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Urban

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(54) **DETECTION OF EXIT BEHAVIOR OF AN INTERNET USER**

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This patent is subject to a terminal disclaimer.

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(60) Provisional application No. 61/640,714, filed on Apr. 30, 2012.

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G06Q 30/00 (2012.01)
G06Q 30/02 (2012.01)

(52) **U.S. Cl.**
CPC ***G06Q 30/0269*** (2013.01); ***G06Q 30/02*** (2013.01); ***G06Q 30/0201*** (2013.01); ***G06Q 30/0241*** (2013.01); ***G06Q 30/0277*** (2013.01)

(58) **Field of Classification Search**
CPC G06Q 30/0277
USPC 705/14.73
See application file for complete search history.

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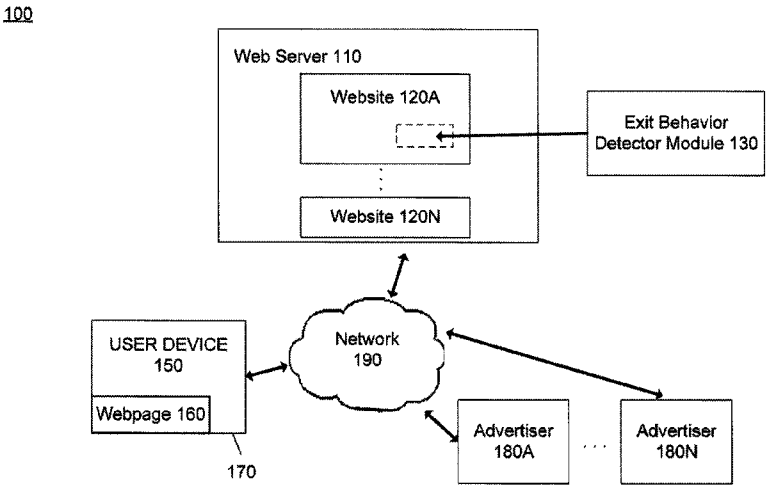
Primary Examiner — John G Weiss
Assistant Examiner — Scott C Anderson
(74) *Attorney, Agent, or Firm* — Pepper Hamilton LLP

(57) **ABSTRACT**

Use action in the form of movement of a tracking device on a webpage, represented by cursor gestures on the webpage, is used to detect it a user intends to leave the webpage. Upon detection of an intent to leave the webpage, an advertisement may be displayed to a use. The advertisement may be targeted to the user and/or based on the content the user was viewing on the webpage.

32 Claims, 7 Drawing Sheets



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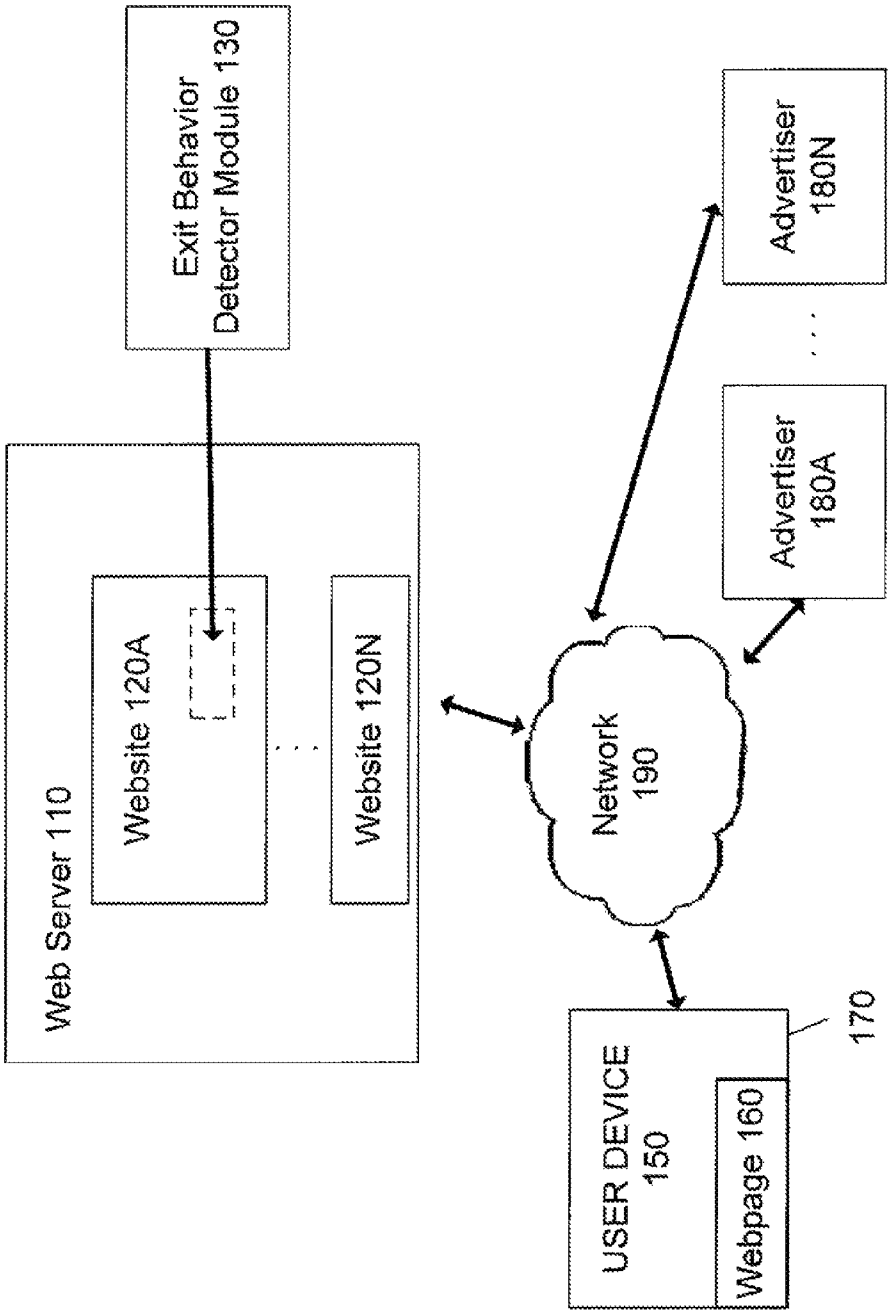
Exit Behavior Detector Module 130
Web Server 110
Website 120A
Website 120N
Network 190
Advertiser 180A
Advertiser 180N
USER DEVICE 150
Webpage 160
170

FIG. 1

100

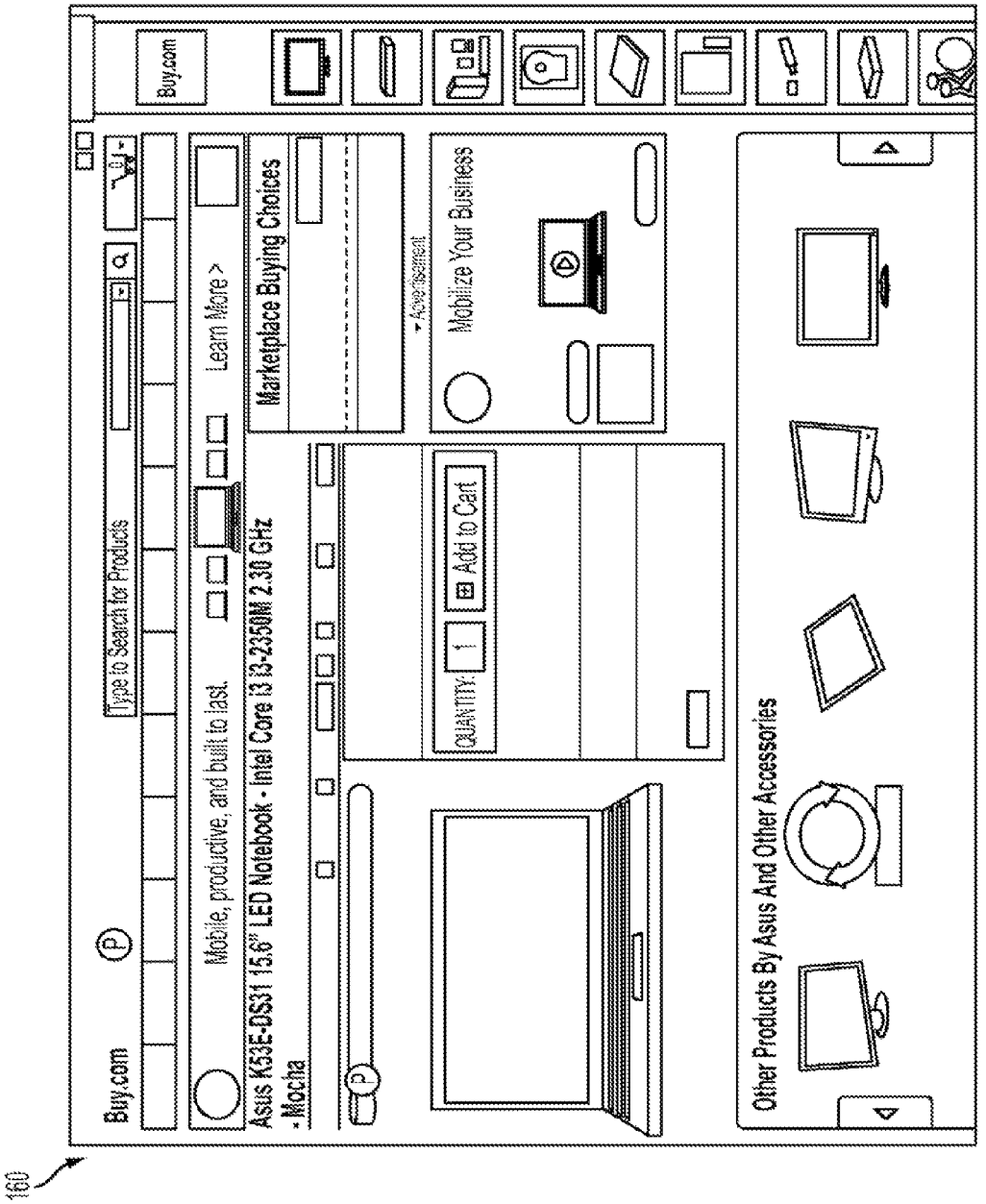
160
Buy.com
Type to Search for Products
Buy.com
Mobile, productive, and built to last.
Learn More >
Asus K53E-DS31 15.6" LED Notebook - Intel Core i3 B-2350M 2.30 GHz
- Mocha
Marketplace Buying Choices
Advertisement
Mobilize Your Business
QUANTITY:
1
Add to Cart
Other Products By Asus And Other Accessories

