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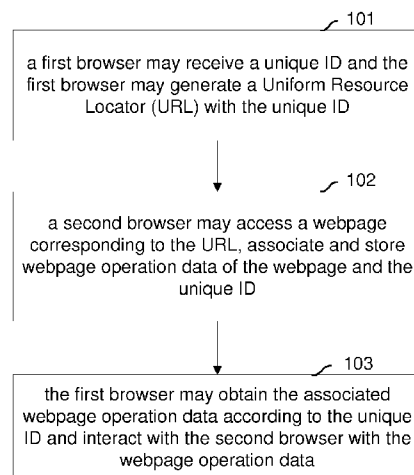


Fig. 1

(57) Abstract: Examples of the present disclosure may provide an interaction method and device between browsers and a browser. The method may include: receiving a unique Identification (ID); generating a Uniform Resource Locator (URL) with the unique ID; obtaining webpage operation data of a webpage corresponding to the URL stored by a browser according to the unique ID; and in-teracting with the browser with the webpage operation data. The interaction efficiency between the browsers may be enhanced with examples of the present disclosure.



INTERACTION METHOD AND DEVICE BETWEEN BROWSERS AND BROWSER

This application claims the benefit of priority from Chinese Patent Application, No. 201310118771.6, entitled "Interaction method, device and system between
5 browsers and a browser" and filed on April 08, 2013, the entire content of which is hereby incorporated by reference.

FIELD OF THE INVENTION

【0001】 The present disclosure relates to a field of information processing technology, and more particularly, to an interaction method and device between
10 browsers and a browser.

BACKGROUND

【0002】 With rapid development of computer technologies and network technologies, the Internet and Instant Messaging (IM) technologies may play a more and more important role in people's daily life, study and work. Furthermore,
15 with the development of the mobile Internet, the Internet is developing to mobility. In an information era, various information devices may be developed. The information devices may include a fixed-line telephone and a mobile phone for voice transmission, a server and a Personal Computer (PC) for sharing and processing information and resources, and various televisions for displaying
20 video data, etc. These information devices may be developed in a specific field for solving actual demands. With the fusion of Consumer electronics, Computer and Communication (3C), people may pay more and more attention to study of comprehensive utilization of the information devices of various fields to serve people better by adequately utilizing existing resource devices.

25 【0003】 The browser may be software which may display content of Hyper Text Markup Language (HTML) files of a webpage server or a file system and allow a user to interact with these files. The browser may interact with the webpage server and obtain a webpage via the Hyper Text Transfer Protocol (HTTP) protocol. A webpage may correspond to a Uniform Resource Locator

(URL) and a webpage may be found with the URL. Generally, a file format may be the HTML and may be recorded in the HTTP protocol by Multipurpose Internet Mail Extensions (MIME).

SUMMARY

【0004】 An example of the present disclosure may provide an interaction method between browsers, to enhance interaction efficiency of the browsers.

5 【0005】 Another example of the present disclosure may provide an interaction device between browsers, to enhance interaction efficiency of the browsers.

【0006】 Another example of the present disclosure may provide a browser, to enhance interaction efficiency of the browsers.

【0007】 The technical scheme provided by examples of the present disclosure may be as follows.

10 【0008】 An interaction method between browsers may include:

receiving a unique Identification (ID);

generating a Uniform Resource Locator (URL) with the unique ID;

obtaining webpage operation data of a webpage corresponding to the URL stored by a browser according to the unique ID; and

15 interacting with the browser with the webpage operation data.

【0009】 An interaction device between browsers may include:

a unique ID receiving unit, to receive a unique ID and generate a Uniform Resource Locator (URL) with the unique ID;

20 an operation data obtaining unit, to obtain webpage operation data of a webpage corresponding to the URL stored by a browser according to the unique ID; and

an interaction operation unit, to interact with the browser with the webpage operation data.

【0010】 A browser may include:

25 a request sending unit, to receive a first unique ID, generate a first URL with the first unique ID and send the first URL to a first browser;

a data storing unit, to access a second webpage corresponding to a second URL provided by the first browser, associate and store second webpage operation data of the second webpage and a second unique ID used for
30 generating the second URL; and

an interaction unit, to obtain first webpage operation data of a first webpage corresponding to the first URL from the first browser according to the first unique ID and interact with the first browser with the first webpage operation data.

【0011】 In view of the above technical scheme, according to examples of the present disclosure, a unique ID may be received. The URL may be generated with the unique ID. The webpage operation data of the webpage corresponding to the URL stored by the browser may be obtained according to the unique ID. An interaction operation with the browser may be performed with the webpage operation data. It can be seen that with examples of the present disclosure, the interaction between the browsers may be implemented without installing the Flash plug-in in the browsers or requiring the browsers to support the html5 socket technology, which may enhance interaction efficiency between the browsers.

