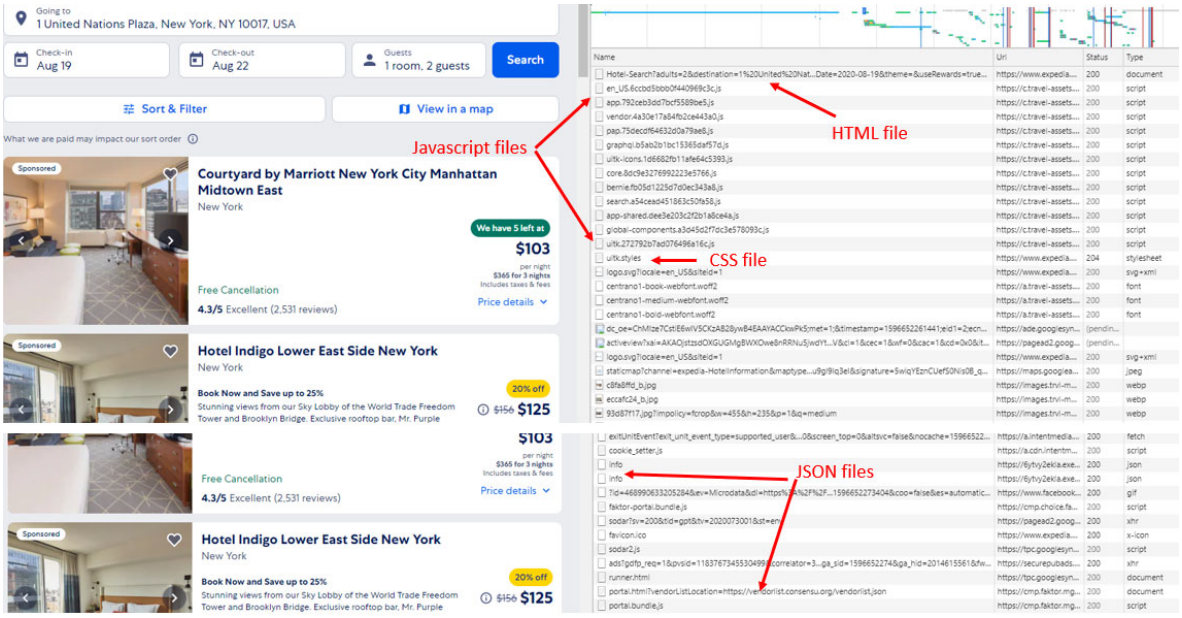
185. When a UI object is so defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The symbolic name is only available to UI objects that support the defined data format associated with that symbolic name. As shown in the example below, the "amenities" selection only contains the symbolic name "selfParking" associated with the "Self parking" checkbox. When

the “Surcharge” radio button is selected, the symbolic name “Exist” for each “amenityId” that contains “selfParking:chargeHidRadioGroup” is also associated with the value “true” accordingly. Symbolic names associated with other UI objects such as “In/Out privileges” and “Valet parking” checkboxes are not included in the request payload.