FIG. 2A

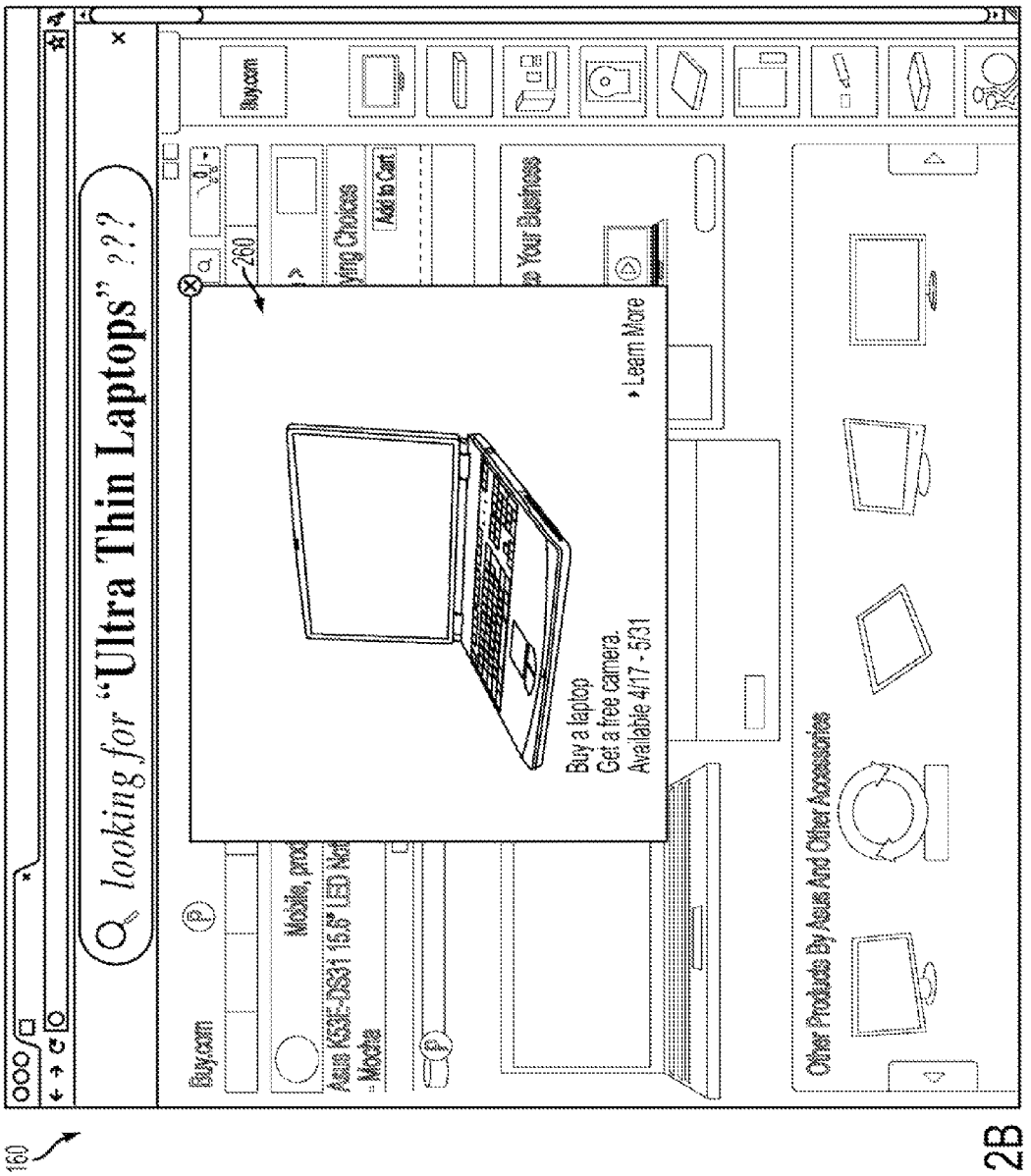
160
looking for "Ultra Thin Laptops" ???
Buy.com
260
Buy a laptop
Get a free camera.
Available 4/17 - 5/31
Learn More
Add to Cart
Other Products By Asus And Other Accessories

FIG. 2B

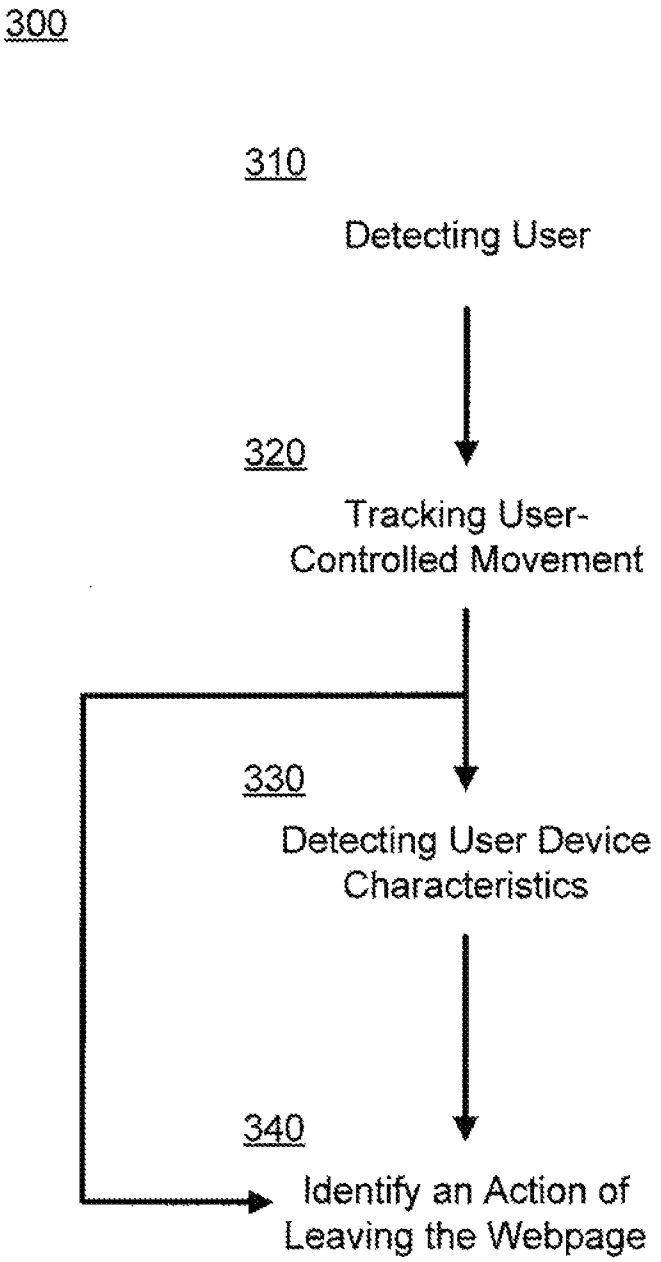
300
310
Detecting User
320
Tracking User-Controlled Movement
330
Detecting User Device Characteristics
340
Identify an Action of Leaving the Webpage

FIG. 3

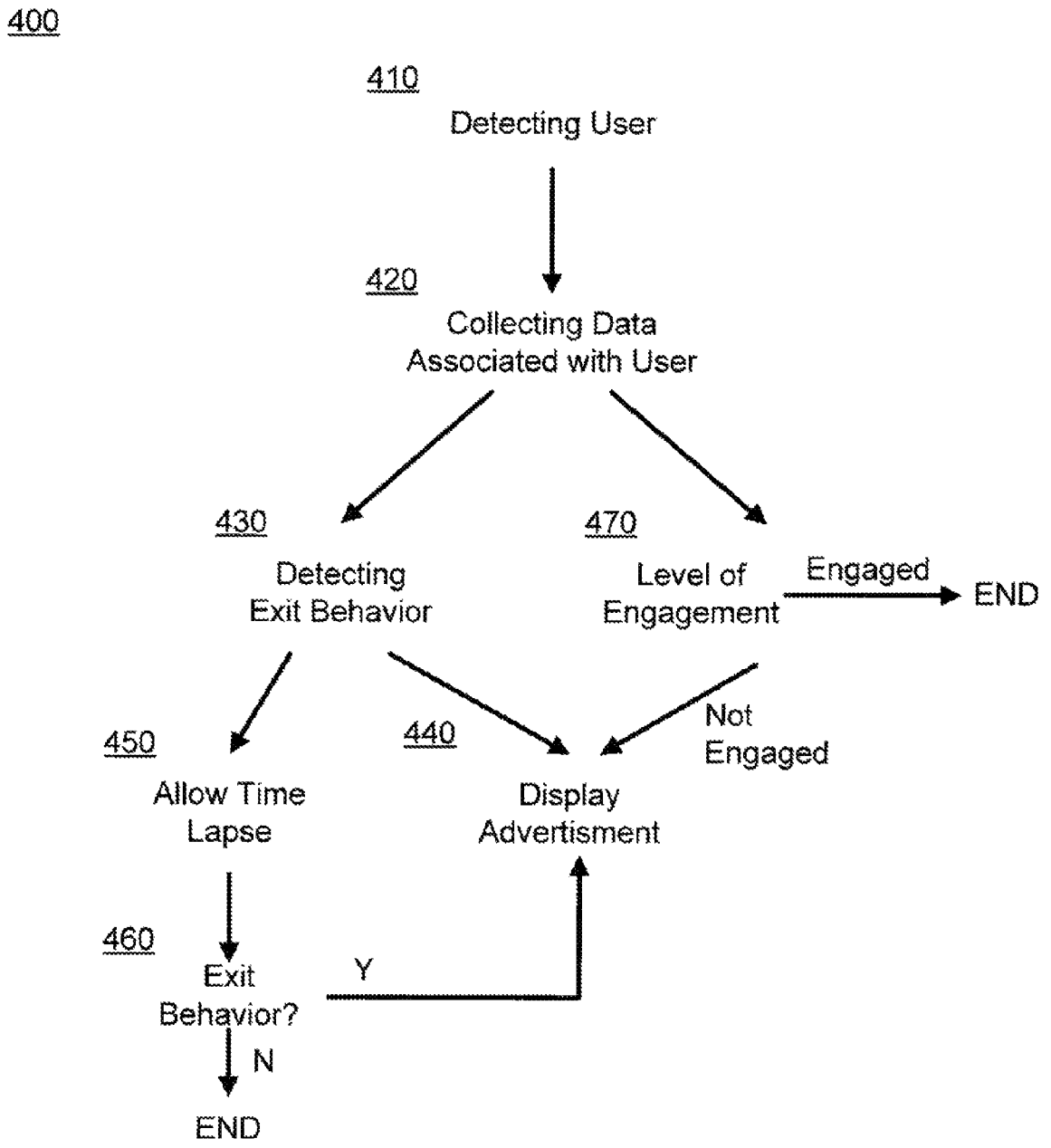
400
410
Detecting User
420
Collecting Data Associated with User
430
Detecting Exit Behavior
470
Level of Engagement
Engaged
END
Not Engaged
450
Allow Time Lapse
440
Display Advertisment
460
Exit Behavior?
Y
N
END

