

(51) International Patent Classification:
G06F 3/0481 (2013.01)(21) International Application Number:
PCT/CN2013/083611(22) International Filing Date:
17 September 2013 (17.09.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
201210357938.x
24 September 2012 (24.09.2012) CN(71) Applicant: **TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED** [CN/CN]; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN).(72) Inventors: **ZHEN, Shi**; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN). **WANG, Feng**; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN). **ZHAO, Yi**; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN). **FANG, Fang**; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN). **YU, Ximin**; Room 403, East Block 2, SEG Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN). **LI, Meinuo**; Room 403, East Block 2, SEG

Park, Zhenxing Road, Futian, Shenzhen, Guangdong 518000 (CN).

(74) Agent: **BEIJING SAN GAO YONG XIN INTELLECTUAL PROPERTY AGENCY CO., LTD.**; A-1-102, He Jing Yuan, Ji Men Li, Xueyuan Road, Haidian, Beijing 100088 (CN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DISPLAY TERMINAL AND METHOD FOR DISPLAYING INTERFACE WINDOWS

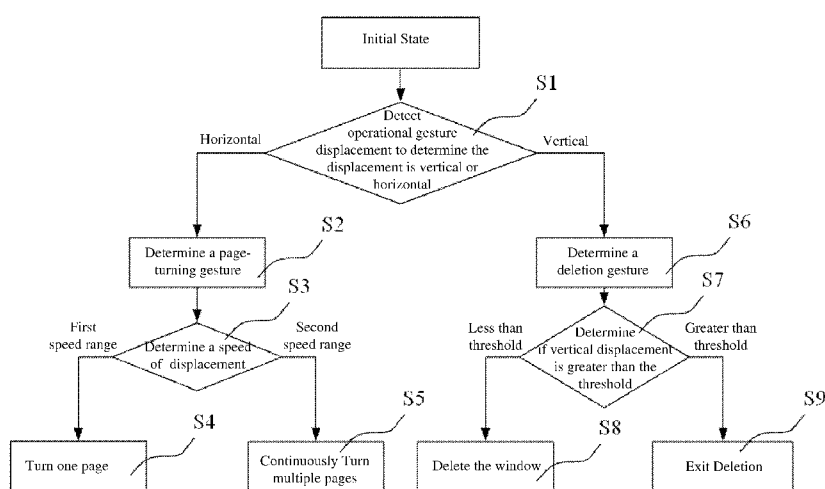


FIG. 4

(57) Abstract: Display terminals and methods for displaying interface windows are provided. In an exemplary method, at least two interface window thumbnails can be obtained and stacked to display. A display instruction can then be received. According to the display instruction, the at least two interface window thumbnails can be displayed by page-turning. Accordingly, a display terminal can include a thumbnail generating module, a displaying module, an instruction control module.



Published:

— *with international search report (Art. 21(3))*

DISPLAY TERMINAL AND METHOD FOR DISPLAYING INTERFACE WINDOWS

CROSS-REFERENCES TO RELATED APPLICATIONS

5 [0001] This application claims priority to Chinese Patent Application No. CN201210357938X, filed on September 24, 2012, the entire contents of which are incorporated herein by reference.

FIELD OF THE DISCLOSURE

[0002] The present disclosure relates to the field of terminal preview technology and, 10 more particularly, relates to methods for displaying interface windows and related display terminals, providing a convenient manner to preview a plurality of interface windows with easy operation and rapid positioning.

BACKGROUND

[0003] Recently, more web-browsing is conducted using a mobile phone (vs. using 15 computer) as a display terminal. However, mobile phones have small screens as compared with computers. Interface design for network browser used on a mobile phone is different from when used on a computer. For example, tabs can be used for a browser installed on the computer to facilitate users to quickly switch between multiple windows for browsing.

[0004] Multi-window browsing placed on a single page is also developed for mobile 20 browsers, as shown in FIG. 1(a)-1(b). For example, FIG. 1(a) shows a conventional multi-window preview on mobile phones. As shown, such browser can display multi-windows 10, 20,

on a single page 1. The dashed arrow shown in FIG. 1(a) indicates an operation of the mobile browser by sliding the screen in a left-right direction, which allows other windows to be seen. Often, it can only show one or two (e.g., windows 10 and 20 in FIG. 1(a)) windows. Switching windows is not efficient and window positioning is slow.