BRIEF DESCRIPTION OF THE DRAWINGS

【0012】 Figure 1 is a flow chart illustrating an interaction method between browsers in accordance with an example of the present disclosure;

【0013】 Figure 2 is a schematic diagram illustrating structure of an interaction device between browsers in accordance with an example of the present disclosure;

【0014】 Figure 3 is a schematic diagram illustrating an interaction system between browsers in accordance with an example of the present disclosure; and

【0015】 Figure 4 is a schematic diagram illustrating structure of a browser in accordance with an example of the present disclosure;

【0016】 Figure 5 is a schematic diagram illustrating structure of another interactive device between browsers in accordance with an example of the present disclosure; and

【0017】 Figure 6 is a schematic diagram illustrating structure of another browser in accordance with an example of the present disclosure.

DETAILED DESCRIPTION

【0018】 According to an example, the browsers may interact with each other

with a Socket mode. A real-time communication channel may be established between a browser of a mobile terminal device and a browser of a Personal Computer (PC) with the Socket mode, by which the interaction between different terminal devices may be implemented.

5 **【0019】** However, in order to utilize the Socket technology, the Socket technology should be supported by the browser of the mobile terminal device and the browser of the PC of the user and a Flash plug-in should be installed on the browser of the mobile terminal device and the browser of the PC of the user. As for a browser which cannot install the Flash plug-in and may not support the
10 Socket technology, the interaction between browsers may not be implemented with the Socket technology. Therefore, an interaction technology threshold between the browsers may be enhanced with the Socket technology and interaction efficiency between the browsers may be reduced.

15 **【0020】** For simplicity and illustrative purposes, the present disclosure is described by referring mainly to example(s) thereof. In the following description, numerous specific details are set forth in order to provide a thorough understanding of the present disclosure. It will be readily apparent however, that the present disclosure may be practiced without limitation to these specific details. In other instances, some methods and structures have not been described in
20 detail so as not to unnecessarily obscure the present disclosure. As used throughout the present disclosure, the term “includes” means includes but not limited to, the term “including” means including but not limited to. The term “based on” means based at least in part on. In addition, the terms “a” and “an” are intended to denote at least one of a particular element.

25 **【0021】** Figure 1 is a flow chart illustrating an interaction method between browsers in accordance with an example of the present disclosure.

【0022】 Referring to figure 1, the method may include following blocks.

【0023】 In block 101, a first browser may receive a unique ID and the first browser may generate a Uniform Resource Locator (URL) with the unique ID.

30 **【0024】** First of all, an initial display page may be opened by the first browser and the initial display page may send a unique ID generation request to a server

in the background. The server may receive the unique ID generation request, generate the unique ID and send the unique ID to the initial display page of the first browser. The initial display page may generate the URL with the unique ID.

5 **【0025】** When there may be multiple browsers, multiple unique IDs may be generated and a corresponding relationship between browsers may be determined according to the unique IDs. The unique ID may be generated with multiple methods. For instance, the unique ID may be generated with pseudorandom number. The method for generating the unique ID may include but not be limited to following methods.

10 **【0026】** The first one is a direct method. The unique ID may be generated according to physical meaning of a distribution function.

15 **【0027】** The second method may be an inversion method. It may be assumed that U may be evenly distributed in $[0, 1]$. $X=F^{-1}(U)$. A cumulative distribution function (CDF) of X may be F . This method is simple, easy programming and wide applicability.

20 **【0028】** The third method is an acceptance-rejection method. It may be assumed that a Probability Density Function (PDF) which is wished to be generated may be f . First, a random function generator and a constant c , in which the PDF may be g , may be found and $f(x) \leq cg(x)$. Then, the $f(x) \leq cg(x)$ may be solved with the acceptance-rejection method. Since a wished random number may be obtained with an average of c operations, the value of c should be as small as possible.

25 **【0029】** The examples for generating the unique ID may be listed above. It may be well known by an ordinary skilled in the art of the present disclosure that examples of the present disclosure may not be limited to the above examples, which may be given for illustration.

30 **【0030】** According to an example, a session ID or a Memcache ID may be generated.

30 **【0031】** The Session may be user data stored in the server as a text file and searching may be made with the session ID. The Memcache may be a

high-performance distributed memory object cache system and may be used for storing data of various formats, such as, image, video, file and searching result of a database. The data may be written into the memory and read from the memory. Therefore, reading speed of the data may be enhanced and the searching may be performed with the Memcache ID.

【0032】 In block 102, a second browser may access a webpage corresponding to the URL, associate and store webpage operation data of the webpage and the unique ID.