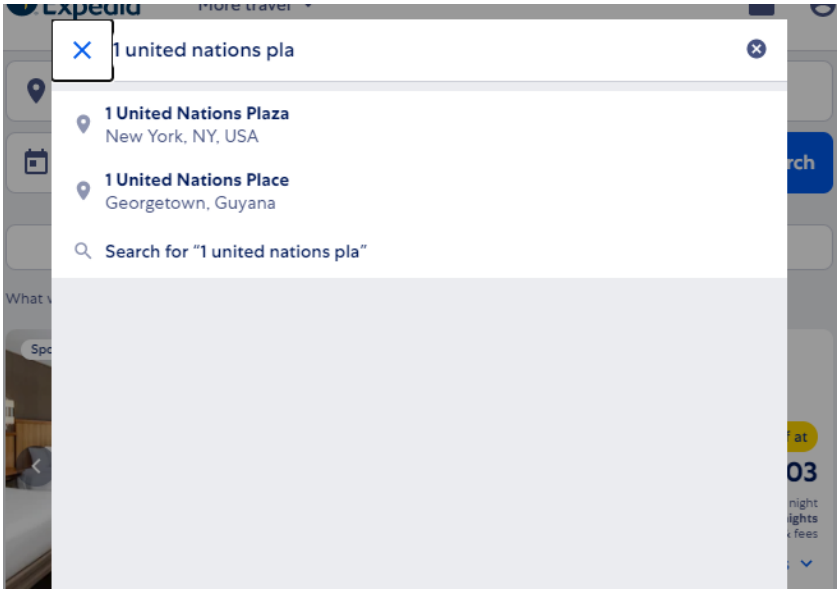


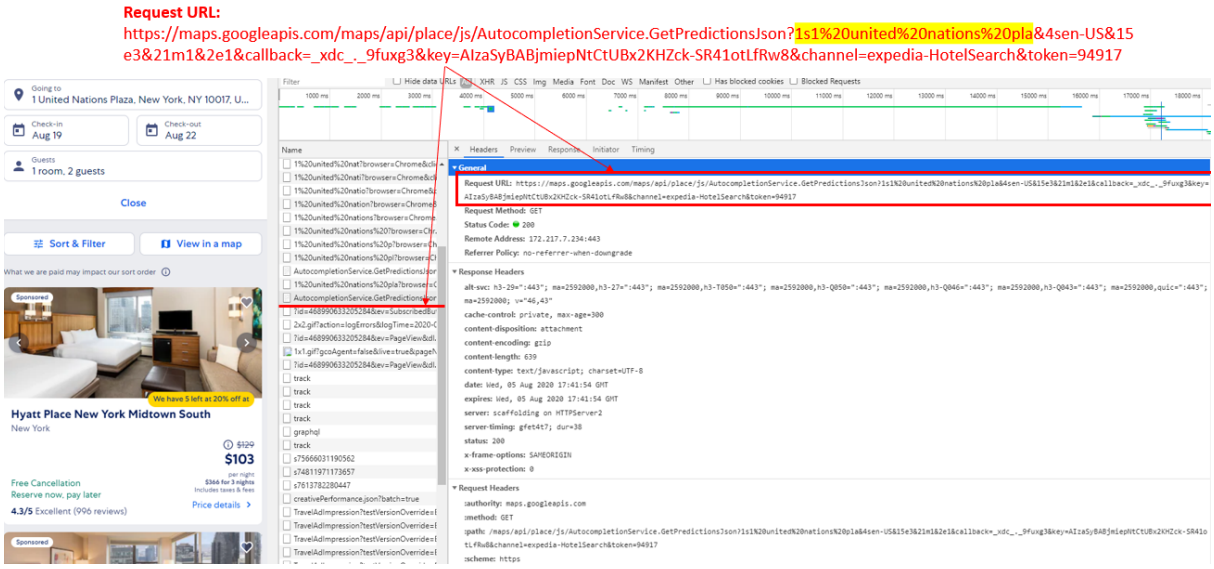
186. The Expedia platform stores information representative of the defined UI object and related settings (e.g., JSON data, along with standard HTML, CSS, and Javascript code) in the AWS database described above.

187. To generate the property listing, the Expedia platform retrieves the information for the UI objects stored in the AWS database, and builds an application consisting of one or more web pages views from at least a portion of the database using the player. The player (e.g., a browser engine, operating system or application) utilizes the data stored in the database to generate for the display at least a portion of a web page. In the example below, the Expedia platform converts HTML, CSS, Javascript, JSON, and other files into an active property listing.



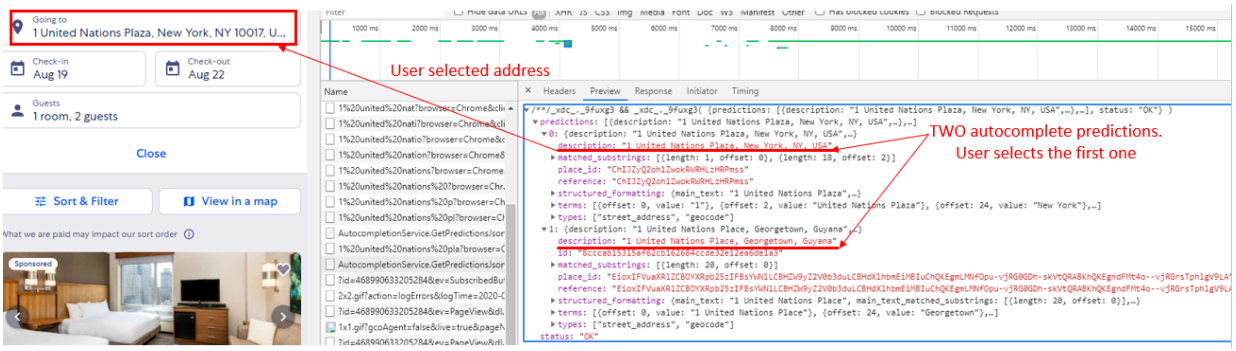
188. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name for the output. By way of example, the Expedia platform's Google Maps API can accept an input value such as a partial address from a user, as described above. The input partial address "1 united nations pla" is sent to the autocompletion service in the Google Maps API with an HTTP GET request. The address of the property is embedded in the request URL, with "1s" as a corresponding input symbolic name associated with the input value.