5 [0005] FIG. 1(b) shows another conventional multi-window preview on mobile phones. As shown, such browser can display multi-windows 30, 40, on a single page 2. However, each window 30, 40, can only see name and URL as shown in FIG. 1(b), and thus lack of graphical views to facilitate users with operational intuition. Especially when the name and the URL of the interface window is too long, which is in fact a common case, the user may not be able to
10 completely view and readout desired information only from the name and the URL of the interface window shown on the screen. Although this type of design may improve efficiency for switching between windows but no graphical views involved to facilitate users with operational intuition.

[0006] Therefore, methods for previewing multi-windows operated on a mobile phone
15 are desired for easy to preview and operate the multi-windows with fast positioning.

BRIEF SUMMARY OF THE DISCLOSURE

[0007] According to various embodiments, there is provided a method for displaying interface windows on a display terminal. In this method, at least two interface window thumbnails can be obtained and stacked to display. A display instruction can then be received.
20 According to the display instruction, the at least two interface window thumbnails can be displayed by page-turning.

[0008] According to various embodiments, there is also provided a display terminal. The display terminal can include a thumbnail generating module, a displaying module, and an instruction control module. The thumbnail generating module can be configured to obtain at least two interface window thumbnails. The displaying module can be configured to stack the at least two interface window thumbnails to display. The instruction control module can be configured to receive a display instruction. According to the display instruction, the displaying module can display the at least two interface window thumbnails by page-turning.

[0009] Other aspects or embodiments of the present disclosure can be understood by those skilled in the art in light of the description, the claims, and the drawings of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The following drawings are merely examples for illustrative purposes according to various disclosed embodiments and are not intended to limit the scope of the present disclosure.

[0011] FIGS. 1(a)-1(b) show conventional multi-window previews on mobile phones;

[0012] FIG. 2(a) depicts an initial state for an exemplary method of displaying interface windows in accordance with various disclosed embodiments;

[0013] FIG. 2(b) depicts an operating status for previewing a plurality of interface windows in an exemplary method for displaying interface windows in accordance with various disclosed embodiments;

[0014] FIG. 2(c) depicts a deleting operation when previewing a plurality of interface windows in an exemplary method for displaying an interface window in accordance with various disclosed embodiments;

[0015] FIG. 3 depicts an exemplary display terminal in accordance with various disclosed embodiments;

[0016] FIG. 4 depicts a flow diagram illustrating an exemplary display terminal and an exemplary method for displaying interface windows in accordance with various disclosed embodiments;

[0017] FIG. 5 depicts an exemplary environment incorporating certain disclosed embodiments; and

[0018] FIG. 6 depicts an exemplary server consistent with the disclosed embodiments.

DETAILED DESCRIPTION

[0019] Reference will now be made in detail to exemplary embodiments of the disclosure, which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

[0020] FIGS. 2-4 depict exemplary display terminals and exemplary methods for displaying interface windows in accordance with various disclosed embodiments. The exemplary display terminals and methods can be implemented, for example, in an exemplary environment 500 as shown in FIG. 5.

[0021] As shown in FIG. 5, the environment 500 can include a server 504, a terminal 506, and a communication network 502. The server 504 and the terminal 506 may be coupled

through the communication network 502 for information exchange, for example, Internet searching, webpage browsing, etc. Although only one terminal 506 and one server 504 are shown in the environment 500, any number of terminals 506 or servers 504 may be included, and other devices may also be included.

5 [0022] The communication network 502 may include any appropriate type of communication network for providing network connections to the server 504 and terminal 506 or among multiple servers 504 or terminals 506. For example, the communication network 502 may include the Internet or other types of computer networks or telecommunication networks, either wired or wireless.

10 [0023] A terminal, as used herein, may refer to any appropriate user terminal device with certain computing capabilities, for example, a personal computer (PC), a work station computer, a notebook computer, a car computer (e.g., carrying in a car or other vehicles), a server computer, a hand-held computing device (e.g., a tablet computer), a mobile terminal (e.g., a mobile phone, a smart phone, an iPad, and/or an aPad), a POS (i.e., point of sale) device, or any other user-side
15 computing device. In various embodiments, the terms “terminal” and “terminal device” can be interchangeably used. In various embodiments, the terminal 506 can include the disclosed display terminal, which can implement the disclosed methods for displaying multi- interface windows. As used herein, unless otherwise specified, the terms “window” and “interface window” can be interchangeably used.

20 [0024] A server, as used herein, may refer one or more server computers configured to provide certain server functionalities, for example, search engines and database management. A server may also include one or more processors to execute computer programs in parallel.