【0033】 The second browser may access the webpage corresponding to the URL, store the webpage operation data of the webpage, associate the webpage operation data and the unique ID, encapsulate and send the associated webpage operation data and the unique ID to the server. The webpage operation data of the webpage may include a webpage operation action command and a timestamp of the webpage operation action command.

【0034】 For instance, the encapsulated data sent to the server may include:

【0035】 (a) the webpage operation action command, i.e. operation actions of the user after the user browses the webpage with the second browser (in a format of agreed string);

【0036】 (b) the unique ID which may be a session ID or an ID of a Memcache key value; and

【0037】 (c) the timestamp which may be occurring time of the operation action. The unit of the occurring time may be ms or us.

【0038】 In block 103, the first browser may obtain the associated webpage operation data according to the unique ID and interact with the second browser with the webpage operation data.

【0039】 According to an example, the first browser may search for the webpage operation data corresponding to the unique ID according to a preset reading time interval from the server.

【0040】 According to an example, the server may push the webpage operation data corresponding to the unique ID to the first browser according to a

preset pushing time interval.

5 **【0041】** The first browser may obtain the associated webpage operation data and perform the interaction operation with the webpage operation data. For instance, the first browser may perform the interaction operation such as play a game or perform the activity according to the webpage operation action command in the webpage operation data.

10 **【0042】** According to an example, the method may further include generating by the first browser a two-dimension image including the URL in block 101. The method for accessing the webpage corresponding to the URL with the second browser in block 102 may include:

15 **【0043】** detecting a two-dimension code in a two-dimension image to obtain a two-dimension outline, identifying the two-dimension code, from which the detected two-dimension outline is detected, obtaining the URL in the two-dimension code and accessing the webpage corresponding to the URL with the second browser.

20 **【0044】** The first browser may process the two-dimension image with various scanning applications. After the first browser scans the two-dimension code with the scanning applications, a camera video frame image may be obtained. The camera video frame image may be image data obtained from each frame of the video obtained by the camera. The scanning applications of the first browser may convert the camera video frame image into a gray image and convert the gray image into a binary image. Horizontal anchor feature scanning and vertical anchor feature scanning may be performed on the binary image to obtain a horizontal anchor feature line and a vertical anchor feature line. An intersection of the horizontal anchor feature line and the vertical anchor feature line may be computed to obtain an anchor position of the two-dimension code. The two-dimension code outline may be obtained according to the anchor position of the two-dimension code.

30 **【0045】** If a detection result shows that there is no two-dimension code in the camera video frame image, down-sample processing may be performed on the camera video frame image and the camera video frame image after the

down-sample processing may be detected again to determine whether there is a two-dimension code.

5 **【0046】** According to an example, the first browser may obtain all of history webpage operation data according to the unique ID and obtain newest webpage operation data from all of the history webpage operation data according to a timestamp. The method for performing the interaction operation with the webpage operation data may include performing the interaction operation with the newest webpage operation data.

10 **【0047】** It may be seen that in examples of the present disclosure, the data transferring of the interaction operation may be implemented with the session or Memcache technology. If the user opens the URL (via the two-dimension code) generated in the browser of the PC with the browser of the mobile terminal device (when there are multiple users, multiple mobile terminal device may participate in the operation), the interaction operation, such as the game and activity may be performed.

15 **【0048】** In the reading and writing process of the session data or the Memcache data, the pressure of the server may be less than that of the database. The example of the present disclosure may also solve a compatibility problem in the process of the project development. Especially, each interaction operation may be performed faster and better in a rich media advertisement activity and an advertisement activity.

20 **【0049】** Examples of the present disclosure may be described hereinafter taking the interaction between the mobile terminal device and the PC for example.

25 **【0050】** At present, the smartphone and the mobile network may be widely used. In some Internet activities, games and advertisements, the interaction operation between the mobile terminal device and the PC may be implemented with examples of the present disclosure. The browser may not be required to install the Flash plug-in or support the html5 socket technology.

30 **【0051】** According to an example, four interaction interfaces may be designed to implement the interaction between the browser of the mobile terminal device

and the browser of the PC.

【0052】 The interaction interfaces may be: a display page of the PC, a page for displaying transferring data content (the data may be read by the display page of the PC), the display page of the mobile terminal device and a page for changing the transferring data content (receiving the data sent from the display page of the mobile terminal device).

【0053】 The display page of the PC may be a foreground page of the PC. The display page of the mobile terminal device may be the foreground page of the mobile terminal device. The page for displaying the transferring data content and the page for changing the transferring data content may be background pages of the server.