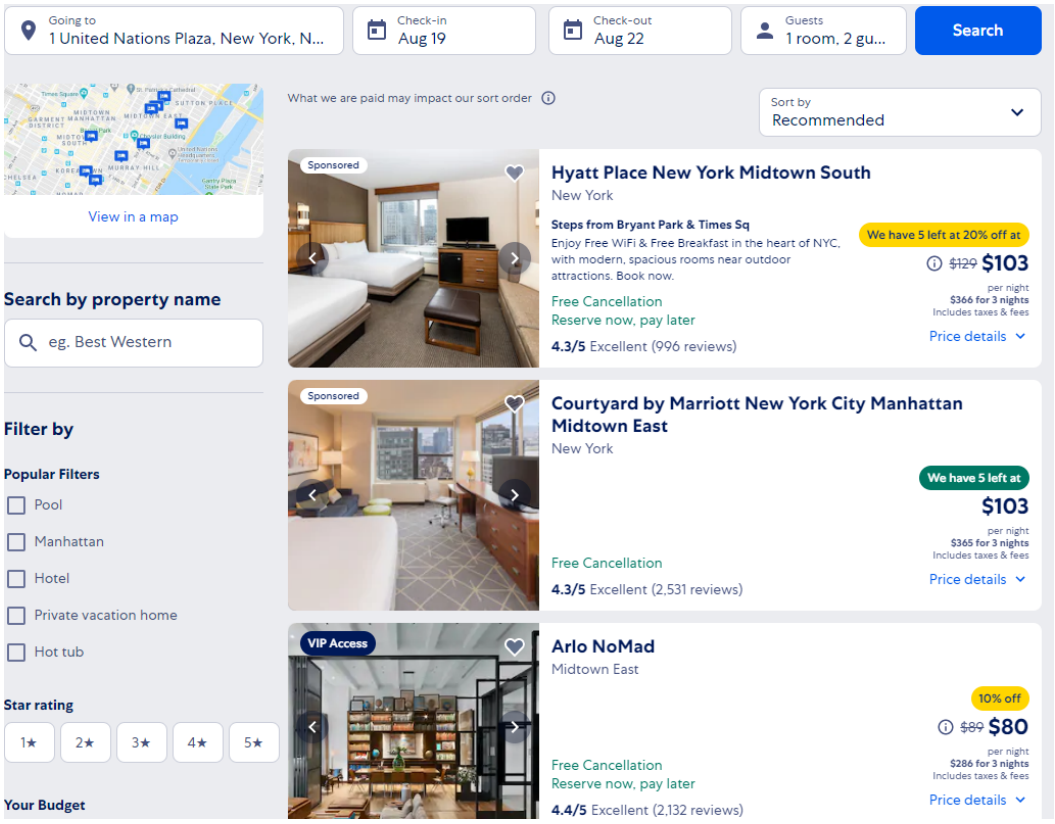




189. The input symbolic name is utilized by the Google Maps web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input partial address is received as described above, the autocompletion service generates and transmits corresponding autocomplete predictions (e.g., "1 United Nations Plaza, New York, NY, USA" and "1 United Nations Place, Georgetown, Guyana") in the format of JSON data, in which "description" and "place_id" are output symbolic names associated with

the predicted address and identification of the address. From these autocomplete predictiosn, the user can select the complete address and request the server to display other properties located around that address.

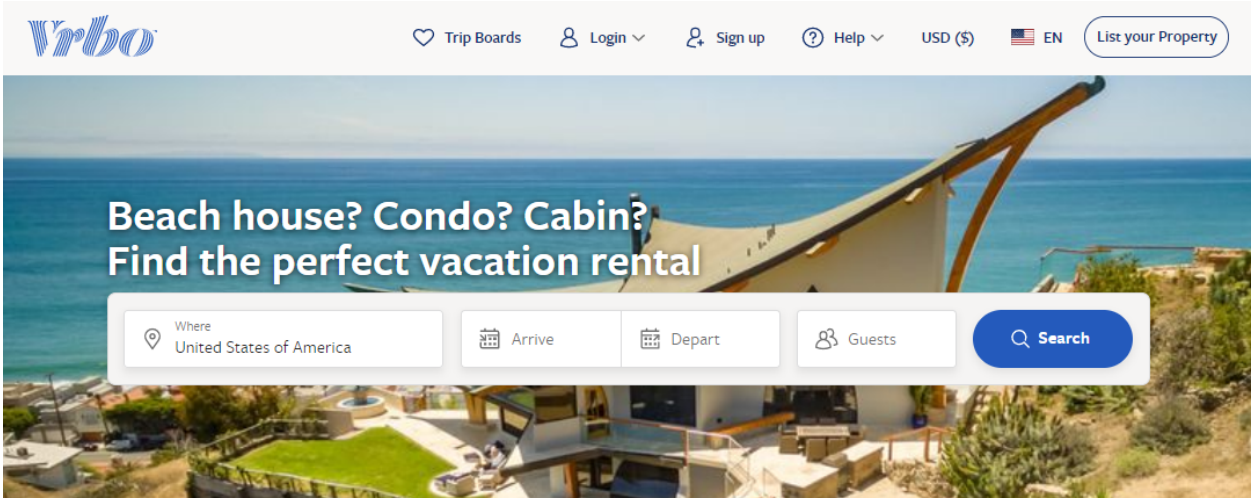




<u>The Vrbo Platform</u>:

190. The Vrbo platform infringes at least claim 15 of the '044 patent through a combination of features that collectively practice each claimed limitation of claim 15. By way of

example, the Vrbo platform provides a platform to produce property listings for vacation rentals to be displayed on a display of a device.



191. In particular, the Vrbo platform provides a platform for displaying content on a display of a device having a player, such as a browser engine for a specific browser, or an operating system or application for a particular kind of device. *See, e.g., Shopify Inc. v. Express Mobile, Inc.*, Case No. 1:19-cv-00439-RGA, D. Del., D.I. 137. For example, the Vrbo platform displays content through modern browsers such as Google Chrome, Mozilla Firefox, Microsoft Edge, Internet Explorer, iOS Safari, and Android Chrome.

Trip Boards Login

FILTERS + Search Help TRAVELER CHAT 1

Find Help by Category

- Find a Property
- Book a Property
- Your Stay
- Your Review
- Getting Started
- Your Safety
- Your Account
- Your Listing
- Manage Reservations

Help Home /Your Account /Sign In

What web browsers are supported by the site?

We strive to provide our customers with modern, fast, safe and secure web browsing experience.

In order to provide you with a great user experience, we officially support the following browsers:

- Internet Explorer / Edge 16 or higher
- Firefox 59 or higher
- Chrome 64 or higher
- Safari 10 or higher

On mobile devices, we officially support the following:

- iOS Safari 9 or higher (iPhone and iPad)
- Android Chrome 65 or higher (Android Phones and Tablets)

While our sites may continue to function on other devices and in other browsers than those listed, occasionally you may see a warning if you are using a browser or device with known issues. While we do our best to support browsers that are most commonly in use, it is not possible to support all, and therefore we recommend upgrading to one of the above-mentioned browsers.