[0025] The server 504 and the terminal 506 may be implemented on any appropriate computing platform. FIG. 6 shows a block diagram of an exemplary computing system 600 capable of implementing the server 504 and/or the terminal 506. As shown in FIG. 6, the exemplary computer system 600 may include a processor 602, a storage medium 604, a monitor 606, a communication module 608, a database 610, peripherals 612, and one or more bus 614 to couple the devices together. Certain devices may be omitted and other devices may be included.

[0026] The processor 602 can include any appropriate processor or processors. Further, the processor 602 can include multiple cores for multi-thread or parallel processing. The storage medium 604 may include memory modules, for example, ROM, RAM, and flash memory modules, and mass storages, for example, CD-ROM, U-disk, removable hard disk, etc. The storage medium 604 may store computer programs for implementing various processes, when executed by the processor 602.

[0027] Further, the peripherals 612 may include I/O devices, for example, keyboard and mouse, and the communication module 608 may include network devices for establishing connections through the communication network 502. The database 610 may include one or more databases for storing certain data and for performing certain operations on the stored data, for example, webpage browsing, database searching, etc.

[0028] In operation, the terminal 506 may cause the server 504 to perform certain actions, for example, an Internet search or other database operations. The server 504 may be configured to provide structures and functions for such actions and operations. More particularly, the server 504 may include a data searching system for real-time database searching. In various embodiments, a terminal, for example, a mobile terminal involved in the disclosed methods and systems can include the terminal 506.

[0029] Referring to FIGS. 2(a)-2(c) and FIG. 4, the exemplary display terminal depicted in FIG. 4 includes a thumbnail generating module 400, a displaying module 410, and/or an instruction control module 420.

[0030] The thumbnail generating module 400 is configured to obtain at least two interface window thumbnails, e.g., interface window thumbnails 110, 120 as shown in FIG. 2(a). The displaying module 410 is configured to stack (e.g., overlay) and display the at least two interface window thumbnails, e.g., the interface window thumbnails 110, 120. The instruction control module 420 is configured to receive display instructions inputted by a user. The displaying module 410 can achieve page-turning display of the at least two interface window thumbnails 110, 120 according to the display instruction inputted by the user.

[0031] The disclosed display terminal can have a screen, for example, a mobile phone screen, which can have a touch-screen control, optical screen control, etc. The disclosed display terminal can be able to receive data for displacement of operational gestures on the screen. Of course, the present disclosure is not limited to the operational gestures, any operational means for interface input between man-machine can be encompassed herein.

[0032] As shown in FIG. 2(a) where a user opens browser application software and the initial state can include multiple browsed interface windows opened by the user in the disclosed display terminal and in the disclosed method for displaying interface windows.

[0033] The displaying module 410 can allow multiple interface windows to be displayed on the screen, for example, on a page 100 shown in FIG. 2(a). Each interface window can be an individual thumbnail obtained by the thumbnail generating module 400. The interface windows can include, e.g., a first interface window thumbnail 110, a second interface window thumbnail 120, etc.

[0034] Meanwhile, on page 100 of the displaying module 410, an interface window identification of the uppermost first interface window thumbnail 110 can be displayed including, e.g., name and the URL 200 of the interface window. Each of the thumbnails following the first interface window thumbnail 110 can be arranged to be sequentially stacked under a previous thumbnail. As shown in FIG. 2(A), all of the interface window thumbnails 110, 120, etc. are displayed in a manner of three-dimensional animation stacking.

[0035] Displaying by three-dimensional animation stacking can display the interface window thumbnails 110, 120, etc. with different z-coordinate by setting the displaying module 410, such that the interface window thumbnails 110, 120, etc. can show different depth of field. In addition, the interface window thumbnails 110, 120, etc. can be set by the displaying module 410 to have different perspectives, allowing users to better experience layers of the three-dimension.

[0036] In FIG. 2(b), when the user operates the disclosed display terminal to preview multiple interface windows within a single page, the instruction control module 420 can determine whether a coordinate movement direction of a gesture displacement is in a first direction range or in a second direction range. As disclosed, a substantially horizontal direction can be a first range of directions; and a substantially vertical direction can be a second range of directions.

[0037] As indicated by arrows in FIG. 2(b), when the gesture displacement slides to the left (or sometimes to the right), alike turning pages in a book, the first interface window thumbnail 110 on top of the stacked thumbnails can turn (or flip) by a certain angle. Meanwhile, the z-coordinate of the second interface window thumbnail 120, originally under the first interface window thumbnail 110, can be adjusted to be moved up to be displayed to the user.

