

```
var ktop=[0,0,0,0,0];  
while(w.length>0)  
{  
    t = w.shift( );  
    if( t==to ) k++;  
    if(t!=to || w.length==0 )  
        {  
            for(j=0;j<5;j++)  
                {  
                    if(k>ktop[j]){  
                        this.top[j]=to; ktop[j]=k;break;}  
                    }  
                    k=1;  
                    to = t;  
                }  
            }  
        }  
    catch( e )  
    {  
        document.write(  
            "Exception"+e.description+"<br>" );  
    }  
}
```

While the present invention has been shown and described herein in what are considered to be the preferred embodiments thereof, illustrating the results and advantages over the prior art obtained through the present invention, the invention is not limited to those specific embodiments. Thus, the forms of the invention shown and described herein are to be taken as illustrative and other embodiments may be selected without departing from the spirit and scope of the present invention.

Claims (36)

Hide Dependent

What is claimed is:

1. A system comprising:

at least a first module associated with a first triggering area of an ad content page and a second module associated with a second triggering area of the ad content page and a correlator code configured to work in conjunction with a web browser which renders the ad content page;

the correlator code configured, in conjunction with the web browser, to:

determine that the first triggering area of the page is within a visible area of a viewer's browser window;

in response to determining that the first triggering area is within the visible area of the browser window, activate the first module of the page such that a first communication is sent to a server computing system;

determine that the second triggering area is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the second triggering area is within the predefined distance outside of the visible area of the browser window, activate the second module of the page such that a second communication is sent to a server computing system;

one or more server computing systems configured to:

receive the one or more communications initiated from one or more modules of the page in response to the one or more modules being activated by the correlator code; and

in response to receiving a communication initiated from the first module, select an advertisement to display on the page based at least in part on a plurality of bids from a plurality of bid users and identify a first selected bid;

serve a first ad content designated by the first selected bid user to the browser;

in response to receiving a communication initiated from the second module, select an advertisement to display on the page based at least in part on a plurality of auction bids from a plurality of bid users and identify a second selected bid;

serve a second ad content designated by the second selected bid user to the browser;

wherein the served first ad content is rendered in a first predefined area associated with the first triggering area and the second ad content is rendered in a second predefined area associated with the second triggering area.

2. The system of claim 1, wherein after the served ad content rendered in one of the predefined areas has been within the visible area of the browser a predetermined time, replacement ad content is downloaded to the browser and rendered in that one of the predefined areas.

3. The system of claim 1, wherein after the served ad content rendered in one of the predefined areas has been within the visible area of the browser for a pre-determined time, a replacement selection auction

is conducted, a replacement bid is selected, and new ad content designated by the selected replacement bid is rendered in that one of the predefined areas.

4. The system of claim 1, wherein after the served ad content rendered in one of the predefined areas has been with the visible area of the browser and then scrolled outside of the visible area of the browser, substitution ad content is downloaded to the browser from the one or more server computing systems, and when the predefined area is scrolled back into the visible area of the browser the substitution ad content is displayed in that one of the predefined areas.

5. The system of claim 4, wherein the substitution ad content is selected by the one or more server computing systems at least in part as a result of an auction process at the one or more server computing systems.

6. A system comprising:

instructions in the form of code operating on a computing device in association with a browser and an ad content page;

the instructions configured, in conjunction with the browser, to direct the computing device to:

determine that a first triggering area of the page is within a visible area of a browser window;

in response to determining that the first triggering area is within the visible area of the browser window, send a first communication to a server;

determine that a second triggering area is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the second triggering area is within the predefined distance outside of the visible area of the browser window, send a second communication to a server;

one or more server computing systems configured to:

receive the one or more communications from the computing device; and

in response to receiving the first communication from the computing device, select an advertisement to display on the page based at least in part on a plurality of bids from a plurality of advertising bidders and identify a first selected advertiser bidder;

serve a first ad content designated by the first selected advertiser bidder to the browser;

in response to receiving the second communication from the computing device, select an advertisement to display on the page based at least in part on a plurality of auction bids from a plurality of advertising bidders, and identify a second selected advertiser bidder;

serve a second ad content designated by the second selected advertiser bidder to the browser;

wherein the first served ad content is rendered in a first predefined area associated with the first triggering area and the second ad content is rendered in a second predefined area associated with the second triggering area.

7. The system of claim 6, wherein after the served ad content rendered in one of the predefined areas has been within the visible area of the browser a predetermined time, replacement ad content is downloaded to the browser and rendered in that one of the predefined areas.

8. The system of claim 6, wherein after the ad content rendered in one of the predefined areas has been within the visible area of the browser for a pre-determined time, a replacement selection auction is conducted, a replacement hid is selected, and new ad content designated by the selected replacement bid is rendered in that one of the predefined areas.