【0054】 If the user opens the display page of the PC with the browser of the PC, the server may generate one (or multiple) session ID or the ID of the Memcache key value and send the ID to the display page of the PC, so that the ID may be taken as the key for reading the data in the page for displaying the transferring data content. The ID may be the unique authentication value in the whole interaction process. The PC device may generate the URL with the ID.

【0055】 The webpage corresponding to the URL may be accessed with the browser of the mobile terminal device, associate and store the webpage operation data of the webpage and the ID. The user may access the display page of the mobile terminal device in the mobile terminal device, obtain the unique key (i.e. the ID) of this interaction operation with parameters in the URL and send the interaction data to the page for changing the transferring data content under the trigger of the user to change the content stored in the server.

【0056】 The browser of the PC may obtain the associated webpage operation data according to the unique ID and perform the interaction operation with the webpage interaction data.

【0057】 A front-end presentation program of the display page of the PC may be implemented with the flash technology or js technology, etc. The display page of the PC also may implement a cyclical execution function. That is, the interaction data may be cyclically read from the page for displaying the

transferring data content according to preset reading time (such as 10 ms, which may be changed as needed). The interface data may be updated when the user accesses the display page of the mobile terminal device with the browser of the mobile terminal device. In a process that the display page of the PC reads the interaction data, whether the interaction data is newest data may be determined according to the ID and timestamp, by which logical determination of the program may be performed.

【0058】 The interaction data content may include: (a) an action which is an action (in a format of a string) performed by the user on the mobile terminal device; (b) the session ID or ID of the Memcache key value and (c) a timestamp occurring time of the action, the unit of which is ms or us.

【0059】 With the examples of the present disclosure, the interaction operation between the mobile terminal device and the PC may be implemented with small delay.

【0060】 On the basis of the above detailed analysis, an example of the preset disclosure may further provide an interaction device between browsers.

【0061】 Figure 2 is a schematic diagram illustrating structure of an interaction device between browsers in accordance with an example of the present disclosure.

【0062】 Referring to figure 2, the interaction device may include a unique ID receiving unit 201, an operation data obtaining unit 202 and an interaction operation unit 203.

【0063】 The unique ID receiving unit 201 may be to receive a unique ID and generate a Uniform Resource Locator (URL) with the unique ID.

【0064】 The operation data obtaining unit 202 may be to obtain webpage operation data of a webpage corresponding to the URL stored by a browser according to the unique ID.

【0065】 The interaction operation unit 203 may be to interact with the browser with the webpage operation data.

【0066】 According to an example, the unique ID receiving unit 201 may be

further to generate a two-dimension code image including the URL.

5 **【0067】** The operation data obtaining unit 202 may be further to detect a two-dimension code in the two-dimension code image to obtain a two-dimension outline and identify the two-dimension code, from which the two-dimension outline may be obtained to obtain the URL in the two-dimension.

10 **【0068】** According to an example, the operation data obtaining unit 202 may be further to obtain a webpage operation action command and a timestamp of the webpage operation action command, associate and store the unique ID, the webpage operation action command and the timestamp of the webpage operation action command.

15 **【0069】** According to an example of the present disclosure, the operation data obtaining unit 202 may be further to search for the webpage operation data corresponding to the unique ID according to a preset reading time interval, or receive the pushed webpage operation data corresponding to the unique ID according to a preset pushing time interval.

【0070】 On the basis of the above detailed analysis, an example of the present disclosure may further provide an interaction system between browsers.

20 **【0071】** Figure 3 may be a schematic diagram illustrating an interaction system between browsers in accordance with an example of the present disclosure.

【0072】 As shown in figure 3, the system may include a first browser terminal device 301, a second browser terminal device 302 and a server 303.

【0073】 The server 303 may be to generate a unique ID and send the unique ID to the first browser terminal device 301.

25 **【0074】** The first browser terminal device 301 may be to generate a URL with the unique ID.

【0075】 The second browser terminal device 302 may be to access a webpage corresponding to the URL, associate and store webpage operation data of the webpage and the unique ID in the server 303.

30 **【0076】** The first browser terminal device 301 may be further to obtain the

webpage operation data according to the unique ID from the server 303 and interact with the second browser terminal device 302 with the webpage operation data.

5 **【0077】** According to an example, the first browser terminal device 301 may be further to generate a two-dimension code image including the URL.

10 **【0078】** The second browser terminal device 302 may be further to detect a two-dimension code in the two-dimension code image to obtain a two-dimension outline, identify the two-dimension code, from which the two-dimension outline may be obtained to obtain the URL in the two-dimension code and access the webpage corresponding to the URL with the second browser.

15 **【0079】** According to an example, the second browser terminal device 302 may be further to obtain a webpage operation action command and a timestamp of the webpage operation action command, associate and store the unique ID, the webpage operation action command and the timestamp of the webpage operation action command.