FIG. 4

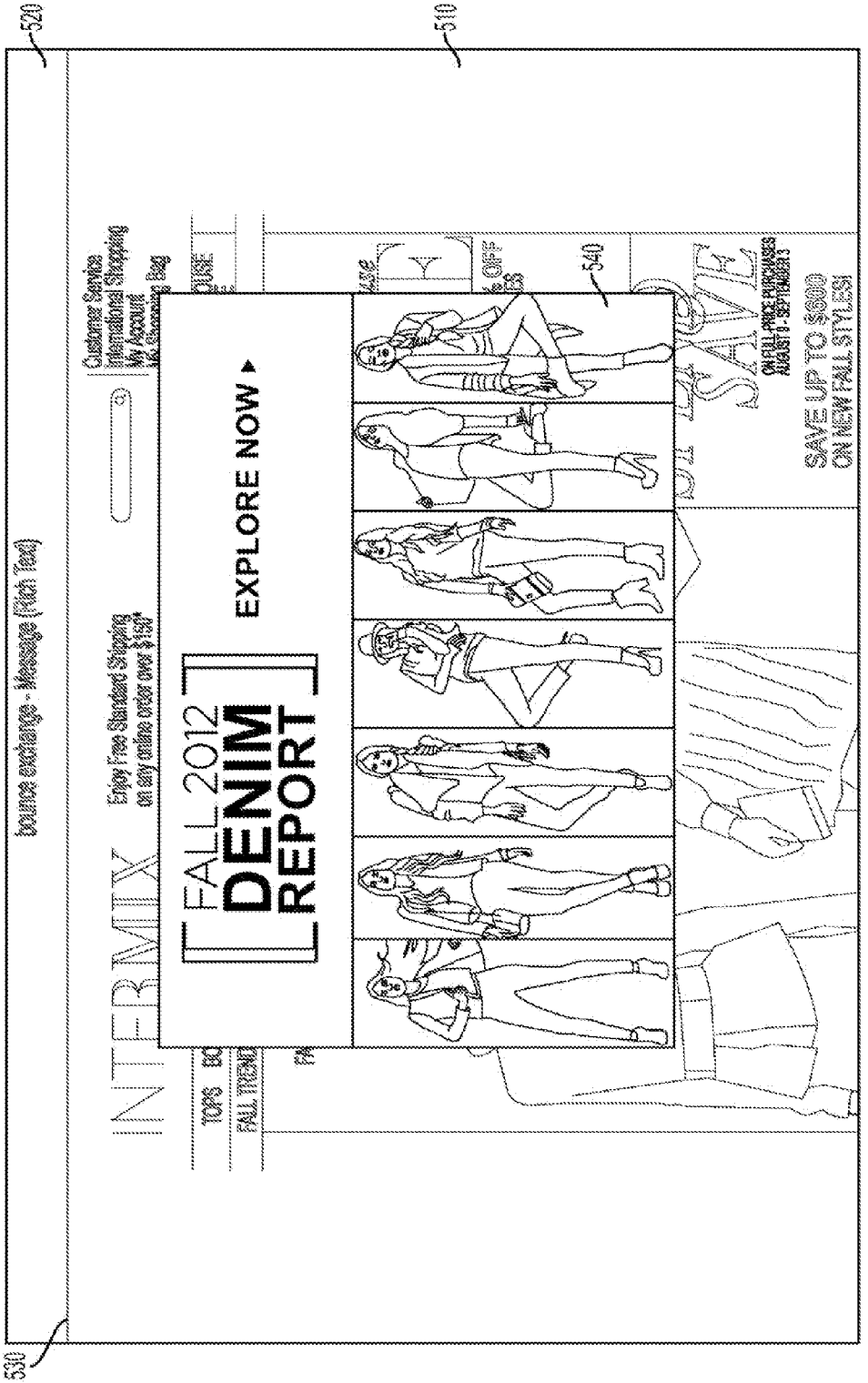
520
510
530
540
bounce exchange - Message (Rich Text)
INTERMIX
Enjoy Free Standard Shipping
on any online order over $150*
Customer Service
International Shopping
My Account
FALL 2012
DENIM
REPORT
EXPLORE NOW
TOPS
FALL TREND
SAVE UP TO $600
ON NEW FALL STYLES!

FIG. 5

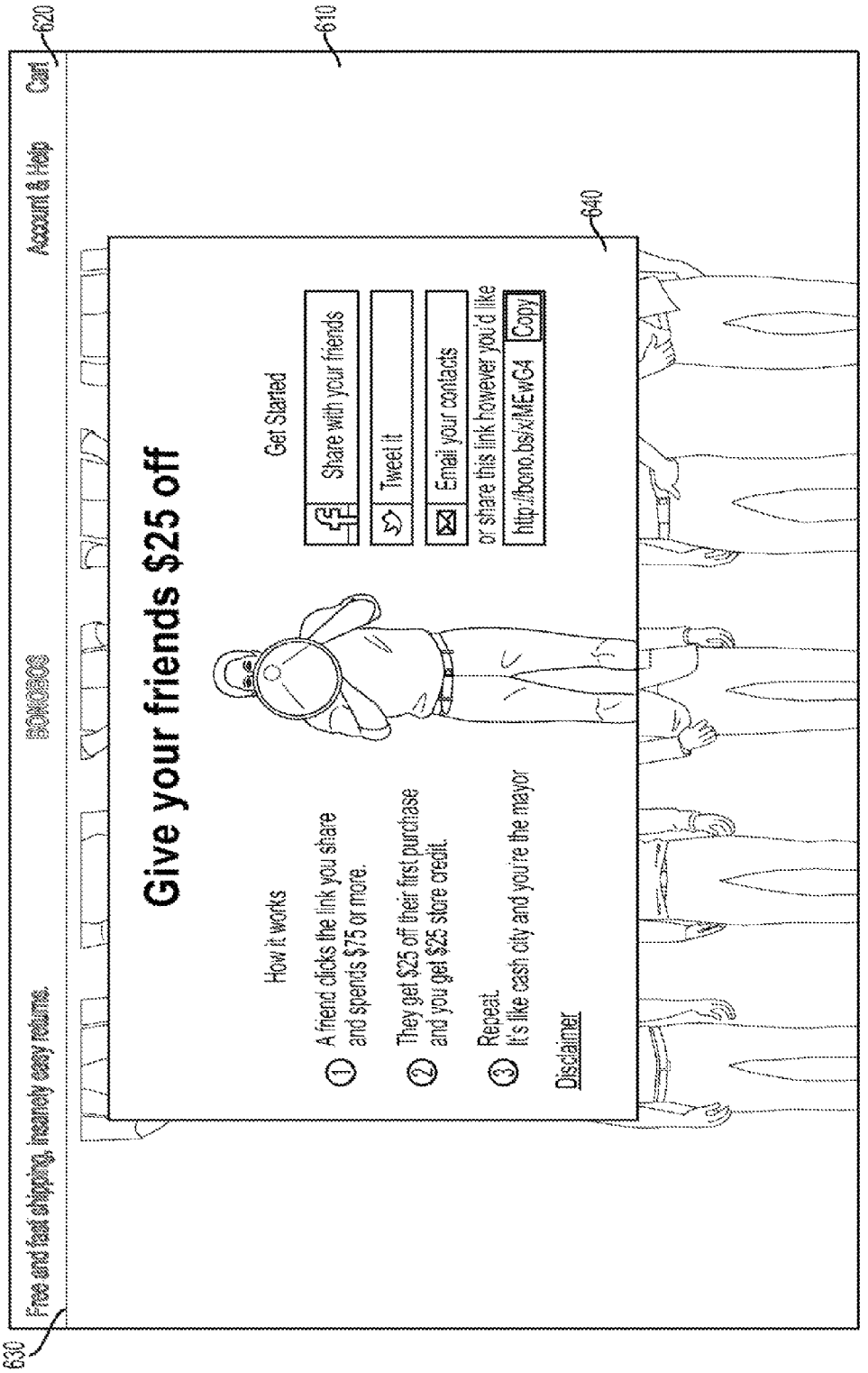
620
610
Free and fast shipping, insanely easy returns.
BONOBOS
Account & Help
Cart
640
Give your friends $25 off
How it works
1 A friend clicks the link you share and spends $75 or more.
2 They get $25 off their first purchase and you get $25 store credit.
3 Repeat.
It's like cash city and you're the mayor
Disclaimer
Get Started
Share with your friends
Tweet it
Email your contacts
or share this link however you'd like
http://bono.bs/x/MEwG4
Copy
630

FIG. 6

DETECTION OF EXIT BEHAVIOR OF AN INTERNET USER

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 13/660,519, filed Oct. 25, 2012, issued as U.S. Pat. No. 8,645,212, the contents of which are incorporated herein by reference in its entirety.

TECHNICAL FIELD

The present disclosure relates to detecting exit behavior of a user on a webpage. The present disclosure further relates to detecting exit behavior by tracking cursor movement or gestures on a webpage.

BACKGROUND

Online advertising is used on a wide range of websites to provide revenue to the website host. For example, advertisers may pay the host to populate portions of the website with advertisements. The advertisements may be provided in the margins alongside the main content of the website, as pop-up windows, or as full-page ads before the content of the website is provided, for example. The advertisements are often targeted to a user accessing the website. In many cases, the user considers the advertisements to be cumbersome or bothersome when the user is attempting to read the content on the website. Often, the user may simply ignore the advertisements. The present disclosure relates to a method of detecting exit behavior of a user accessing the webpage. By detecting exit behavior, more purposeful internet content can be delivered to an internet user because the visitor's session is effectively over, therefore his visit is not interrupted by the content. In some embodiments, the internet content comprises an advertisement unit comprising one or a plurality of advertisements.

SUMMARY

This specification describes methods, apparatus and computer program products related to the presentation of content in an electronic media contingent upon the exit behavior displayed by a user of a website.

The disclosure relates to a method of detecting exit behavior of a user on a webpage who operates a user device that accesses the internet. The user device comprises a tracking device through which the user of the user device may control movement, position, speed and location of a cursor visible screen or monitor of the user device. In some embodiments, the disclosure relates to a method of detecting exit behavior of a user on a webpage, wherein the user accesses the internet through a user device. In some embodiments, the method comprises: (a) detecting a user of a user device that accesses a webpage; and (b) tracking cursor movement controlled by the user on the webpage. In some embodiments, the disclosure relates to a method comprising detecting a cursor gesture associated with exit behavior. In some embodiments, any of the disclosed methods herein comprise the step of detecting a cursor gesture associated with exit behavior.

In some embodiments, the disclosure relates to a method of providing advertisements to a user of a user device that accesses the internet. In some embodiments, the method includes detecting a user accessing a webpage; collecting data associated with the user; and detecting exit behavior. In

some embodiments, if exit behavior is detected, an advertisement unit on the webpage is displayed. The advertisement unit contains one or more advertisements at least partially based upon the data associated with the user.

The disclosure further relates to a computer program product encoded on a computer-readable storage medium that comprises instructions for performing any of the methods described herein. In some embodiments, the disclosure relates to a method of providing advertisements to a user of a user device that accesses the internet. In some embodiments, the instructions are for detecting a user accessing a webpage and collecting data associated with the user. In some embodiments, the instructions further detect exit behavior. In some embodiments, the instructions cause the display of an advertisement unit on the webpage if exit behavior is detected. In some embodiments, the advertisement unit contains one or more advertisements at least partially based upon the data associated with the user. In some embodiments, the advertisement unit contains one or more advertisements at least partially based upon the data collected by the one or more methods disclosed herein. In some embodiments, the advertisement unit contains one or more advertisements at least partially based upon the data associated with the user or user device.