9. The system of claim 6, wherein after the served ad content rendered in one of the predefined areas has been within and then scrolled outside of the visible area of the browser, substitution ad content is downloaded to the computing device from the server computing systems, and when the predefined area is scrolled back into the visible area of the browser the substitution ad content is displayed in that one of the predefined areas.

10. The system of claim 9, wherein the substitution ad content is selected by one or more server computing systems at least in part as a result of an auction process at one or more of the server computing systems.

11. A system comprising:

instructions in the form of code operating on a computing device in association with a browser and an ad content page;

the instructions and the browser configured to direct the computing device to:

determine that a first triggering area of the ad content page is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the first triggering area is within the predefined distance outside of the visible area of the browser window, send a first communication to one or more server systems;

one or more server computing systems configured to:

receive the first communication from the computing device; and

in response to receiving the communication from the computing device, select an advertisement to display on the page based at least in part on a plurality of bids from a plurality of advertising bidders and identify a selected advertiser bidder;

serve first ad content designated by the selected advertiser bidder to the computing device; and

wherein the served first ad content is rendered in a first pre-defined area on the ad content page associated with the first triggering area.

12. The system of claim 11 wherein the first pre-defined area comprises the first triggering area.

13. The system of claim 11, wherein after a pre-determined time that the served first ad content rendered in the first predefined area has been in view, new content is downloaded to the browser and rendered as replacement content in the first predefined area.

14. The system of claim 11, wherein after the served first ad content rendered in the first predefined area has been in view for a pre-determined time, a replacement selection auction is conducted, a replacement

bid is selected, and new ad content designated by the selected replacement bid is rendered in the first predefined area.

15. The system of claim 11, wherein after the served first ad content rendered in the first predefined area has been in view and then scrolled out of view a substitution auction is conducted, a substitution bid is selected, and new ad content designated by the selected substitution bid is rendered in the first predefined area when the first predefined area is scrolled back into view.

16. The system of claim 11, wherein

the instructions and browser direct the computing device to determine:

that a second triggering area is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the second triggering area is within the predefined distance outside of the visible area of the browser window, send a second communication to one or more server computing systems;

at least one or more server computing systems configured to:

in response to receiving the second communication from the computing device, select a second advertisement to display on the webpage based at least in part on a plurality of bids from a plurality of advertising bidders and identify a second selected advertiser bidder;

serve ad content designated by the second selected advertiser bidder to the computing device; and

wherein the second selected served ad content is rendered in a second pre-defined area associated with the second triggering area.

17. The system of claim 16, wherein the second triggering area is determined to be within a predetermined distance outside the visible area after the first triggering area is determined to be within a predetermined distance outside the visible area.

18. The system of claim 17, wherein the selection of the second advertisement occurs after the occurrence of the selection of the first advertisement.

19. The system of claim 16, wherein:

the instructions and the browser direct the computing device to:

determine that a third triggering area is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the third triggering area is within the predefined distance outside of the visible area of the browser window, send a third communication to one or more server computing systems;

at least one or more server computing systems configured to:

in response to receiving the third communication from the computing device select a third advertisement to display on the webpage based at least in part on a plurality of bids from a plurality of advertising bidders and identify a third selected advertiser bidder; and

serve a third ad content designated by the third selected advertiser bidder to the computing device; and
wherein the third ad content is rendered in a third pre-defined area associated with the third triggering area.

20. The system of claim 16, wherein after the served content rendered in a particular predefined area has been in view for a pre-determined time, a replacement selection auction is conducted, a replacement bid is selected, and new content designated by the selected replacement bid is rendered in the particular predefined area.

21. The system of claim 20, wherein after the served replacement content rendered in the particular predefined area has been in view for a second pre-determined time, a second replacement selection auction is conducted, a second replacement bid is selected, and new content designated by the second selected replacement bid is rendered in the particular predefined area.

22. The system of claim 16, wherein after the served ad content rendered in a particular predefined area has been in view and then scrolled out of view, a substitution auction is conducted at one or more server computing systems, a substitution bid is selected, and new content designated by the selected substitution bid is rendered in the particular predefined area.

23. A method comprising:

designating, by one or more computing systems, a first predetermined area on an ad content page;

providing that, in response to a request, the ad content page with a designation of the predefined area and associated instructions in the form of code are served to a remote computing device operating a browser and displaying a browser window;

providing that the remote computing device determines whether the predefined area is within a predefined distance outside a visible area of the browser window and that in at least partial response to such determination a first ad content is served to the remote computing device and rendered in the first predetermined area; and

wherein the instructions are configured, in conjunction with the browser to direct the computing device to:

periodically determine whether the first predetermined area is in view within the visible area of the browser window on the remote computing device; and

in response to determining that the first predetermined area has been in view within the visible area of the browser window for a predefined time, send a communication to one or more server computing systems;

providing that the one or more server computing systems are configured to:

receive the communication from the computing device; and

in response to receiving the communication from the remote computing device, select a replacement advertisement to display on the page;

serve the replacement advertisement to the remote computing device; and

the method further providing that the instructions in conjunction with the browser cause that the replacement advertisement is rendered in the first predetermined area.