[0038] The displaying module 410 can delete the originally-uppermost stacked first interface window thumbnail 110 by a gesture displacement. For this deletion, the user can see the originally-uppermost stacked first interface window thumbnail 110 is removed from this page and the second interface window thumbnail 120 is moved up and displayed uppermost on the stack of thumbnails. Of course, at this time, the displaying module 410 can display interface window identification (e.g., logo) of the second interface window thumbnail 120 including, for example, name and URL 200 of the interface window thumbnail 120.

[0039] In addition, when the instruction control module 420 determines a gesture displacement is in a range of the first direction, for example, in a substantially horizontal direction, a speed threshold with respect to the displacement is used to determine the substantially horizontal displacement of the gesture is in the first speed range or a second speed range. If the instruction control module 420 determines the gesture displacement is in the first speed range, e.g., at a slow speed, with the gesture, the first interface window thumbnail 110 can move slowly along with the gesture displacement. If the instruction control module 420 determines the gesture displacement is in the second speed range, e.g., at a fast speed, then based on the displacement value of the operational gesture, a turning page display having a corresponding number of the interface window thumbnails can be performed.

[0040] For example, when a displacement distance of the operational gesture is short enough, the first interface window thumbnail 110 can be rapidly turned (or flipped). When the displacement distance of the operational gesture is long enough, via the three-dimensional transformation matrix, a page turning display showing rapidly flipping multiple thumbnails can be displayed.

[0041] In FIG. 2(c), on a single page of the disclosed display terminal, the user can perform a deletion operation of the first interface window thumbnail 110 on one window. When a displacement of the operational gesture of the user is in the second direction range, for example, in a substantially vertical direction, and the displacement of a user's gesture is indicated by the arrow. When sliding upward, the first interface window thumbnail 110 can move along with a displacement direction of the user's gesture, and can change degree of transparency along with the gesture displacement.

[0042] In the disclosed display terminals and methods for displaying interface window(s), a threshold can be pre-set. The threshold is a coordinate position pre-set in the second direction range, for example, the threshold may be a y-coordinate value pre-set on the screen of a mobile phone.

[0043] When the instruction control module 420 determines that an ending position of the gesture displacement is less than this threshold value, as shown in FIG. 2(C), it is determined the first interface window thumbnail 110 moves beyond a region of the deletion notification 300. The displaying module 410 deletes the first interface window thumbnail 110 and makes it disappear. Other windows following the first interface window thumbnail 110 can then be sequentially moved up, for example, the second interface window thumbnail 120 can become an uppermost interface window thumbnail.

[0044] When the instruction control module 420 determines that an ending position of the gesture displacement is greater than the threshold value, i.e., the first interface window thumbnail 110 does not move beyond the region of the deletion notification 300. The first interface window thumbnail 110 can bounce back and restore to its original state.

[0045] Of course, the region of the deletion notification 300 can be set to display on the bottom of the screen, such that the ending position of the gesture displacement is greater than this threshold value. The instruction control module 420 determines whether the first interface window thumbnail 110 moves beyond the region of the deletion notification 300. The first
5 interface window thumbnail 110 disappears. The thumbnails following the first interface window thumbnail 110 can sequentially move up, for example, the second interface window thumbnail 120 can become the uppermost thumbnail.

[0046] When the instruction control module 420 determines that an ending position of the gesture displacement is less than the threshold value, i.e., the first interface window
10 thumbnail 110 does not move beyond the region of the deletion notification 300. The first interface window thumbnail 110 can bounce back and restore to its original state.

[0047] FIG. 4 depicts a flow diagram illustrating an exemplary display terminal and an exemplary method for displaying interface windows in accordance with various disclosed embodiments.

15 [0048] When a user opens browser application software, for example, the user has already opened multiple browsed interface windows, the thumbnail generating module 400 can obtain each individual interface window thumbnail, e.g., the first interface window thumbnail 110, the second interface window thumbnail 120, etc. The displaying module 410 can display the phone screen as shown in FIG. 2 (a), illustrating an initial state displaying a number of interface
20 windows on one page. Individual interface window thumbnail 110, 120, etc. can be displayed. The number of interface windows can be displayed as three-dimensional animation stacking having the first interface window thumbnail 110 the uppermost.