To view instructions on how to upgrade your internet browser, visit http://browsehappy.com/.

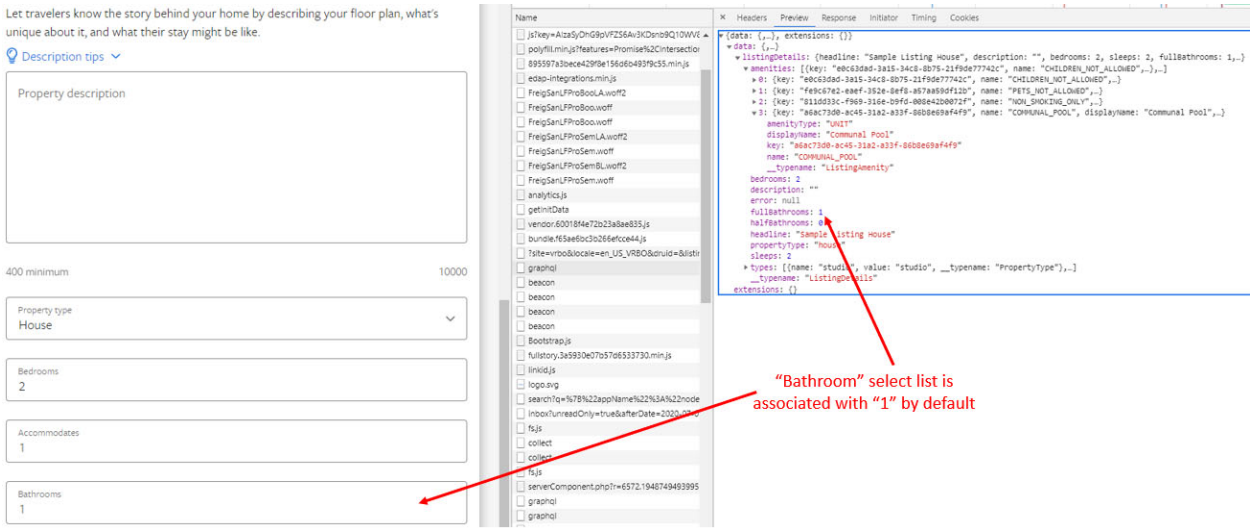
https://help.vrbo.com/articles/What-web-browsers-are-supported-by-the-site

192. The Vrbo platform includes a non-volatile memory for storing symbolic names required for evoking one or more web components each related to a set of inputs and outputs of a web service obtainable over a network. On information and belief, the Vrbo platform is supported by a database at Vrbo's server located at "odis.homeaway.com." *See* https://www.phocuswire.com/expedia-group-vrbo-homeaway-consolidation. Databases conventionally use non-volatile computer memories to store data. The computer memory in the Vrbo platform thus stores data for the property listings, including symbolic names for evoking inputs and outputs of web services. Web services available on the Vrbo platform include various Application Programming Interfaces (APIs) that may be integrated on the property listings.

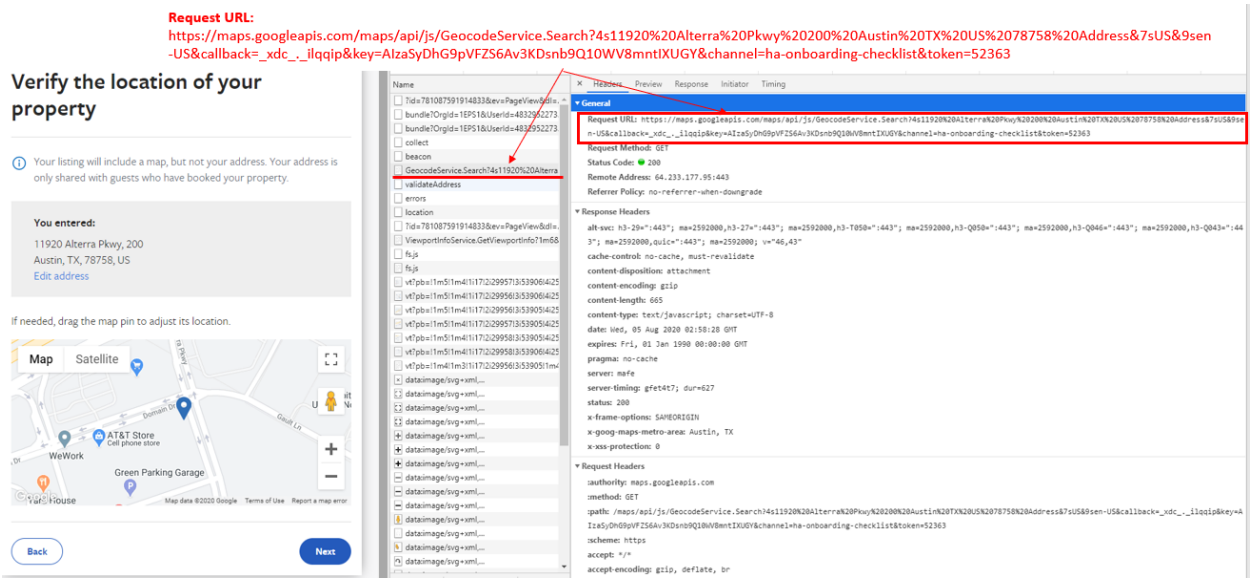
https://www.homeaway.com/platform/developer-api