20 **【0080】** According to an example of the present disclosure, the first browser terminal device 301 may be further to search for the webpage operation data corresponding to the unique ID according to a preset reading time interval from the server 303 or to receive the webpage operation data corresponding to the unique ID from the server 303. The server 303 may push the webpage operation data according to a preset pushing time interval.

25 **【0081】** The first browser terminal device may be a PC including a browser. The second browser terminal device may be an intelligent terminal device including the browser. For instance, the intelligent terminal device may be a function mobile phone, a smart phone, a handheld computer, a tablet PC and a Personal Digital Assistant (PDA), etc.

30 **【0082】** The terminal devices may be described in detail in the above examples. It may be well known to an ordinary skilled in the art of the present disclosure that the above examples may be listed for describing the present disclosure but not for limiting the protection scope of the examples of the present disclosure.

【0083】 On the basis of the above analysis, an example of the present disclosure may further provide a browser.

【0084】 Figure 4 may be a schematic diagram illustrating a browser in accordance with an example of the present disclosure.

5 【0085】 Referring to figure 4, the browser may include a request sending unit 401, a data storing unit 402 and an interaction unit 403.

【0086】 The request sending unit 401 may be to receive a first unique ID, generate a first URL with the first unique ID and send the first URL to a first browser.

10 【0087】 The data storing unit 402 may be to access a second webpage corresponding to a second URL provided by the first browser, associate and store second webpage operation data of the second webpage and a second unique ID used for generating the second URL.

15 【0088】 The interaction unit 403 may be to obtain first webpage operation data of a first webpage corresponding to the first URL from the first browser according to the first unique ID and interact with the first browser with the first webpage operation data.

20 【0089】 According to an example, the interaction unit 403 may be further to search for the first webpage operation data corresponding to the first unique ID according to a preset reading time interval from the server or to receive the first webpage operation data corresponding to the first unique ID from the server. The server may push the first webpage operation data according to a preset pushing time interval.

25 【0090】 Figure 5 is a schematic diagram illustrating structure of another interactive device between browsers in accordance with an example of the present disclosure.

【0091】 The device may include a memory 501 and a processor 502.

【0092】 The memory 501 may be to store a unique ID receiving instruction, an operation data obtaining instruction and an interaction operation instruction.

30 【0093】 The processor 502 may communicate with the memory 501 and

execute the unique ID receiving instruction, operation data obtaining instruction and interaction operation instruction to respectively execute operations of the above unique ID receiving unit 201, operation data obtaining unit 202 and interaction operation unit 203.

5 **【0094】** Figure 6 is a schematic diagram illustrating structure of another browser in accordance with an example of the present disclosure.

【0095】 The browser may include a memory 601 and a processor 602.

【0096】 The memory 601 may store a request sending instruction, a data storing instruction and an interaction instruction.

10 **【0097】** The processor 602 may communicate with the memory 601 and execute the request sending instruction, data storing instruction and interaction instruction to respectively execute operations of the above request sending unit 401, data storing unit 402 and interaction unit 403.

【0098】 The browsers in the examples of the present disclosure may include
15 an Internet Explorer, Firefox of Mozilla, Safari of Apple, Opera, Google Chrome and GreenBrowser.

【0099】 Some common browsers may be described above in detail. It may be known to an ordinary skilled in the art of the present disclosure that examples of the present disclosure may not be limited to the above browsers and may be any
20 App which may display the webpage server or a file in a file system and allow the user to interact with the file. The App may be each common browser and may be any application with a webpage browsing function.

【00100】 The interaction method between browsers provided by examples of the present disclosure may be implemented in various modes. For instance, the
25 interaction method between browsers may be programmed into a plug-in program installed in the browser according to a standard application program interface, or may be encapsulated into an application, so that users may download the application. If the interaction method between browsers is programmed into the program, the interaction method may be implemented with
30 multiple plug-in formats, such as ocx, dll and cab. The interaction method between the browsers provided by examples of the present disclosure also may

be implemented with a Flash plug-in, a RealPlayer plug-in, a Multimedia Message Service (MMS) plug-in, MI staff plug-in and an ActiveX plug-in, etc.

【00101】 The interaction method between the browsers provided by examples of the present disclosure may be stored in various storage mediums in a format of instructions or an instruction aggregation. The storage mediums may include
5 but may not be limited to a floppy, a Compact Disc (CD), Digital Versatile Disc (DVD), hardware, a flash memory, a Universal Serial Bus (USB) flash disk, a Compact Flash (CF) card, a Secure Digital (SD) memory card, a Multimedia Card (MMC), a Smart Media (SM) card, a Memory Stick and an Extreme Digital (xD)
10 picture card, etc.