[0049] In Step S1, the instruction control module 420 detects data of a displacement of an operational gesture from a user received by a mobile phone to determine that the displacement is substantially vertical or substantially horizontal.

[0050] In Step S2, when the displacement is determined to be substantially horizontal, the instruction control module 420 determines whether the received operation is a page turning gesture.

[0051] In Step S3, when the instruction control module 420 detects a speed of the displacement and determines a slow speed, then Step S4 is performed, the screen only displays turning of the first interface window thumbnail 110. When the instruction control module 420 detects a speed of the displacement and determines a fast speed, then Step S5 is performed, the screen only displays turning of the first interface window thumbnail 110 followed by a number of other thumbnails, e.g., a second interface window thumbnail 120.

[0052] Of course, before performing Step S3, a pre-set speed threshold can be included. A first speed range and a second speed range can be distinguished to determine whether the horizontal displacement is in a first speed range (e.g., slow) or in a second speed range (e.g., fast).

[0053] Further, if the displacement is determined substantially vertical in Step S1, Step S6 can be performed. It is determined that the received operation includes a deleting gesture. Then, Step S7 is performed, the instruction control module 420 determines whether a vertical displacement is greater than a preset threshold. The threshold can be a y-coordinate value pre-set on the screen of the mobile phone.

[0054] In Step S8, when the ending position of a displacement is less than a threshold value, the displaying module 410 can delete the first interface window thumbnail 110. The first interface window thumbnail 110 then disappears.

[0055] In Step S9, when the ending position of the displacement is greater than the threshold, then the deletion exits. The displaying module 410 allows the first interface window thumbnail 110 to be restored to its original display state.

[0056] In the disclosed display terminals and interface window display method, displaying with page turning and three-dimensional animation can allow users to use their intuition, and more intuitively display images of operations. This can efficiently facilitate users to preview multiple interface windows with rapid positioning.

[0057] It should be noted that, in the present disclosure each embodiment is progressively described, i.e., each embodiment is described and focused on difference between embodiments. Similar and/or the same portions between various embodiments can be referred to with each other. In addition, exemplary apparatus is described with respect to corresponding methods.

[0058] Note that, the term "comprising", "including" or any other variants thereof are intended to cover a non-exclusive inclusion, such that the process, method, article, or apparatus containing a number of elements also include not only those elements, but also other elements that are not expressly listed; or further include inherent elements of the process, method, article or apparatus. Without further restrictions, the statement "includes a" does not exclude other elements included in the process, method, article, or apparatus having those elements.

[0059] A person of ordinary skill in the art can understand that the modules included herein are described according to their functional logic, but are not limited to the above descriptions as long as the modules can implement corresponding functions. Further, the specific name of each functional module is used for distinguishing from one another without
5 limiting the protection scope of the present disclosure.

[0060] In various embodiments, the disclosed modules can be configured in one apparatus or configured in multiple apparatus as desired. The modules disclosed herein can be integrated in one module or in multiple modules. Each of the modules disclosed herein can be divided into one or more sub-modules, which can be recombined in any manner.

10 [0061] One of ordinary skill in the art would appreciate that suitable software and/or hardware (e.g., a universal hardware platform) may be included and used in the disclosed methods and systems. For example, the disclosed embodiments can be implemented by hardware only, which alternatively can be implemented by software products only. The software products can be stored in a computer-readable storage medium including, e.g., ROM/RAM,
15 magnetic disk, optical disk, etc. The software products can include suitable commands to enable a terminal device (e.g., including a mobile phone, a personal computer, a server, or a network device, etc.) to implement the disclosed embodiments.

[0062] The embodiments disclosed herein are exemplary only. Other applications, advantages, alternations, modifications, or equivalents to the disclosed embodiments are obvious
20 to those skilled in the art and are intended to be encompassed within the scope of the present disclosure.

INDUSTRIAL APPLICABILITY AND ADVANTAGEOUS EFFECTS

[0063] Without limiting the scope of any claim and/or the specification, examples of industrial applicability and certain advantageous effects of the disclosed embodiments are listed for illustrative purposes. Various alternations, modifications, or equivalents to the technical solutions of the disclosed embodiments can be obvious to those skilled in the art and can be included in this disclosure.

[0064] The present disclosure relates to the field of terminal preview technology and, more particularly, relates to methods for displaying interface windows and related display terminals, providing a convenient manner to preview a plurality of interface windows with easy operation and rapid positioning.