In some embodiments, the disclosure relates to a computer-implemented method of detecting exit behavior of a user of a user device that accesses the internet, the method comprising: detecting a user accessing a webpage; detecting exit behavior on the webpage. displaying an advertisement unit on the webpage, wherein the advertisement unit contains one or more advertisements and wherein the advertisement comprises a solicitation with the ultimate aim of converting a sale. In some embodiments, the disclosure relates to a computer-implemented method of detecting exit behavior of a user of a user device that accesses the internet, the method comprising: detecting a user accessing a webpage; detecting exit behavior on the webpage, displaying an advertisement unit on the webpage, wherein the advertisement unit contains one or more advertisements and wherein the advertisement comprises a solicitation for a conversion of a product or service or message associated with the webpage. In some embodiments, the disclosure relates to a computer-implemented method of detecting exit behavior of a user of a user device that accesses the internet, the method comprising: detecting a user accessing a webpage; detecting exit behavior on the webpage, displaying an advertisement unit on the webpage, wherein the advertisement unit contains one or more advertisements and wherein the advertisement comprises a solicitation for a conversion of a product or service or message associated with the webpage: wherein identifying a cursor gesture associated with exiting the webpage comprises one or a combination of: (i) identifying cursor acceleration at or below a predetermined value; (ii) breaking a plane of the webpage; and (iii) identifying cursor movement to a location of the webpage associated with leaving the webpage.

In some embodiments, the disclosure relates to a method of user display segmentation. In some embodiments, the disclosure relates to a computer-implemented method of display segmentation, the method comprising: detecting a user accessing a webpage; collecting data about the user; and segmenting the user display into coordinates that correspond to pixilation based upon the a user's data. In some embodiments, the method further comprising activating or deactivating detection function at a particular coordinate or set of coordinates.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other aspects of the present disclosure are best understood from the following detailed description

when read in connection with the accompanying drawings. For the purpose of illustrating the disclosure, it is understood that the illustrated embodiments are representative of the larger disclosure, however, the disclosure is not limited to the specific instrumentalities disclosed. Included in the drawings are the following Figures:

FIG. **1** is a block diagram of a system configured to detect exit behavior and provide advertisements to an internet user at a user device based on exit behavior detection;

FIGS. **2**A-B are a series of screen shots illustrating a webpage in which exit behavior detection is utilized;

FIG. **3** is a flow chart of a method of detecting exit behavior on a webpage accessed by a user of a user device that accesses the internet.

FIG. **4** is a flow chart of a method of providing an advertisement unit to an internet user at a user device based on exit behavior detection.

FIG. **5** is a depiction of a web page in which an advertisement is displayed to a user at a user device based upon user preferences, browser information, user device characteristics, and referral history after the user displays exit intent.

FIG. **6** is a depiction of a web page in which an advertisement is displayed to a user at a user device based upon the user preferences, browser information, user device characteristics, and referral history. The advertisement is in the form of a solicitation to user by which the user may enroll his or her email address into a database related to one or more of: (i) user search criteria; (ii) user identification information; (iii) user preferences; (iv) user location; (v) browser information; (vi) user device characteristics; (vii) user referral history; (viii) a web browser being utilized by the user device; (ix) an operating system of the user or user device; (x) whether Javascript has been enabled or disabled on the user device; (xi) a network connection speed of the user device; (xii) an enabled cookie; (xiii) screen resolution settings of the user device; and (xiv) the presence, acceleration and/or direction of mouse gestures.

DETAILED DESCRIPTION

As used herein an "advertisement" means any form of communication in which one or more products, services, ideas, messages, people, organizations or other items are identified and promoted. In some embodiments, an advertisement is not limited to commercial promotions or other communications. In some embodiments, an advertisement is a public service announcement or any other type of notice, such as a public notice published in printed or electronic press or a broadcast. In some embodiments, an advertisement is or includes sponsored content. In some embodiments, the advertisement or promotional information may promote the sale of a product or service. In some embodiments, the advertisement or promotional information may promote the sale of a product or service associated with the webpage out of which the user of the user device wishes to exit, hi some embodiments, the advertisement is or comprises a solicitation for a conversion activity, including but not limited to requesting contacting information for future communication, driving users to a certain product page, prompting users to refer a friend, asking a visitor to engage with social media pages, showing limited time offers, and informing visitors of existing internal promotions/deals. In some embodiments, the advertisement is a graphical advertisement, such as a banner advertisement, text only advertisement, image advertisement, audio advertisement, video advertisement, or an advertisement combining one of more of any of such components, executable code, or any other media, content, or interactive advertisement and the like. In some embodiments, the advertisement includes embedded information, such as links, meta-information, and/or machine executable instructions. The advertisement also may have various intrinsic features. In some embodiments, such features are specified by an application and/or by an advertiser, often depending on the type of advertisement. For example, in the case of a text advertisement, advertisement features may include a title line, ad text, and an embedded link. In the case of an image advertisement, advertisement features may include images, executable code, and an embedded link. In some embodiments, the advertisement is an advertisement disclosed in U.S. Pat Nos. 8,224,693; 8,165,915; 8,160,925, which are herein incorporated by reference in their entireties.

As used herein an "advertisement unit" means a window, display, or content area that comprises one or a plurality of advertisements; or a window, display, or content area upon which an advertisement or plurality of advertisements is populated. In some embodiments, the advertisement unit comprises a solicitation (text or link) that provides or solicits a conversion action. In some embodiments, the advertisement unit comprises a solicitation (text or link) that requests information from the user that can be used for future communication of an advertisement or solicitation of a conversion activity.

In some embodiments, the advertisement unit includes one or a plurality of advertisements that are relevant to user interest. In some embodiments, the system or program product described herein retrieves and provides one or a plurality of relevant advertisements based on the information received from the user device. In some embodiments, the system or program product described herein retrieves and provides one or a plurality of relevant advertisements from a website out of which the user of a device intends to exit. In some embodiments, the system or program product described herein retrieves and provides one or a plurality of relevant advertisements from an advertisement repository associated with a product from a website out of which the user of a device intends to exit. In some embodiments, the system or program product described herein retrieves and provides one or a plurality of relevant advertisements from an advertisement repository associated with the website out of which the user of a device intends to exit. In some embodiments, the system or program product described herein retrieves advertisement information from an advertisement repository using the back-end processing systems. In some embodiments, the system or program product retrieves one or a plurality of relevant advertisements using information from a crawling module, various keywords, various statistical associations between advertisements and content, and/or preference information associated with the publishers, and/or preference information associated with the website. In some embodiments, the system or program product retrieves one or a plurality of relevant advertisements using data associated with the user.

In some embodiments, when a user clicks on or otherwise interacts with the displayed advertisement or advertisement unit, an embedded code snippet directs the user device to contact the system or program product described herein. During this event, the user device may receive an information parcel, such as a signed browser cookie, from the system or program product. In some embodiments, the information parcel includes information, such as an identifier of the selected advertisement, an identifier of the publisher, and/or the date and/or time the advertisement was selected by the user. In some embodiments, the information parcel facilitates processing of conversion activities or other user transactions. In some embodiments, the user device then becomes redirected

to the advertiser owner associated with the selected advertisement. In some embodiments, the user device sends a request to the associated advertiser and then load a landing page from the advertiser. In some embodiments, the user performs a conversion action at the advertisement unit, such as purchasing a product or service, registering, joining an electronic mailing list, etc. In some embodiments, the system or program product described herein provides a code snippet, which may be included within a conversion confirmation page script such as a script within a web page presented after the purchase. In some embodiments, the user device executes the code snippet, which contacts the system or program product described herein and reports conversion data to the system or program product. In some embodiments, the system or program product comprises or includes conversion data, any of which includes conversion types and numbers and/or information from cookies. In some embodiments, the system or program product comprises described herein includes a conversion data repository that comprises and maintains the conversion data.

For purposes of this application, the terms "cursor gesture" means one or a plurality of a movements, directions, locations, speeds, or vectors of a cursor on a screen or monitor that is/are controlled by the user accessing a website on the internet through a user device. In some embodiments, the user controls cursor gesture through a tracking device. In some embodiments, the tracking device is selected from one or a plurality of: a touch screen, a tablet screen, a laptop key or button, a keyboard, a kinetic detection system that detects user movement and translates user movement into cursor movement on a corresponding screen, a track ball, a track pad; a mouse; a joystick, and voice activated cursor direction device or other similar device.

The terms "cursor gesture associated with exiting the website" mean a set of cursor gestures that relate to a user's intent to close or exit the webpage of the internet being viewed by the user. In some embodiments, the cursor gesture associated with exiting the website is one or a combination of cursor gestures selected from: cursor acceleration at or below a predetermined value; breaking a plane of the webpage; and cursor movement to a location of the webpage associated with function of leaving the webpage. In some embodiments, a location of the webpage associated with function of leaving the webpage is the address bar. search bar, a tab button of opening a new webpage, or the "back" button. For instance, through use of a typical web browser, a menu of options, buttons, or functions associated with the web browser functionality can be highlighted and selected at the top of a webpage. The web browser functionality is located on the screen at a position or positions independent of any addressable positions of the website being viewed. The position or positions of the screen that define an interface between the web browser functionality and the addressable positions of the website being viewed is the plane. For instance, in some embodiments, the computer program segments the browser window into a coordinate system with an "x" horizontal value and a "y" vertical value that corresponds to each pixel position on a screen. In some embodiments, the upper left corner represents the coordinate (0,0) (x=0 and y=0) and the bottom right represents the point (x, y) where the x value increasingly positive the farther right the pixel is from the reference point (0,0) and the y value is increasingly positive the farther down the pixel position is from the reference point (0,0). In some embodiments, a predetermined y value is set to correspond to the horizontal line of pixels that are positioned at the interface of where the webpage ends on the user's screen and where the web browser functionality begins. In some embodiments, the y value or interface value coordinate is (x, 2). One of ordinary skill in the art would understand based upon each user's user settings, operating system, browser, and resolution what the appropriate y value (or interface value) is that corresponds to the horizontal line of pixels that is interface between the web browser and the webpage. In some embodiments, the software can be set to create a dead zone whereby the software will not detect a portion or region of the web display defined by a set of at least one, two, three or four coordinates on the user's display.

Contemporaneously with the standard set interface value (such as (x, 2)) is set. the software detects the position of the cursor on the screen and monitors the (x, y) value. When the user moves the cursor upward on the screen, the software detects the segmented coordinates of the cursor position. If there is upward movement of the cursor, the y value of the coordinate system should be decreasing. Once the software detects the cursor position to be approaching the interface value of y, the software will trigger an advertisement. In some embodiments, the advertisement is triggered when the cursor has crossed the interface value. In some embodiments, the advertisement is displayed or triggered when the software detects the cursor position to have crossed the interface value in combination with one or more of the following detected characteristics:(i) a type of web browser being utilized by the user device; (ii) an operating system of the user or user device; (iii) whether Javascript® has been enabled or disabled on the user device; (iv) a network connection speed of the user device; (v) an enabled cookie; (vi) screen resolution settings of the user device; (vii) the presence and/or acceleration and/or direction of mouse gestures; (viii) user search criteria; (ix) user identification information; (x) user preferences; (xi) user location; (xii) browser information; (xiii) user device characteristics; and (xiv) user referral history. The terms "in combination with one or more" means that, in some embodiments, the software detects any combination of any individual or a plurality of (i) through (xiv) characteristics above with the detection of the cursor position across the interface value. In other words, in some embodiments the software may trigger an advertisement when software detects the cursor breaking the plane of the webpage in combination with one or more of the any of the characteristics described herein. In some embodiments, the software detects the breaking of the plane of the cursor in combination with the acceleration of the cursor on the segmented screen of the user. In some embodiments, the software detects the speed at which the (x, y) values are changing, in some embodiments the software detects the breaking of the plane in combination with the acceleration of the cursor toward the interface value.