【00102】 Furthermore, the interaction method between the browsers provided by examples of the present disclosure may be applied to a storage medium based on a Nand flash, such as the USB flash disk, the CF card, the SD memory card, the Secure Digital High Capacity (SDHC) card, the MMC card, the SM card,
15 the Memory Stick and the xD picture card, etc.

【00103】 In view of the above, according to examples of the present disclosure, a unique ID may be generated and the unique ID may be sent to the first browser. The first browser may generate the URL with the unique ID. The webpage corresponding to the URL may be accessed with the second browser. The
20 webpage operation data of the webpage and the unique ID may be associated and stored. The first browser may obtain the associated webpage operation data according to the unique ID and execute the interaction operation with the webpage operation data. It can be seen that with examples of the present disclosure, the interaction between the browsers may be implemented without
25 installing the Flash plug-in in the browser or requiring the browser to support the html5 socket technology, which may enhance interaction efficiency between the browsers.

【00104】 What has been described and illustrated herein are examples of the disclosure along with some variations. The terms, descriptions and figures used
30 herein are set forth by way of illustration only and are not meant as limitations. Many variations are possible within the scope of the disclosure, which is intended to be defined by the following claims -- and their equivalents -- in which all terms

are meant in their broadest reasonable sense unless otherwise indicated.

WHAT IS CLAIMED IS:

1. An interaction method between browsers, comprising:
receiving a unique Identification (ID);
generating a Uniform Resource Locator (URL) with the unique ID;
5 obtaining webpage operation data of a webpage corresponding to the URL
stored by a browser according to the unique ID; and
interacting with the browser with the webpage operation data.
2. The interaction method between browsers according to claim 1, wherein
10 obtaining the webpage operation data of the webpage corresponding to the URL
stored by the browser according to the unique ID comprises:
searching for the webpage operation data corresponding to the unique ID
according to a preset reading time interval; or
receiving the pushed webpage operation data corresponding to the unique
15 ID according to a preset pushing time interval.
3. The interaction method according to claim 1 or 2, wherein obtaining the
webpage operation data of the webpage corresponding to the URL stored by the
browser according to the unique ID comprises:
20 obtaining all history webpage operation data according to the unique ID and
obtaining latest webpage operation data from all the history webpage operation
data according to a timestamp;
interacting with the browser with the webpage operation data comprises:
interacting with the browser with the latest webpage operation data.
25
4. An interaction device between browsers, comprising:
a unique ID receiving unit, to receive a unique ID and generate a Uniform
Resource Locator (URL) with the unique ID;
an operation data obtaining unit, to obtain webpage operation data of a
30 webpage corresponding to the URL stored by a browser according to the unique
ID; and
an interaction operation unit, to interact with the browser with the webpage

operation data.

5 5. The interaction device between browsers according to claim 4, wherein
the operation data obtaining unit is further to search for the webpage
operation data corresponding to the unique ID according to a preset reading time
interval, or receive the pushed webpage operation data corresponding to the
unique ID according to a preset pushing time interval.

10 6. The interaction device between browsers according to claim 4 or 5,
wherein
the operation data obtaining unit is further to obtain all history webpage
operation data according to the unique ID and obtain the latest webpage
operation data from all the history webpage operation data according to a
timestamp; and
15 the interaction operation unit is further to interact with the browser with the
latest webpage operation data.

7. A browser, comprising:
a request sending unit, to receive a first unique ID, generate a first URL with
20 the first unique ID and send the first URL to a first browser;
a data storing unit, to access a second webpage corresponding to a second
URL provided by the first browser, associate and store second webpage
operation data of the second webpage and a second unique ID used for
generating the second URL; and
25 an interaction unit, to obtain first webpage operation data of a first webpage
corresponding to the first URL from the first browser according to the first unique
ID and interact with the first browser with the first webpage operation data.

8. The browser according to claim 7, wherein
30 the interaction unit is further to search for the first webpage operation data
corresponding to the first unique ID according to a preset reading time interval or
receive the pushed first webpage operation data corresponding to the first unique
ID according to a preset pushing time interval.

9. A non-transitory computer-readable medium storing a program, executed by a computer to execute methods in any of claims 1 to 6.