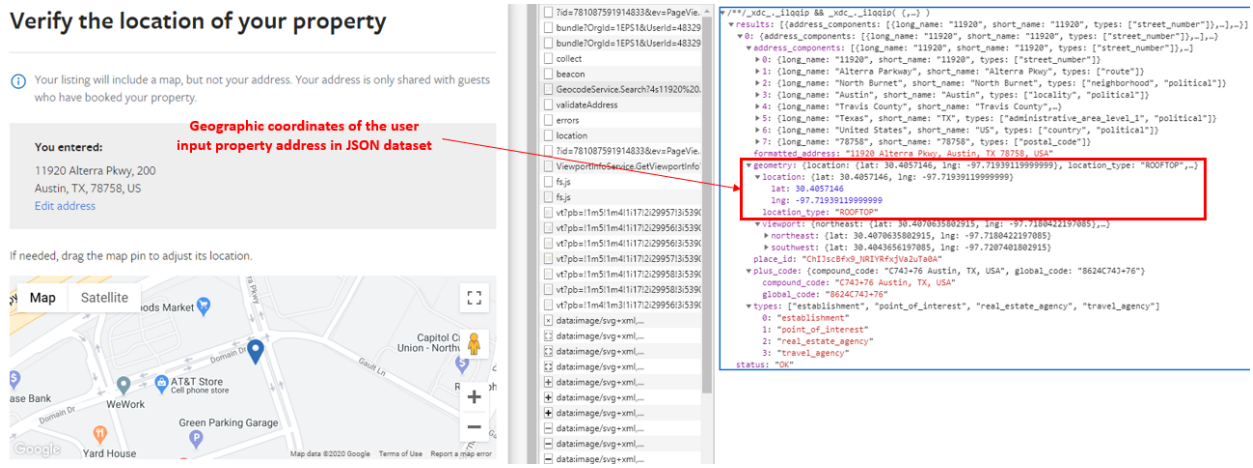
193. In order to store and transmit data for the APIs, the Vrbo platform employs JSON data to evoke web components and to communicate inputs and outputs for the APIs. JSON data comprise key/value pairs that are essentially symbolic names constituting character strings with no persistent address or pointer.

194. Each symbolic name has an associated data format class type corresponding to a subclass of UI objects that support the data format type of the symbolic name, and has the preferred UI object. As shown in the example below, the "Bathrooms" select list is associated with "1" by default. In the corresponding JSON data, the symbolic name "fullBathrooms" is associated with the value "1" which is set by the "Bathrooms" select list, and the symbolic name "halfBathrooms" is associated with the value "0."

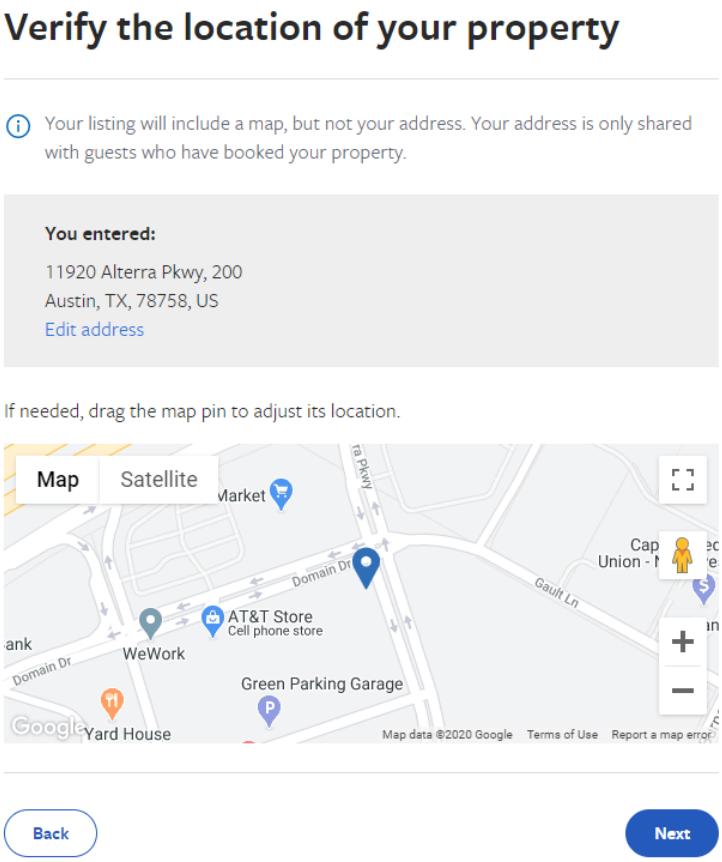


195. The computer memory where data for the property listings are stored also includes addresses for the web services where the input and output JSON data (i.e., symbolic names) can be sent to and received from. For example, the screenshot below shows a request URL including an address of the Google Maps web service when a user inputs a property address into the API. The user-input property address is embedded in the request URL and is sent to the Google Maps API via an HTTP GET request for Geocoding service, which converts the address into geographic coordinates and places a marker on the map indicating the property's location. The Geocoding service in the Google Maps API thus responds to the input with corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data, in which "formatted_address," "lat," and "lng" are output symbolic names generated in response to the user-input property address.