It is understood that any interface value may be set for detection of cursor position across a particular horizontal pixel line on the user's display. While the software may have a default setting for the interface value to be 2, it is understood that a line lower than interface value may be set for detection purposes depending upon how frequently a website owner may want to trigger the display of the advertisement. For instance, in some embodiments, the software has a default setting of (x, 2) after detection of a user on a user device adapted for Internet Explorer® on a PC with high resolution. If a webpage owner desires to have software trigger advertisements more frequently, the software can set the software to detect cursor position and acceleration across the (x, 20) horizontal line of pixels. In some embodiments, the software detects the cursor position vertical movement in combination with acceleration or deceleration through that plane defined by the y value that defines the horizontal line of pixels. In some embodiments, the user is breaking the plans of the

website when the software detects the cursor movement across the interface value or any set horizontal line of pixels on the user display.

In some embodiments, the user's breaking the plane of the website either alone or in combination with one or a plurality of other cursor gestures indicates a willingness to leave or exit the webpage currently being viewed. In some embodiments, detection of exit behavior comprises detection of or identification of a cursor gesture associated with exiting the website, wherein the cursor gesture comprises breaking the plane accompanied by an acceleration of the cursor to a position on the screen associated with the exit or close of the web browser. In the case of the above illustrative embodiment, the exit or close function of the web browser is typically located (by default settings) at the top right of the screen and is indicated as an "x" button. In some embodiments, the method comprises detecting a cursor gesture of breaking the plane in combination with accelerated movement of the cursor from a position on the website to the top right of the screen or monitor being viewed by the user.

As used herein the terms "conversion" or "conversion activities" means an activity or activities in which a user of a device consummates a transaction or in which a user is invited to consummate a transaction related to an advertisement, advertisement unit, or data associated with the user. For example, in some embodiments, a conversion occurs when a user clicks on an advertisement, which refers them to the advertiser's web page, and consummates a purchase on the advertiser's web page before leaving that web page. In another example, a conversion is the display of an advertisement to a user who provides an email address into a repository. In some embodiments, an advertiser or web publisher that owns the repository uses user email or other user data to deliver farther advertisements or promotional information to the user at a later date or within a predetermined time (e.g., seven days).

The terms "breaking the plane" or "breaking a plane" of the webpage mean cursor movement across the interface between a website identified by a URL being viewed by a user and the menu or submenu of functions, keys, or buttons of a web browser being used by a user to view the webpage. In some embodiments breaking the plane of the webpage means cursor movement across any predetermined horizontal line of pixels on the web browser or webpage. In some embodiments, breaking a plane means cursor movement across the interface between a website identified by a URL being viewed by a user and the menu or submenu of functions, keys, or buttons of a web browser being used by a user to view the webpage normally associated with webpage address. In some embodiments, the user's cursor gesture across the plane of the website either alone or in combination with one or a plurality of other cursor gestures indicates a willingness to leave or exit the webpage currently being viewed. In some embodiments, detection of exit behavior comprises detection of or identification of a cursor gesture breaking the plane accompanied by an acceleration of the cursor to a position on the screen associated with the exit or close of the web browser. In the case of the above illustrative embodiment, the exit or close function of the web browser is typically located (by default settings) at the top right of the screen and is indicated as an "x" button. In some embodiments, the method comprises detecting a cursor gesture of breaking the plane in combination with accelerated movement of the cursor from a position on the website to the top right of the screen or monitor being viewed by the user. In some embodiments, the method comprises identifying breaking the plane, wherein breaking the plane may be detected at any location on the screen associated with web browser functionality. In some embodiments, the method comprises identifying breaking the plane, wherein breaking the plane may be detected at any location on the screen associated with web browser exit functionality. In some embodiments, the method comprises identifying breaking the plane, wherein breaking the plane may be detected at any location on the screen associated with web browser functionality directed with altering or leaving the website being viewed by the user. One of skill in the art can readily appreciate that settings of the web browser may be changed so that the web browser functionality can be in the form of an addressable button or ribbon at the top, bottom, side or corners of the screen. The disclosure relates to any method described herein wherein detecting exit behavior of a user comprises detection of a cursor breaking the plane of website at an addressable button or ribbon at the top, bottom, side or corners of the screen and wherein detection of the cursor breaking the plane is at least partially based upon data collected by the user about those web browser settings.

In some embodiments, the disclosure relates to a method of user display segmentation. In some embodiments, the disclosure relates to a computer-implemented method of display segmentation, the method comprising: detecting a user accessing a webpage; collecting data associated with the user; and segmenting the user display into coordinates that correspond to pixilation based upon data associated with the user. In some embodiments, the method further comprises activating or deactivating detection function at a particular coordinate or set of coordinates. In some embodiments, the method further comprising detection of exit behavior. In some embodiments, the method further comprises the step of activating or deactivating detection function at a particular coordinate or set of coordinates to reduce the number of false positives associated with the detection of exit behavior.

In some embodiments, the terms "data associated with the user" mean any data about the user or the user device that can be detected by the software of the present disclosure. In some embodiments, the data about the user or user device comprise one or a plurality of the following sets of data: search criteria used by the user; login information associated with the user; browsing history associated with the user; referral history associated with the user (where the user entered the site from); an identifier associated with the user device; duration of time viewing a website; cursor position corresponding to pixel location on the screen or monitor of the user; monitor or screen resolution; positional setting of a user's web browser functionalities or tool bar; internet connection speed; settings related to the enablement of Javascript®; whether the user has minimized a window associated with the webpage; the period of time associated with inactivity on the webpage; the transition of cursor speeds from slow to fast or fast to slow; user ip address; user web browser preferences; search criteria used by the user for direction of the user to a particular URL or website viewed by the user at moment data about the user is collected; and information used by and other user device characteristics such as user device RAM, user device total memory, and/or tracking device settings, in some embodiments, tracking device settings comprise cursor sensitivity. Methods of determining cursor speed and cursor sensitivity are known in the art and are described in U.S. Pat. No. 5,191,641 which is incorporated by reference herein in its entirety.

As used herein the term "web browser" means any software used by a user device to access the internet. In some embodiments, the web browser is selected from: Internet Explorer®, Firefox®, Safari®, Chrome®, SeaMonkey®, K-Meleon, Camino, OmniWeb®, iCab, Konqueror, Epiphany, Opera™, and WebKit®.

As used herein, the terms "an identifier associated with the user device" means any information related to identification information of the type of user device that is being used by a user to perform the method described herein or to run the software identified herein, hi some embodiments, the identifier associated with the user device is selected from: a serial number of the user device, lot information of the user device, user device manufacturer, user device software applications, user device operating system, and user device owner.

In some embodiments, a measure of user action on a webpage may be utilized to detect if a user intends to leave the webpage, which may then subsequently be utilized to provide advertisements to the user. In some embodiments, the user action is in the form of cursor gestures, which represent movement of cursor on the webpage through a tracking device controlled by the user. The user action may include an action that indicates or suggests that the user intends to leave the webpage (hereinafter referred to as "exit-intent" or "exit behavior"). The cursor gestures are tracked to detect if exit-intent is exhibited by the user at the webpage. In some embodiments, a detection of one or multiple user activities that correlates with exit behavior trigger the delivery of an advertisement prior to the user exiting the webpage. The advertisement may be targeted to the user and/or based on the content the user was viewing on the webpage. This provides an opportunity for an advertiser (in some embodiments, the webpage owner) to highlight and/or solicit a conversion for a particular product or service of interest to the user at a time that the user is not occupied with viewing the webpage content. In some embodiments, the disclosure relates to a computer-implemented method of detecting exit behavior of a user device that accesses the internet, the method comprising:

detecting a user accessing a webpage;

detecting exit behavior on the webpage, and

providing an advertisement unit that comprises one or a plurality of solicitations aimed at conversion.

In some embodiments, the method comprises a user performing a conversion activity in response to an advertisement unit displaying the conversion solicitation content.

In some embodiments, the disclosure relates to a system comprising a processor that performs a computer-implemented method of detecting exit behavior of a user of a user device that accesses the internet, the method comprising: detecting a user accessing a webpage;

detecting exit behavior on the webpage. In some embodiments, the disclosure relates to a system comprising a processor that performs a computer-implemented method of detecting exit behavior of a user of a user device that accesses the internet, the method comprising: detecting a user accessing a webpage; detecting exit behavior on the webpage, and providing an advertisement unit that comprises one or a plurality of conversions, hi some embodiments, the method comprises a user performing a conversion activity in response to an advertisement unit displaying the conversion. In some embodiments, the system comprises a program-product that solicits a conversion activity in response to detection of exit behavior. In some embodiments, the disclosure relates to a system including at least one processor and a computer readable memory, said computer readable memory having stored thereon program code for detecting exit intent or exit behavior comprising: means for storing data associated with a user of a user device; means for, responsive to detecting exit intent, presenting an advertisement as part of a user interface to the user. In some embodiments, the disclosure relates to a system that comprises at least one processor, a program storage, such as memory, for storing program code executable on the processor, and one or more input/output devices and/or interfaces, such as data communication and/or peripheral devices and/or interfaces. In some embodiments, the user device and computer system or systems are communicably connected by a data communication network, such as a Local Area Network (LAN), the Internet, or the like, which may also be connected to a number of other client and/or server computer systems. The user device and client and/or server computer systems may further include appropriate operating system software. With reference to FIG. **1**, a block diagram of a system **100** configured to detect exit behavior on a webpage and provide advertisements to an internet user at a user device upon detection of exit behavior is provided. The system **100** includes a web server **110**. The web server **110** hosts various websites **120***a-n* to provide internet content to various users through one or more networks, such as the network **190**. The network **190** may be any type of wired or wireless network or combination thereof, such as the Internet, a local area network (LAN), a wide area network (WAN), or the like. Users may access the content provided by the web server **110** through devices, such as the user device **150**. Although one web server **110** and one user device **150** is illustrated, additional web servers and/or user devices may be incorporated in the system **100**. At the user device **150**, a user accesses a webpage **160** associated with one of the websites **120***a-n*. The user may manipulate the webpage **160** through use of one or more tracking devices **170**, which may be a separate hardware component or a component integrated within the user device **150**. One common example of a tracking device **170** is a mouse, but there are no limits as to the type of tracking device that may be employed herein. Other examples include, but are not limited to, a touch pad, a tracking pad, a tracking ball, and a keyboard. A user's touch (i.e., fingers) may also be considered a type of tracking device if the user device **150** includes touch functionality. With respect to the user device **150**, any type of processing device to which a tracking device **170** can be attached or integrated within may be used, such as, for example and without limitation, a personal computer, a laptop, a desktop, and a handheld wired or wireless device. In some embodiments, the user device comprises one or more computer processes operated locally or remotely in one or various locations. The movement of the one or more tracking devices **170** is represented by cursor gestures, which are viewed by the user on the webpage **160**.