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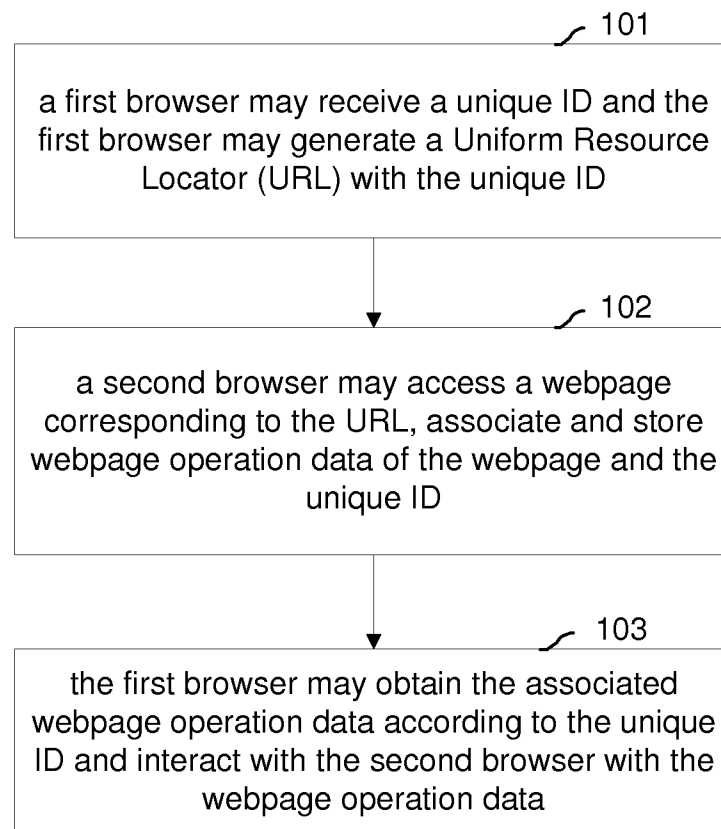


Fig. 1

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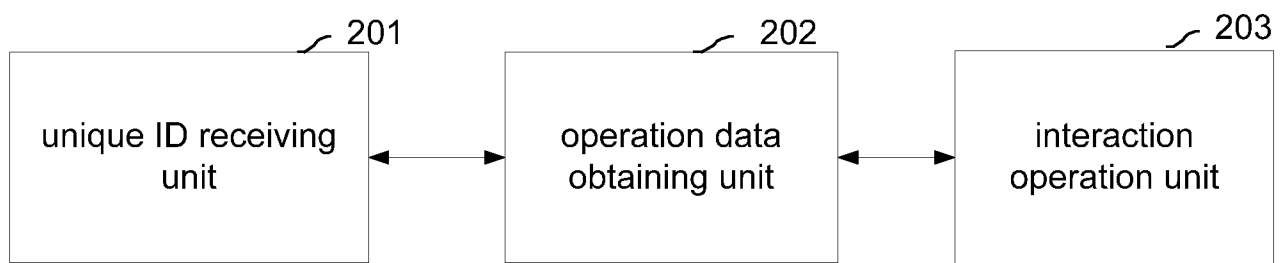