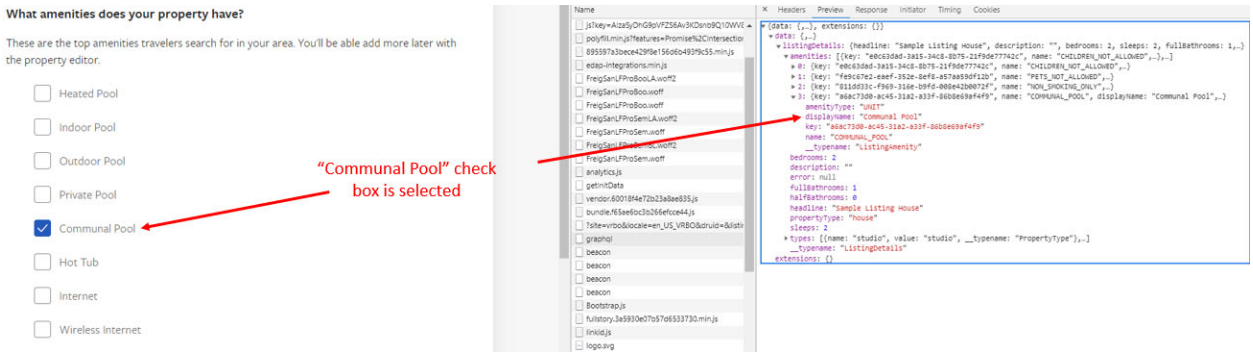




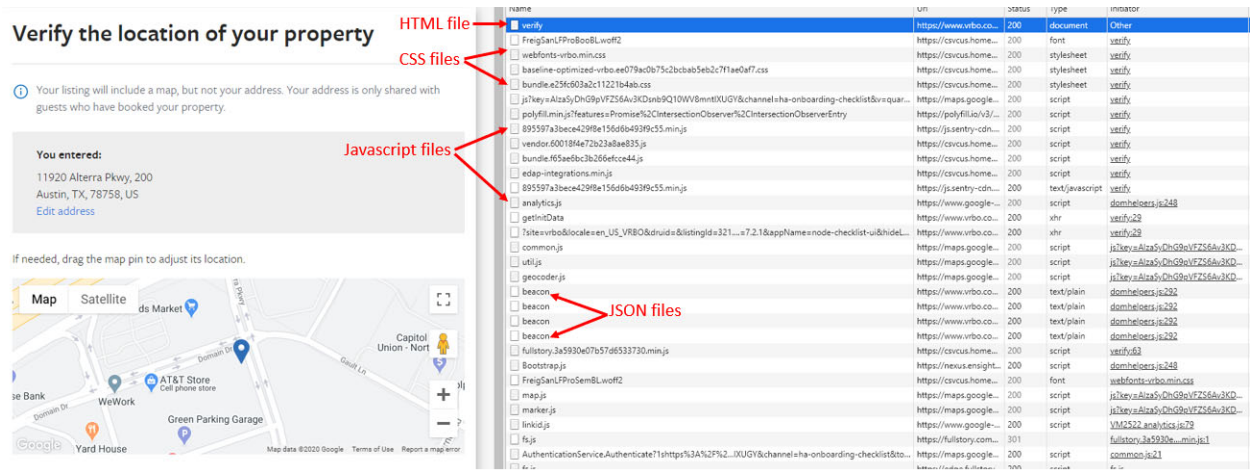
196. The Vrbo platform defines a UI object for presentation on the display, where the UI object corresponds to a web component included in the computer memory, and the web component is selected from a group consisting of an input or output for an API (i.e., a web service). By way of example, when an interactive map is embedded on the property listing by integrating the Google Maps API, UI objects for input and output web components such as a map image, zoom-in and zoom-out buttons, and pins for nearby attractions and points of interest, are defined for the Google Map web service. Each of these UI objects is automatically selected by the Vrbo platform as a preferred UI object.



197. When a UI object is so defined, a symbolic name (e.g., JSON data) from the web component corresponding to the defined UI object is selected and associated with the defined UI object. The symbolic name is only available to UI objects that support the defined data format associated with that symbolic name. For example, when a user selects the "Communal Pool" check box, associated symbolic names such as "amenityType," "displayName," "key," and "name" are included in the JSON dataset. In contrast, symbolic names associated with other UI objects such as the "Heated Pool," "Hot Tub," and "Internet" checkboxes, are not included in the JSON dataset.