One or more of the websites **120***a-n* may include an exit behavior detection module **130**. The module **130** may be a software component or other computer program product that is encoded on a computer-readable storage medium, and which optionally includes or comprises instructions, (such as a programmed script or the like), that, when executed, cause operations related to the tracking and the detecting of the movement of cursor gestures on the webpage **160**.

The module **130** may be inserted or loaded on websites **120***a-n* to implement its functionality, the features of which are further described below.

The exit behavior detection module **130** functions to track cursor gestures on a webpage **160**. As described above, the cursor gestures represent the movement of one or more tracking devices **170** associated with the user device **150**. In this manner, the module **130** is able to detect when a user intends to leave the webpage **160**. Various cursor movements and vectors may be indicative of exit-intent on a webpage **160**; for example, when a user scrolls through the contents of a webpage **160** and then moves the tracking device **170** (i.e., the cursor gestures) to a portion of the webpage **160** that is associated with leaving the webpage **160**. Portions of the webpage **160** associated with leaving may include, but are not limited

to, an address bar, the "x" or "close" button, the "back" button, the "home" button, a browser search box, and a bookmark bar.

Other factors may also serve as an indicator of exit-intent; for example, the cursor gesture moving across the plane of the webpage **160** (hereinafter referred to as "breaking the plane" of the webpage). Breaking the plane may indicate that the user has perused content on the webpage **160** and is moving the tracking device **170** (represented by the cursor gestures) in such a manner as to leave the webpage **160**. Breaking the plane may be an action of a cursor gesture movement to one of the portions of the webpage **160** associated with leaving the webpage **160**.

Another indicator of exit-intent is the speed with which the cursor gesture is moved across the webpage **160**. If the cursor gesture accelerates or moves above a predetermined value, this may serve as an indication that the user does not intend to leave the webpage **160** and instead has accidentally bumped or otherwise moved the tracking device **170**. On the other hand, if the cursor gesture accelerates or moves across the webpage **160** at or below the predetermined value, as well as if the cursor gesture is moved from a bottom portion of the webpage **160** to atop portion, for example, this may be an indicator of exit-intent. The module **130** may be tailored for the particular web browser being utilized by the user on the user device **150** to view the webpage **160**. This tailoring may be necessary and beneficial as various web browsers may employ different means and positions for exiting webpages. For example, the toolbars may be located in different positions in various web browsers. Moreover, the content of toolbars (e.g., the buttons and corresponding functionality) may differ among various web browsers. The module **130** may include the programming script for a variety of web browsers. A detection of the web browser may be performed by the module **130**, and the applicable script may then be applied when a user is viewing the webpage **160** with a corresponding web browser. Examples of web browsers include, but are not limited to, Internet Explorer®, Firefox®, Safari®, Chrome®, Opera®, WebKit®, and the various versions thereof.

The module **130** may also detect other characteristics associated with the user device **150** and settings thereof, such as the operating system, whether Javascript® is enabled or disabled, the network connection speed, and the screen resolution. These characteristics may be used in the exit behavior detection. For example, screen resolution may be used to indicate the number of pixels from which the cursor gesture is moved to the top of the webpage **160**, which may in turn be used to determine if the cursor gesture is moved to a position that indicates the user is intending to leave the webpage **160** by breaking the plane of the webpage **160**.

Referring again to FIG. **1**, a plurality of advertisers **180***a-n* is provided as part of the system **100**. The advertisers **180***a-n* may communicate with the web server **110**, and in particular the exit behavior detection module **130**. over the network **190** to provide advertisements to be displayed on the webpage **160** in the event of exit-intent detection. Various advertising auctions that are known in the art may be employed to select the advertisers **180***a-n* and corresponding advertisements. As noted above, the advertisers **180***a-n* may wish to target specific customers and may attempt to provide an advertisement when a customer meeting the advertisement criteria is identified as the user of the webpage **160**. Examples of advertisements include commercials and links to articles or websites. Advertisements may include external advertisements provided from a third party source and internal advertisements, also referred to as "house ads." An internal advertisement may be provided by the host of the webpage **160** to promote other features, products, sad/or services. For example, if the user is viewing a webpage **160** of a particular television network detection of exit behavior occurs, an internal advertisement is provided to the user on the display of the user device wherein the internal advertisement includes a commercial that highlights a television show produced by the television network. With reference to FIGS. **2***a-b*, a series of screenshots of a webpage **160** in which exit-intent detection is being utilized are provided.

FIG. **2***a* illustrates a webpage **160** that is displayed to a user of the user device **150**. The webpage **160** is directed to a product for which the user performed a search(in this case, an ultra-thin laptop). However, the webpage **160** need not be the result of a product search. In fact, exit-intent detection maybe applied to any type of webpage **160** regardless of its content.

Upon detecting that the tracking device **170** is being manipulated to leave the webpage **160** (as evidenced by cursor gestures), the exit behavior detection module **130** provides an advertisement unit **250** to the user via the user device **150**. The advertisement **250** is shown in FIG. **2***b*. In the example illustrated, the advertisement **250** is populated in a window **260** that is displayed over a portion of the webpage **160**. The webpage **160** may be shaded in a darker contrast than the window **260** to emphasize the advertisement **250**. There are various ways in which the advertisement **250** may be presented to the user, and the display is not limited to that as shown in FIG. **2***b*. For example, the advertisement **250** may be presented through a modal overlay the webpage **160** in a manner to cover a larger portion or the entire webpage **160**. Other optional features may be included to aid in and/or confirm the exit behavior detection, including a determination related to a level of engagement of the user of the webpage **160**. In some embodiments, detecting exit behavior is optimized wherein the step of detecting exit behavior comprises determining the level of engagement of the user. The level of engagement relates to an amount the user is engaged with (i.e., interested in) the webpage **160**. Factors related to level of engagement include, but are not limited to, an amount of time the user is actively on the webpage **160**; whether the user has previously visited the webpage **160**; the number of links and/or pages being viewed by the user; and a quality of a keyword search or previously visited webpage used by the user to be directed to the webpage **160**; and the frequency with which the user addresses the webpage **160** with cursor movement; and the location of cursor movement relative to the amount of time the user views the webpage **160**. For instance, in some embodiments, detecting exit behavior is dependent upon the scrolling action of a webpage **160** determined by movement at the side of the webpage **160**. A baseline level of engagement may be established to be used as a comparison point by the module **130** to determine the level of engagement exhibited by the user. If the level of engagement meets or exceeds the baseline level of engagement, the user may be classified as engaged. A decision may be established, which is incorporated in the programmed script of the exit behavior detection module **130**, not to provide advertisements or advertisement units to engaged users or to provide specific types of advertisements to engaged users. In some embodiments, the advertisement unit may be an internal advertisement unit that comprises at least one internal advertisement. An "internal advertisement" is an advertisement that communicates about information, product or service that appears on the website out of which or away from which the user of the user device wishes to exit. In some embodiments, the advertisement is external advertisement unit. An "external advertisement unit" This decision may generally be linked with the host of the website **120**. For example, it may be

viewed by the website host that an engaged user is not interested in receiving advertisements, or that an engaged user should be provided with internal advertisements. Baseline criteria associated with a baseline level of engagement may be, for example: five minutes as an amount of time the user is actively on the webpage **160**; two visits within one week to the webpage **160**; viewing five links and/or pages associated with a domain name corresponding to the webpage **160**; and a keyword search of three words. If the user meets or exceeds one or more of these baseline criteria (as established by the website **120**), then the user may be classified as engaged. Additional and/or alternate criteria for determining engagement of a user may also be used within the scope of this disclosure.

A time delay feature may also be incorporated in the exit behavior detection performed by the exit behavior detection module **130**. The time delay may be beneficial to confirm that the user actually does intend to leave the webpage **160**, thus avoiding a false positive instance in which it is detected the user is leaving, but in actuality the user is not. The time delay feature may operate by incorporating a time delay of a predetermined period of time prior to detecting exit intent to display an advertisement. After the predetermined period of time has elapsed, if subsequent detection of exit-intent is found, this may serve as a confirmation of exit-intent. If however, an exit-intent is not exhibited following the predetermined period of time, the initial detection may be classified as a false positive, in which case an advertisement is not provided. The amount of the predetermined period of time may be established on a case by case basis per the website host. In some embodiments, the predetermined period of time is about 3, 4, 5, 6, or more seconds after the user has broken the plane of the website. In some embodiments, the predetermined period of time is about at least 3, 4, 5, 6, 7, 8, 9, 10 or more seconds after the user has broken the plane of the website. In some embodiments, the predetermined period of time is no more than about 3, 4, 5, 6, 7, 8, 9, 10 or more seconds after the user has broken the plane of the website. In some embodiments, the methods described herein include detecting an exit behavior of a user of a user device in an optimized fashion in which the decision to provide an advertisement unit depends upon one or more user actions which in sequence after breaking the plane indicate exit intent. In some embodiments, the methods described herein include detecting an exit behavior of a user with a user device in an optimized fashion in which the decision to provide an advertisement unit depends upon one or more user actions which in sequence after breaking the plane indicate exit intent. In some embodiments, the step of detecting exit behavior comprises identifying a cursor gesture associated with exiting a website and subsequently monitoring the time it takes the user to move the cursor to one or more locations on the screen. In some embodiments, the step of detecting exit behavior comprises identifying a cursor gesture associated with exiting a website and subsequently monitoring the level of activity or inactivity of the user before an advertisement unit is provided to the user. In some embodiments, the step of detecting exit behavior comprises identifying a cursor gesture associated with exiting a website and subsequently monitoring the level of activity or inactivity of the user before an advertisement is provided to the user.

An activity-inactivity feature may also be incorporated in the methods described herein and in the detection of exit behavior described herein to reduce an occurrence of false positives. The module **130** may detect inactivity by the user on the webpage **160**. This may be detected through the tracking of cursor gestures. If, following a certain predefined period of inactivity, the user resumes activity on the webpage **160**, the module **130** may stop monitoring the cursor gestures so that exit behavior is not detected or triggered. This functionality may also be employed if a user is using or selects multiple tabs or pages on a web browser, or if the user minimizes the webpage **160**. In such instances, exit behavior detection may not be desirable as the user is perusing one or more webpages **160** without intending to leave the one or more webpages **160**.

FIG. **3** is a flow chart of a method **300** of detecting exit behavior on a webpage **160** accessed by a user of a user device **150** that accesses the internet. It should be understood that each of the operations described herein can be performed directly by or in response to programming instructions executed on one or more processors, such as one or more associated with the web server **110** available to exit behavior detection module **130**. These software instructions can be stored for execution via any conventional means including a hard drive, solid state memory, optical disk, flash memory, multimedia card, or via access to a remote processor, or the like.

At **310**, a user is detected accessing the webpage **160**. At **320**, movement controlled by the user on the webpage **160** through cursor gestures on the webpage **160** is tracked. By tracking the cursor gestures, exit behavior may be identified.