Fig. 2

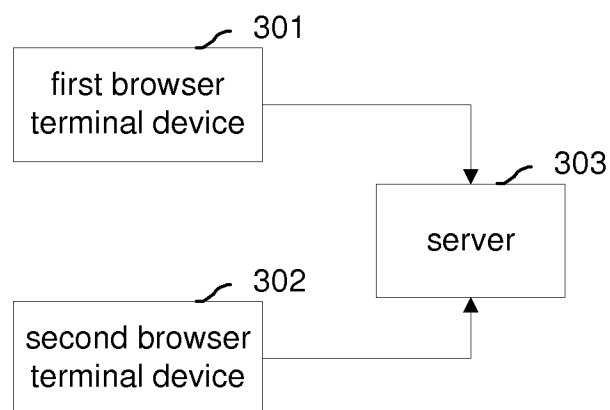


Fig. 3

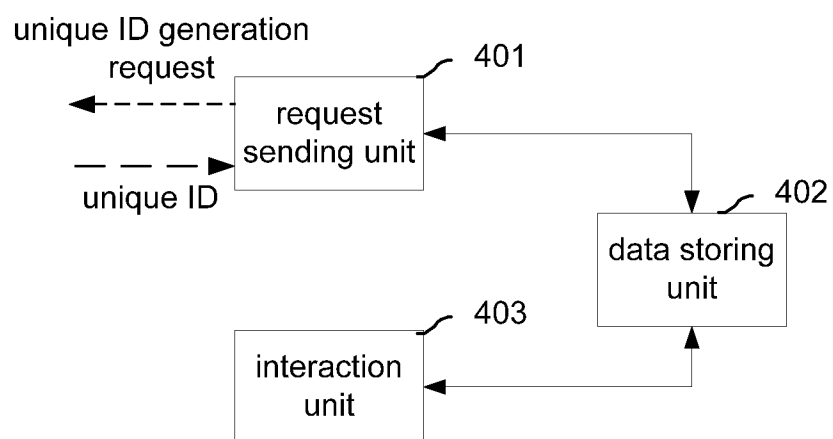


Fig. 4

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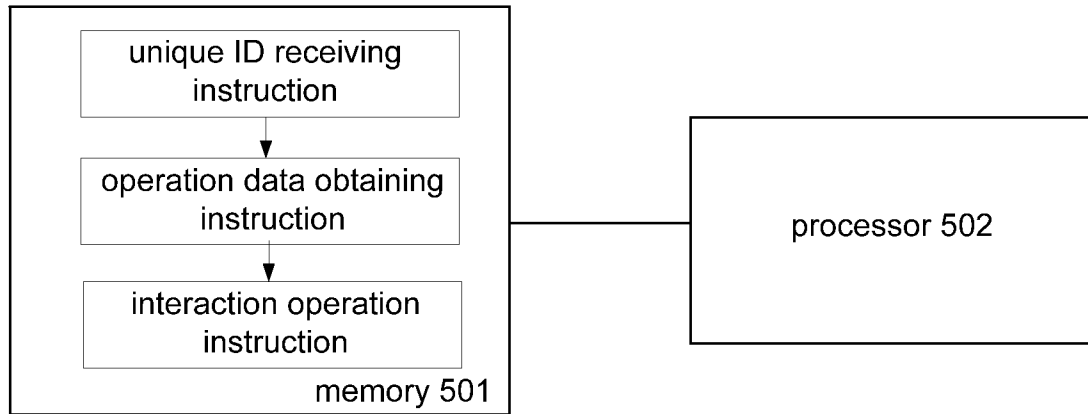


Fig. 5

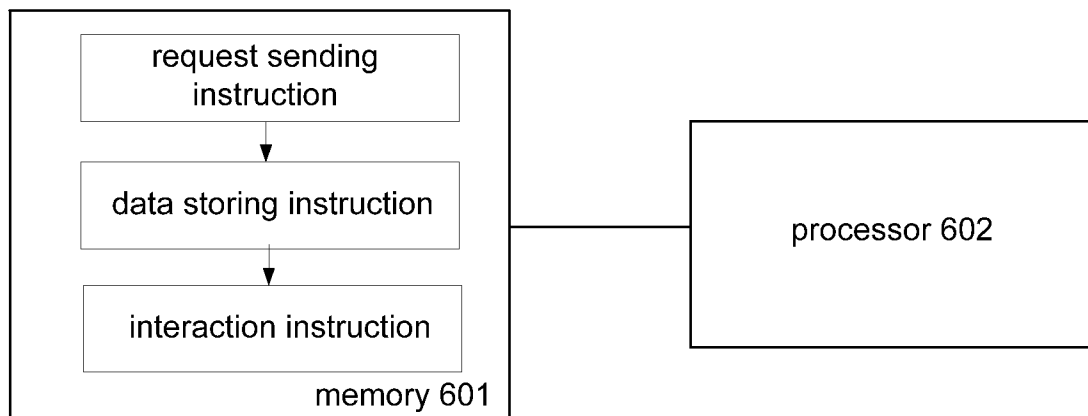


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2013/090196

A. CLASSIFICATION OF SUBJECT MATTER

G06F 17/30 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G06F 17/-, H04L 29/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CPRSABS, CNKI, VEN: browser, interaction, ID, URL, webpage

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102752388 A (BAIDU ON-LINE NETWORK TECHNOLOGY CO LTD) 24 October 2012	1-6, 9
A	(24.10.2012) see the description paragraph [0009]	7-8
A	CN 102224520 A (MICROSOFT CORP) 19 October 2011 (19.10.2011) see the whole document	1-9

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 18 March 2014 (18.03.2014)	Date of mailing of the international search report 27 Mar. 2014 (27.03.2014)
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer LI, Yuanye Telephone No. (86-10)62411751

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2013/090196

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 102752388 A	24.10.2012	None	
CN 102224520 A	19.10.2011	WO 2010062791 A3	26.08.2010
		CA 2739702 A1	03.06.2010
		JP 2012510127 A	26.04.2012
		IN 201103371 P4	07.09.2012
		RU 2011121151 A	27.11.2012
		WO 2010062791 A2	03.06.2010
		KR 20110086825 A	01.08.2011
		MX 2011005399 A	30.06.2011
		US 8244740 B2	14.08.2012
		EP 2350972 A2	03.08.2011
		AU 2009319923 A1	28.04.2011
		US 2010131441 A1	27.05.2010
		ZA 201102280 A	25.07.2012
		JP 5227461 B2	03.07.2013
		SG 169854 A1	29.04.2011
		EP 2350972 B1	26.02.2014