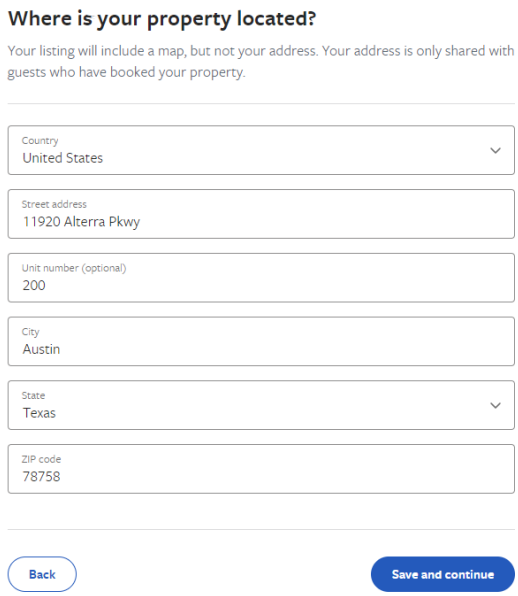


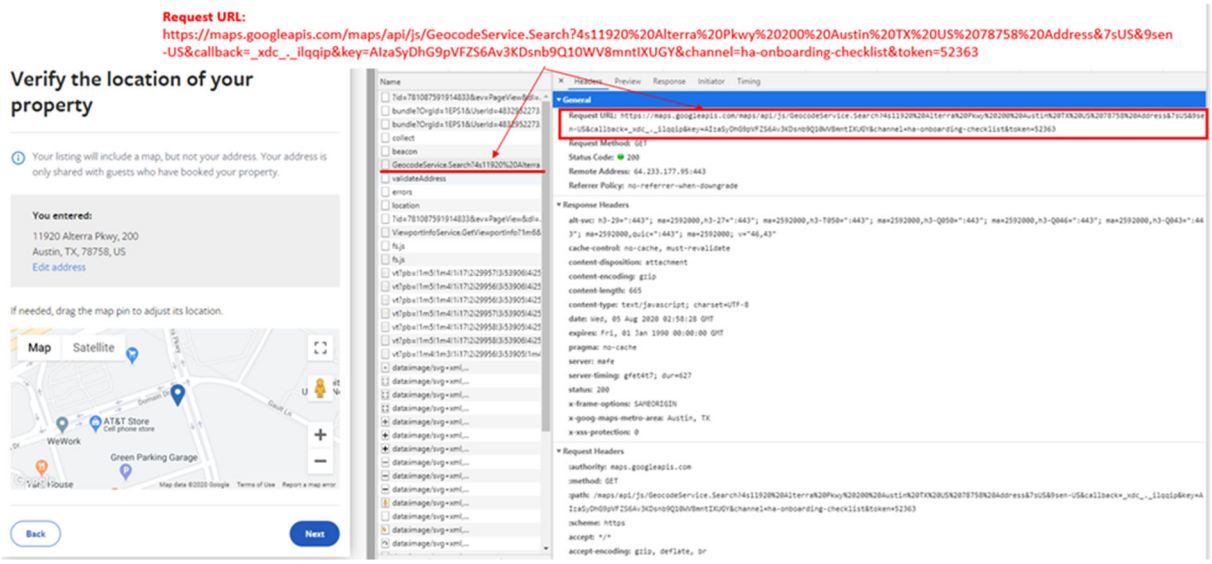
198. The Vrbo platform stores information representative of the defined UI object and related settings (e.g., JSON data, along with standard HTML, CSS, and Javascript code) in the Vrbo server's database described above. To generate the property listing, the Vrbo platform retrieves the information for the UI objects stored in the Vrbo database, and builds an application consisting of one or more web pages views from at least a portion of the database using the player. The player (e.g., a browser engine or operating system) utilizes the data stored in the database to generate for the display at least a portion of a web page. In the example below, the Vrbo platform converts HTML, CSS, Javascript, JSON, and other files into an active "Verify the location of your property" web page.



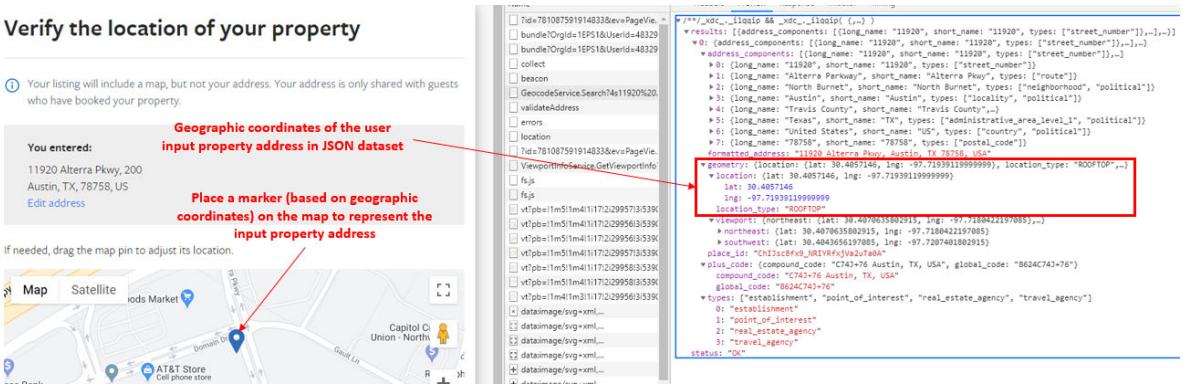
199. When the application and player are executed on the device, an input value for the web service can be provided by a user. The device then provides the input value and a

corresponding input symbolic name to the web service, which in turn generates an output value and a corresponding symbolic name. For example, the Vrbo platform can accept an input value such as the typed address of the property from a user, as described above. When the user clicks on the "Save and continue" button, the input value is sent to the Geocoding service in the Google Maps API with an HTTP GET request. The address of the property is embedded in the request URL, with "4s" as a corresponding input symbolic name that is associated with the input value.





200. The input symbolic name is utilized by the Google Maps web service to generate an output value with an associated output symbolic name (e.g., JSON data for the output). The player then provides instructions to the display of the device to present the output value in the API. For example, after the input address is received as described above, the Geocoding service generates and transmits corresponding geographic coordinates (e.g., latitude and longitude) in the format of JSON data to the Vrbo platform. The JSON data includes "formatted_address," "lat," and "lng" and represent symbolic names associated with the property address, and latitude and longitude coordinates. The geographic coordinates are then utilized to place a marker on the map indicating the address of the property.