At **330**, a cursor gesture that represents an action of leaving the webpage **160** by the tracked movement controlled by the user is identified. As described in detail above, the actions that represent intent to leave the webpage **160** may include an acceleration of the cursor gesture at or below a predetermined value, breaking a plane of the webpage **160** with the cursor gesture, and the cursor gesture movement to a portion of the webpage **160** associated with leaving the webpage **160**.

At **340**, prior to identifying a cursor gesture that represents an action of leaving the webpage **160**, characteristics associated with the user device **150** may be detected. This detection of user device **150** characteristics may also be done in conjunction with tracking the movement controlled by the user through cursor gestures at **320**. The identified characteristics may be used to aid in identifying the cursor gesture that represents an action of leaving the webpage **160**. The characteristics associated with the user device **150** may include, as described above, one or more of web browser type, operating system, enablement of Javascript® (i.e., enabled or disabled), network connection speed, and screen resolution.

FIG. **4** is a flow chart of a method **400** of providing advertisements to an internet user at a user device **150** based on an exit-intent detection. It should be understood that each of the operations described herein can be performed directly by or in response to programming instructions executed on one or more processors, such as one or more associated with the web server **110**, available to exit behavior detection module **130**. These software instructions can be stored for execution via any conventional means including a hard drive, solid state memory, optical disk, flash memory, or the like.

At **410**, a user is detected accessing the webpage **160**. At **420**, data associated with the user is collected. The data may be used in determining the advertiser **180***a-n* and the advertisement for the particular user. The data may also be used to aid in the exit behavior detection by providing information related to the browser, the internet connection speed, and the resolution of the monitor of the user device **150**. The data associated with the user may also include, but is not limited to, user search criteria, user identification information, user preferences, and user location. The data may be used to assist an advertiser **180***a-n* in providing appropriate advertisement. For example, by having the location of a particular user as

well as knowing certain user preferences (e.g., website bookmarks, online browsing history), the user may be presented with an advertisement for a service and/or product that is likely of interest to the user. The advertisement may be based on a search that the user initiated that led to the webpage **160**; in this manner, the advertisement may serve as an alternative to those provided on the webpage **160**. The data associated with the user may be collected by obtaining the user search criteria on the webpage, login information associated with the user, a browsing history associated with the user, and/or an identifier associated with the user device **150** (e.g., an internet protocol (IP) address).

At **430**, exit behavior on the webpage **160** is detected. The exit behavior is based on tracked movement controlled by the user on the webpage **160** and includes an action indicating that the user intends to leave the webpage **160**. For example, acceleration of the cursor gestures at or below a predetermined value may indicate an exit behavior, as does cursor gesture movement across the plane of the webpage **160** at or near a steady rate. An action indicating that the user intends to leave the webpage **160** may also include cursor gesture movement to an address bar on the webpage **160**, to a portion of the webpage **160** associated with leaving the webpage **160**. An action indicating that the user intends to leave the webpage **160** may also include a cursor gesture movement in a vector toward the "exit" or "back" button on a browser. An action indicating that the user intends to leave the webpage **160** may also include a cursor gesture movement in a vector toward the "exit" or "back" button on a browser in combination with a time delay after breaking the plane of the webpage **160**.

At **440**, an advertisement unit on the webpage **160** is displayed. The advertisement unit contains one or more advertisements and is based at least partially on the user data associated with the user. The advertisement unit may be a window, such as the window **260** described above with reference to FIG. **2***c*. Displaying of the advertisement unit may include, but is not limited to, populating a window, such as the window **260**, with one or more advertisements **250**, displaying the window **260** over at least a portion of the webpage **160**, and shading the webpage **160** so that the window **260** is brighter in contrast than the webpage **160**. Examples of content in the advertisements **250** may include a link to an advertisement webpage to view information associated with the one or more advertisements **250** a text description associated with the one or more advertisements **250** and a clickable video associated with the one or more advertisements **250**. However, there is no limit on the advertisement content that may be provided. In some embodiments, an advertisement is a link to a website to view advertisement information or promotional information associated with the one or more advertisements and/or data associated with the user. In some embodiments, an advertisement comprises a link to a website to view advertisement information or promotional information associated with the one or more advertisements and/or data associated with the user. In some embodiments, an advertisement is link to an webpage to promote the sale of a product or service associated with the one or more advertisements and/or data associated with the user. In some embodiments, an advertisement comprises a link to an webpage to promote the sale of one or more product or service associated with the one or more advertisements and/or data associated with the user. In some embodiments, an advertisement comprises a solicitation of the user's identification information such as an email address in order for the user to receive one or a plurality of advertisements or promotional information about a product associated with data associated with the user at a future time period or over a future time period. In some embodiments, the advertisement is a solicitation of the user's identification information such as an email address in order for the user to receive one or a plurality of advertisements or promotional information about a product associated with data associated with the user at a future time period or over a future time period. In some embodiments, an advertisement unit comprises at least one or a plurality of advertisements wherein the advertisements comprise a solicitation for the user to provide identification information such as a user email address. In some embodiments, an advertisement unit comprises at least one or a plurality of advertisements wherein the one or plurality of advertisements comprise a solicitation for the user to provide identification information such as a user email address. The email address in any of the aforementioned embodiments can be used by a website owner to offer the user promotional information (such as a coupon) for one or more products or services at a time in the future where such service or products related to the data associated with the user.

As described above, the feature of a time delay may be incorporated in the processing by the exit behavior detection module **130**. This feature allows for avoiding certain false positives by waiting a predetermined period of time to elapse to ensure that the user intends to leave the webpage **160**. At **450** of the method **400**, a time delay of a predetermined period of time is allowed to elapse before detecting exit intent. Following such a time delay, at **460**, a subsequent detection of exit behavior on the webpage **160** is performed. If the exit behavior is detected, the method **300** proceeds to **440** to display the advertisement unit. If there is no detected exit behavior, the method **400** ends and no advertisement unit is displayed. In some embodiments, the time delay is about 3 seconds, about 4 seconds, about 5 seconds, about 6 seconds, about 7 seconds, or about 8 seconds.

As also described above, the feature of a level of engagement may also be employed by the exit behavior detection module **130**. At **470**, in conjunction with detecting exit behavior by the user on the webpage **160**, a level of engagement of the user on the webpage **160** is determined. If the level of engagement on the webpage **160** is high (i.e., meets or exceeds baseline criteria associated with a baseline level of engagement), as defined by the host of the website **120**, the user is classified as engaged, and the advertisement unit is not displayed on the webpage **160**. The method **400** then ends. If, instead, the user is not classified as engaged, the method **400** continues to **440** to display the advertisement. In some embodiments, the disclosure relates to determining the level of engagement of a user of a user device comprising determining exit intent of the user.

FIG. **5** depicts a webpage **510** embedded in a web browser **520**. An interface between the web browser functionality and the webpage is depicted at **530**. After the detection of vertical cursor movement of a user across the interface **530** in combination with detection of any one or more of the other aforementioned characteristics of the user device, web browser, etc., an advertisement **540** is displayed that, in this embodiment, related to the user preferences and user referral history. For instance, the fact that the user may have searched for and/or views a webpage related to casual clothing causes the software to trigger an advertisement related to denim clothing after the software detects exit intent of the user.

FIG. **6** depicts a webpage **610** embedded in a web browser **620**. Similar to FIG. **5**, an interface between the web browser and the webpage is depicted at **630** is defined at the horizontal line of pixels positioned at the interface. After the detection of vertical cursor movement of a user across the interface **630** in combination with user referral history that is related to heavy

use of social media centers, an advertisement **640** is displayed that invites the user to subscribe to an email listserv related to social media use.

The following description is an example of an advertisement auction; however, any type of method may be employed to obtain advertisers and advertisements to be displayed upon detecting exit behavior. When exit behavior is detected, a bid request to one or more of the advertisers **180***a-n* may be provided to begin the selection of the one or more advertisers **180***a-n* to provide the advertisement. The bid request may be sent from the exit behavior detection module **130**. The exit behavior detection module **130** may select the advertisers **180***a-n* based on. for example, the user data associated with the user. One or more bids from one or more of the advertisers **180***a-n* is received, where each of the bids is associated with providing an advertisement for the advertisement unit to be displayed on the webpage **160**. The one or more bids may be prioritized to determine a prioritized listing of bids. The prioritization may be based on, for example, revenue, applicability to the user, reliability of the corresponding advertiser **180***a-n*, and quality of the corresponding advertisement. The advertisement unit is then created with at least a subset of the one or more advertisements based on the prioritized listing of bids. Other suitable operations or sets of operations may be used in accordance with some embodiments. Some operations or sets of operations may be repeated, for example, substantially continuously, for a pre-defined number of iterations, or until one or more conditions are met. In some embodiments, some operations may be performed in parallel, in sequence, or in other suitable orders of execution.

In some embodiments, components and/or units of the devices described herein may be able to interact through one or more communication channels or mediums or links, for example, a shared access medium, a global communication network, the Internet, the World Wide Web, a wired network, a wireless network, a combination of one or more wired networks and/or one or more wireless networks, one or more communication networks, an a-synchronic or asynchronous wireless network, a synchronic wireless network, a managed wireless network, a non-managed wireless network, a burstable wireless network, a non-burstable wireless network, a scheduled wireless network, a non-scheduled wireless network, or the like.

Discussions herein utilizing terms such as, for example, "processing," "computing," "calculating," "determining," or the like, may refer to operation(s) and/or process(es) of a computer, a computing platform, a computing system, or other electronic computing device, that manipulate and/or transform data represented as physical (e.g., electronic) quantities within the computer's registers and/or memories into other data similarly represented as physical quantities within the computer's registers and/or memories or other information storage medium that may store instructions to perform operations and/or processes.

Some embodiments may take the form of an entirely hardware embodiment, an entirely software embodiment, or an embodiment including both hardware and software elements. Some embodiments may be implemented in software, which includes but is not limited to firmware, resident software, microcode, or the like.

Furthermore, some embodiments may take the form of a computer program product accessible from a computer-usable or computer-readable medium providing program code for use by or in connection with a computer or any instruction execution system. For example, a computer-usable or computer-readable medium may be or may include any apparatus that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device.

In some embodiments, the medium may be or may include an electronic, magnetic, Optical, electromagnetic. InfraRed (IR), or semiconductor system (or apparatus or device) or a propagation medium. Some demonstrative examples of a computer-readable medium may include a semiconductor or solid State memory, magnetic tape, a removable computer diskette, a Random Access Memory (RAM), a Read-Only Memory (ROM), a rigid magnetic disk, an optical disk, or the like. Some demonstrative examples of optical disks include Compact Disk-Read-Only Memory (CD-ROM), Compact Disk-Read/Write (CD-R/W), DVD, or the like.

In some embodiments, a data processing system suitable for storing and/or executing program code may include at least one processor coupled directly or indirectly to memory elements, for example, through a system bus. The memory elements may include, for example, local memory employed during actual execution of the program code, bulk storage, and cache memories which may provide temporary storage of at least some program code in order to reduce the number of times code must be retrieved from bulk storage during execution.