24. The method of claim 23, wherein:

the replacement advertisement is selected at least partially as a result of a replacement auction conducted on the one or more server computing systems in at least partial consequence of receiving the communication from the computing device.

25. The method of claim 24, wherein:

the replacement auction is conducted in real time between the time the communication is sent from the computing device and the time that the replacement advertisement is selected.

26. A method comprising:

by one or more computing systems, designating a first triggering area on a web content page,

providing that, in response to a request from a remote viewer computing device, the web content page and a designation of the first triggering area are served to the remote viewer computing device;

providing that instructions in the form of code are served to the remote viewer computing device, the instructions configured, in conjunction with the browser, to direct the remote viewer computing device to:

determine that the first triggering area is within a predefined distance outside of a visible area of the browser window; and

in response to determining that the first triggering area is within the predefined distance outside of the visible area of the browser window, send a communication to one or more server computing systems;

after sending the communication, receive first ad content and render that first ad content in a predefined area of the web content page associated with the first triggering area and wherein the first pre-defined area comprises the first triggering area.

27. The method of claim 26, further including providing that the instructions in conjunction with the browser:

track the time that ad content is within the visible area of the browser window, and

after the ad content has been within the visible area of the browser window for a predetermined time send a second communication to one or more servers.

28. The method of claim 26, further comprising

providing that after the first ad content rendered in the first predefined area has been in view on the viewer computing device a pre-determined time, a second ad content is received at the viewer computing device and rendered in the first predefined area.

29. The method of claim 26, further comprising:

providing that after the first ad content rendered in the first predefined area has been in view on the viewer computing device for a pre-determined time, an auction is conducted on one or more computer servers, and replacement ad content is selected at least in part on a plurality of bids at the auction, and the selected replacement ad content is served to the viewer computing device to be rendered in the first predefined area.

30. The method of claim 29, further comprising:

providing that the auction is initiated as a result of the one or more server computing systems receiving a communication from the remote viewer computing device, the communication being generated after the first predefined area has been in view for a predetermined time.

31. The method of claim 26, further comprising:

providing that after the first received ad content rendered in the first predefined area has been in view on the viewer computing device, then scrolled out of view, a substitution auction is conducted on one or more computer servers, and substitution ad content is selected at least in part on a plurality of bids at the substitution auction, and the selected substitution ad content is served to the viewer computing device to be rendered in the first predefined area when the first predefined area is scrolled back into view.

32. The method of claim 26, further comprising:

providing that the computing device determines that a second triggering area is within a predefined distance outside of the visible area of the browser window; and

in response to determining that the second triggering area is within the predefined distance outside of the visible area of the browser window, send a second communication to one or more server computing systems;

after sending the second communication, receive a second ad content and render that second ad content in a predefined area of the web content page associated with the second triggering area.

33. A method comprising:

designating a first predetermined area on a web content page for rendering of ad content at a remote viewer computing device,

providing that, in response to a request for the web content page from a remote viewer device, the web content page with a designation of the first predetermined area is served to the remote viewer computing device with instructions in the form of code to operate on the remote viewer computing device in association with a browser

providing that the instructions in conjunction with the browser direct the remote viewer computing device to determine whether the first predetermined area is within a predefined distance outside a visible window of the browser in which at least a portion of the web content page is rendered;

providing that a first ad content is served to the remote viewer computing device in at least partial consequence of the determination that the first predetermined area is within the predefined distance outside of the visible window of the browser;

providing that the first ad content is rendered in the first predetermined area of the web content page.

34. The method of claim 33, further comprising:

providing that the instructions are configured to, in conjunction with the browser, direct the computing device to:

track the time that the first ad content rendered in the predetermined area of the web content page has been in view within the visible window of the browser; and

in at least partial response to determining that the first predetermined area has been in view within the visible window of the browser for a pre-determined time, send a communication to one or more servers;

providing that after the one or more servers receive the communication, replacement ad content is selected at the one or more servers and the replacement ad content is served to the remote viewer computing device with identification such that the replacement ad content is rendered on the remote viewer computing device in the first predetermined area.

35. The method of claim 34, further comprising:

providing that the replacement ad content is selected at least partially as a result of a real time auction conducted at the one or more servers after receiving the communication at the one or more servers and before the replacement ad content is rendered on the remote viewer computing device.

36. The method of claim 26, further comprising:

providing that after the first received ad content rendered in the first predefined area has been in view on the viewer computing device, then scrolled out of view, substitution ad content is selected at one or more server computers, and the selected substitution ad content is served to the viewer computing device to be rendered in the first predefined area when the first predefined area is scrolled back into view.