201. The presence of the above referenced features is demonstrated, by way of example, by testing the Accused Instrumentalities for investigative purposes on https://www.expediagroup.com/, https://www.expedia.com/, and https://www.vrbo.com/, and by reference to publicly available information, including https://www.expediagroup.com/, https://welcome.expediagroup.com/en, https://expediaconnectivity.com/, https://expediaconnectivity.com/apis/product-management/property-api/api-definition.html, https://expediaconnectivity.com/apis/product-management/property-api/video.html, https://www.youtube.com/watch?v=NSVzEoqYLxI, https://welcome.expediagroup.com/en/how-it-works, https://aws.amazon.com/solutions/case-studies/expedia/, https://www.vrbo.com/,

https://help.vrbo.com/articles/How-do-I-list-my-property-HA, https://help.vrbo.com/category/List_Your_Property, https://www.homeaway.com/platform/developer-api, https://developers.google.com/maps/documentation/javascript/geocoding, and https://help.vrbo.com/category/Your_Listing.

202. On information and belief, Defendant has had knowledge of the '044 patent and its infringement thereof at least as early as July 28, 2019, and no later than August 31, 2020, when Plaintiff provided notices of the '044 patent and Defendant's infringement of the '044 patent. Furthermore, Defendant has been aware of the '044 patent and its infringement thereof since at least the filing of this complaint.

203. On information and belief, Defendant has contributed and is contributing to the infringement of the '044 patent because Defendant knows that the infringing aspects of its infringing products and services, including but not limited to the Accused Instrumentalities, are made for use in an infringement, and are not staple articles of commerce suitable for substantial non-infringing uses.

204. On information and belief, Defendant has induced and is inducing the infringement of the '044 patent, with knowledge of the '044 patent and that its acts, including without limitation using, offering to sell, selling within, and importing into the United States, the Accused Instrumentalities, would aid and abet and induce infringement by customers, clients, partners, developers, and end users of the foregoing.

205. In particular, Defendant's actions that aid and abet others such as customers, clients, partners, developers, and end users to infringe include advertising and distributing the Accused Instrumentalities, and providing instructional materials, training, and other services

regarding the Accused Instrumentalities. Defendant actively encourages the adoption of the Accused Instrumentalities and provides support sites for the vast network of developers working with the Accused Instrumentalities, emphasizing the simple and user-friendly nature of the Accused Instrumentalities and explaining that "[a]s an Expedia Group Partner, you'll have instant access to Partner Central, our platform offering a host of innovative tools to help make day-to-day management of your business quick and simple" (*see, e.g.,* https://welcome.expediagroup.com/en/about-us/list-on-expedia) and "[s]et your price, dates, rules, and more. We give you the tools to make sure you're in control… We're here for you, 24/7… A dedicated support team is ready around the clock to make sure that everything runs smoothly" (*see, e.g.,* https://www.vrbo.com/en-us/list?icid=IL___O_Text___top_nav_link_hp). On information and belief, Defendant has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant has had actual knowledge of the '044 patent and knowledge that their acts were inducing infringement of the '044 patent since at least the date Defendant received notice that its activities infringed the '044 patent.

206. Defendant's acts of infringement have caused damage to Plaintiff, and Plaintiff is entitled to recover damages from Defendant in an amount subject to proof at trial.

207. Defendant's infringement of Plaintiff's rights under the '044 patent will continue to damage Plaintiff's business, causing irreparable harm, for which there is no adequate remedy at law, unless enjoined by this Court.

208. On information and belief, Defendant has acted with disregard of Plaintiff's patent rights, without any reasonable basis for doing so, and has willfully infringed and does willfully infringe the '044 patent.

209. The foregoing is illustrative of Defendant's infringement of the '044 patent.

Plaintiff reserves the right to identify additional claims and Accused Instrumentalities in accordance with the Court's local rules and applicable scheduling orders.

PRAYER FOR RELIEF

210. WHEREFORE, Plaintiff prays for the following relief:

A. A judgment that U.S. Patent Nos. 6,546,397, 7,594,168, 9,063,755, 9,471,287, and 9,928,044 are valid and enforceable;

B. A judgment that Defendant has directly infringed, contributorily infringed, and/or induced the infringement of U.S. Patent Nos. 6,546,397, 7,594,168, 9,063,755, 9,471,287, and 9,928,044;

C. A judgment that Defendant's infringement of U.S. Patent Nos. 6,546,397, 7,594,168, 9,063,755, 9,471,287, and 9,928,044 has been willful;

D. An award of attorneys' fees incurred in prosecuting this action, on the basis that this is an exceptional case;

E. A judgment and order requiring Defendant to pay Plaintiff damages under 35 U.S.C. § 284, including supplemental damages for any continuing post-verdict infringement up until entry of the final judgment, with an accounting, as needed, and treble damages for willful infringement as provided by 35 U.S.C. § 284;

F. A judgment and order requiring Defendant to pay Plaintiff the costs of

this action (including all disbursements);

G. A judgment and order requiring Defendant to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;

H. A judgment and order requiring that Plaintiff be awarded a compulsory ongoing license fee; and

I. Such other relief as the Court may deem just and proper.

Dated: September 1, 2020

Respectfully submitted,

/s/Jeffrey D. Mills

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Austin, TX 78701
Telephone: (512) 457-2000
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