In some embodiments, input/output or I/O devices (including but not limited to keyboards, displays, pointing devices, etc.) may be coupled to the system either directly or through intervening I/O controllers. In some embodiments, network adapters may be coupled to the system to enable the data processing system to become coupled to other data processing systems or remote printers or storage devices, for example, through intervening private or public networks. In some embodiments, modems, cable modems and Ethernet cards are demonstrative examples of types of network adapters. Other suitable components may be used.

Some embodiments may be implemented by software, by hardware, or by any combination of software and/or hardware as may be suitable for specific applications or in accordance with specific design requirements. Some embodiments may include units and/or sub-units, which may be separate of each other or combined together, in whole or in part, and may be implemented using specific, multi-purpose or general processors or controllers. Some embodiments may include buffers, registers, stacks, storage units and/or memory units, for temporary or long-term storage of data or in order to facilitate the operation of particular implementations.

Some embodiments may be implemented, for example, using a machine-readable medium or article which may store an instruction or a set of instructions that, if executed by a machine, cause the machine to perform a method and/or operations described herein. Such machine may include, for example, any suitable processing platform, computing platform, computing device, processing device, electronic device, electronic system, computing system, processing system, computer, processor, or the like, and may be implemented using any suitable combination of hardware and/or software. The machine-readable medium or article may include, for example, any suitable type of memory unit, memory device, memory article, memory medium, storage device, storage article, storage medium and/or storage unit; for example, memory, removable or non-removable media, erasable or non-erasable media, writeable or re-writeable media, digital or analog media, hard disk drive, floppy disk, Compact Disk Read Only Memory (CD-ROM), Compact Disk Recordable (CD-R), Compact Disk Re-Writeable (CD-RW), optical disk, magnetic media, various types of Digital Versatile Disks (DVDs), a tape, a cassette, or the like. The instructions may include any suitable type of code, for

example, source code, compiled code, interpreted code, executable code, static code, dynamic code, or the like, and may be implemented using any suitable high-level, low-level, object-oriented, visual, compiled and/or interpreted programming language, e.g., C, C++, Java™, BASIC, Pascal, Fortran, Cobol, assembly language, machine code, or the like.

Functions, operations, components and/or features described herein with reference to one or more embodiments, may be combined with, or may be utilized in combination with, one or more other functions, operations, components and/or features described herein with reference to one or more other embodiments, or vice versa.

Although the disclosure has been described with reference to exemplary embodiments, it is not limited thereto. Those skilled in the art will appreciate that numerous changes and modifications may be made to the preferred embodiments of the disclosure and that such changes and modifications may be made without departing from the true spirit of the disclosure. It is therefore intended that the appended claims be construed to cover all such equivalent variations as fall within the true spirit and scope of the disclosure.

What is claimed is:

1. A computer-implemented method of detecting activity of a user on a user device that accesses the internet and comprises a display, wherein the activity indicates the user's intent to initiate an exit command, the method comprising:

in a system configured to host a webpage, the system comprising at least one processor and a memory,

detecting, by the at least one processor, a user accessing the webpage;

setting, by the at least one processor, a predetermined value, stored in the memory, that corresponds to a pixel or plurality of pixels on the webpage; and,

prior to the user initiating an exit command, detecting, by the at least one processor, activity of a user that indicates the user's intent to initiate the exit command at a position on the display relative to the predetermined value.

2. The computer-implemented method of claim **1**, wherein the activity of the user that indicates a user's intent to initiate the exit command comprises at least one cursor gesture.

3. The method of claim **1**, wherein the plurality of pixels defines an interface between the webpage being viewed by the user and a menu or submenu of functions, keys, or buttons of a web browser being used by a user to view the webpage.

4. The method of claim **1** further comprising a step of displaying an advertisement unit on the webpage after the step of detecting the activity of the user but prior to the user initiating an exit command, wherein the advertisement unit comprises one or more advertisements.

5. The method of claim **4**, further comprising:

collecting data associated with the user or the user device, wherein the content of the one or more advertisements is at least partially based upon the data associated with the user of the user device.

6. The method of claim **5**, wherein the data associated with the user or the user device comprises one or more of: (i) a web browser being utilized by the user device; (ii) an operating system of the user or user device; (iii) whether a computer programming code has been enabled or disabled on the user device; (iv) a network connection speed of the user device; (v) an enabled cookie; (vi) screen resolution settings of the user device; and (vii) the presence of mouse gestures.

7. A computer-implemented method of providing one or a plurality of advertisements to a user of a user device that accesses the internet and that comprises a display, the method comprising:

in a system configured to host a webpage, the system comprising at least one processor and a memory,

detecting, by the at least one processor, a user accessing the webpage;

collecting, by the at least one processor, data, stored in the memory, associated with the user;

setting, by the at least one processor, a predetermined value, stored in the memory, that corresponds to a pixel or plurality of pixels on the display;

detecting, by the at least one processor, user activity on the webpage indicative of the user exiting the webpage prior to the user exiting the webpage at a position on the display relative to the predetermined value; and

displaying an advertisement unit on the webpage prior to the user exiting the webpage, the advertisement unit containing one or more advertisements based at least partially on the data associated with the user.

8. The computer-implemented method of claim **7**, wherein detecting user activity on the webpage comprises tracking cursor motion of the user on the webpage.

9. The computer-implemented method of claim **7**, wherein the predetermined value corresponds to a pixel or set of pixels on the display that define an interface between the webpage and web browser functionality.

10. The method of claim **7**, wherein the data associated with the user comprises one or more of: (i) user search criteria; (ii) user identification information; (iii) user preferences; (iv) user location; (v) browser settings; (vi) user device characteristics; (vii) user referral history; and (viii) a browsing history associated with the user.

11. The method of claim **10**, wherein collecting data associated with the user comprises obtaining one or more of: (i) the user search criteria on the webpage; (ii) login information associated with the user; (iii) a browsing history associated with the user; and (iv) an identifier associated with the user device.

12. The method of claim **7**, wherein the user activity based at least partially on tracking cursor movement of the user on the webpage and configuration of the user's web browsing software.

13. The method of claim **7**, wherein the pixel or plurality of pixels define an interface between the webpage and web browser functionality and wherein the user activity on the webpage comprises a cursor movement below, above, or across the interface value.

14. The method of claim **7**, wherein the cursor movement comprises cursor movement across the pixel or plurality of pixels.

15. The method of claim **7**, further comprising:

prior to displaying an advertisement unit on the webpage, allowing a time delay of a predetermined period of time to elapse; and

performing a second detection user activity on the webpage indicative of the user exiting the webpage prior to the user exiting the webpage after the time delay has elapsed.

16. The method of claim **7**, wherein displaying an advertisement unit on the webpage comprises:

populating a window with the one or more advertisements;

displaying the window over at least a portion of the webpage; and

shading the webpage so that the window is brighter in contrast than the webpage.

17. The method of claim 7, further comprising:

in conjunction with detecting user indicative of the user exiting the webpage prior to the user exiting the webpage, determining a level of engagement of the user on the webpage; and

if the level of engagement of the user meets or exceeds baseline criteria associated with a baseline level of engagement, classifying the user as engaged.

18. The method of claim 7, wherein the one or more advertisements comprises one or more of: (i) a link to an advertisement webpage to view information associated with the one or more advertisements; (ii) a text description associated with the one or more advertisements; (iii) a clickable video associated with the one or more advertisements; and (iv) a solicitation for a conversion.

19. The method of claim 18, wherein the one or more advertisements comprises a solicitation for providing user identification information.

20. A non-transitory computer program product encoded on a computer-readable storage medium comprising instructions for:

detecting a user accessing a webpage on a device comprising a display;

collecting data associated with the user;

setting a predetermined value, stored in a memory, that corresponds to a pixel or plurality of pixels on the webpage; and,

detecting activity of a user that indicates the user intends to initiate an exit command at a position on the display relative to the predetermined value before the user initiates an exit command.

21. The non-transitory computer program product of claim 20, wherein the computer program product further comprises instructions for displaying an advertisement unit on the webpage prior to the user initiating an exit command, the advertisement unit containing one or more advertisements based at least partially on the data associated with the user.

22. The non-transitory computer program product of claim 20, wherein the data associated with the user comprises one or more of: (i) user search criteria; (ii) user identification information; (iii) user preferences; (iv) user location; (v) browser settings; (vi) a browsing history associated with the user; (vii) user device characteristics; (viii) previous visit history; and (ix) referral history.

23. The non-transitory computer program product of claim 20, wherein collecting data associated with the user comprises obtaining one or more of: (i) the user search criteria on the webpage; (ii) login information associated with the user; (iii) a browsing history associated with the user; and (iv) an identifier associated with the user device.

24. The non-transitory computer program product of claim 20, wherein activity of a user that indicates the user intends to initiate an exit command comprises cursor movement at, below, above, or across the predetermined value.

25. The non-transitory computer program product of claim 24, wherein the cursor movement comprises a cursor movement below, above or across a pixel or set of pixels corresponding to an interface between the webpage and web browser functionality being used by a user to view the webpage.

26. The non-transitory computer program product of claim 20, wherein activity of a user that indicates the user intends to initiate an exit command is based at least partially on cursor movement of the user on the webpage and configuration of the user's web browsing software.

27. The non-transitory computer program product of claim 20, further comprising instructions for:

prior to displaying an advertisement unit on the webpage, allowing a time delay of a predetermined period of time to elapse; and

performing a second detection of exit behavior on the webpage after the time delay has elapsed but prior to the user initiating an exit command;

wherein the advertisement unit is displayed on the webpage prior to the user exiting the webpage if user activity indicating an intent to initiate an exit command is detected after the time delay has elapsed but prior to the user initiating an exit command.

28. The non-transitory computer program product of claim 20, wherein instructions for displaying an advertisement unit on the webpage comprise instructions for:

populating a window with the one or more advertisements;

displaying the window over at least a portion of the webpage; and

shading the webpage so that the window is brighter in contrast than the webpage.

29. The non-transitory computer program product of claim 20, further

comprising instructions for:

in conjunction with detecting user activity on the webpage, determining a level of engagement of the user on the webpage; and

if the level of engagement of the user meets or exceeds baseline criteria associated with a baseline level of engagement, classifying the user as engaged.

30. The non-transitory computer program product of claim 20, wherein each of the one or more advertisements in the advertisement unit comprises one or more of: (i) a link to an advertisement webpage to view information associated with the one or more advertisements; (ii) a text description associated with the one or more advertisements; and (iii) a clickable video associated with the one or more advertisements.

31. A system comprising a computer storage device that comprises the non-transitory computer program product of claim 20 and at least one processor.

32. A computer-implemented method of delivering an advertisement unit to a user of a device that accesses the internet, the method comprising:

in a system configured to host a webpage, the system comprising at least one processor and a memory,

detecting, by the at least one processor, a user accessing the webpage;

collecting, by the at least one processor, data, stored in the memory, associated with the user;

segmenting the display of the device, by the at least one processor into one or more coordinates;

detecting, by the at least one processor, user activity on the webpage indicative of the user exiting the webpage prior to the user exiting the webpage at a position on the display relative to the one or more coordinates; and

displaying an advertisement unit on the webpage prior to the user exiting the webpage.

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