[0065] In the disclosed display terminals and interface window display method, displaying with page turning and three-dimensional animation can allow users to use their intuition, and more intuitively display images of operations. This can efficiently facilitate users to preview multiple interface windows.

REFERENCE SIGN LIST

- Page 1, 2
- Interface window 10, 20, 30, 40
- 5 Page 100
- Interface window thumbnail 110, 120
- Interface window name and URL 200
- Deletion notification 300
- Thumbnail generating module 400
- 10 Displaying module 410
- Instruction control module 420
- Environment 500
- Communication network 502
- Server 504
- 15 Terminal 506
- Processor 602
- Storage medium 604
- Monitor 606
- Communications 608
- 20 Database 610
- Peripherals 612
- Bus 614

WHAT IS CLAIMED IS:

1. A method for displaying interface windows on a display terminal comprising:
obtaining at least two interface window thumbnails;
stacking the at least two interface window thumbnails to display; and
receiving a display instruction; and
displaying the at least two interface window thumbnails by page-turning according to the display instruction.
2. The method of claim 1, wherein the display instruction comprises a displacement received by the display terminal.
3. The method of claim 2, further comprising:
determining whether a coordinate movement direction of the displacement of a gesture is in a first direction range or in a second direction range.
4. The method of claim 3, wherein, when the displacement is in the first direction range, the method further comprises:
determining whether a speed of the displacement is in a first speed range or in a second speed range, and
page-turning a first interface window thumbnail of the at least two interface window thumbnails to display, when the speed of the displacement is in the first speed range, or
page-turning the at least two interface window thumbnails to display, when the speed of the displacement is in the second speed range.

5. The method of claim 4, wherein when the speed of the displacement is in the second speed range, the method further comprises:

page-turning a number of interface window thumbnails selected from the at least two interface window thumbnails to display, wherein the number corresponds to a number of the displacement.

6. The method of claim 4, wherein the page-turning of the at least two interface window thumbnails to display comprises:

simultaneously displaying interface window identification corresponding to the at least two interface window thumbnails, wherein the interface window identification comprises a name and a url.

7. The method of claim 3, wherein, when the displacement is in the second direction range, the method further comprises:

a first interface window thumbnail of the at least two interface window thumbnails moves in a direction along with a coordinate movement direction of the displacement.

8. The method of claim 7, wherein, when an ending position of the displacement is less than a threshold, the method further comprises:

deleting the first interface window thumbnail from the at least two interface window thumbnails.

9. The method of claim 8, wherein the threshold is a coordinate position pre-set in the second direction range.
10. A display terminal comprising:
- a thumbnail generating module, configured to obtain at least two interface window thumbnails;
 - a displaying module, configured to stack the at least two interface window thumbnails to display;
 - an instruction control module, configured to receive a display instruction, wherein the displaying module displays the at least two interface window thumbnails by page-turning according to the display instruction.
11. The display terminal of claim 10, wherein the display instruction comprises a displacement of a gesture that a user input to an instruction control module of the display terminal.
12. The display terminal of claim 11, wherein the instruction control module is configured to determine whether a coordinate movement direction of the displacement is in a first direction range or in a second direction range.
13. The display terminal of claim 12, wherein the instruction control module is configured to determine whether a speed of the displacement is in a first speed range or in a second speed range, and wherein

when the speed of the displacement is in the first speed range, the displaying module page-turns a first interface window thumbnail of the at least two interface window thumbnails to display, or

when the speed of the displacement is in the second speed range, the displaying module page-turns the at least two interface window thumbnails to display.

14. The display terminal of claim 13, wherein when the instruction control module determines the speed of the displacement is in the second speed range, the displaying module page-turns a number of interface window thumbnails selected from the at least two interface window thumbnails to display, wherein the number corresponds to a number of the displacement.

15. The display terminal of claim 13, wherein when the displaying module page-turns the at least two interface window thumbnails to display, the displaying module simultaneously displays interface window identification corresponding to the at least two interface window thumbnails, wherein the interface window identification comprises a name and a url.

16. The display terminal of claim 12, wherein, when the instruction control module determines the displacement is in the second direction range, the displaying module allows a first interface window thumbnail of the at least two interface window thumbnails to move in a direction along with a coordinate movement direction of the displacement.

17. The display terminal of claim 16, wherein, when the instruction control module determines an ending position of the displacement is less than a threshold, the displaying module delete the first interface window thumbnail from the at least two interface window thumbnails.
18. The display terminal of claim 17, wherein the threshold is a coordinate position pre-set in the second direction range.

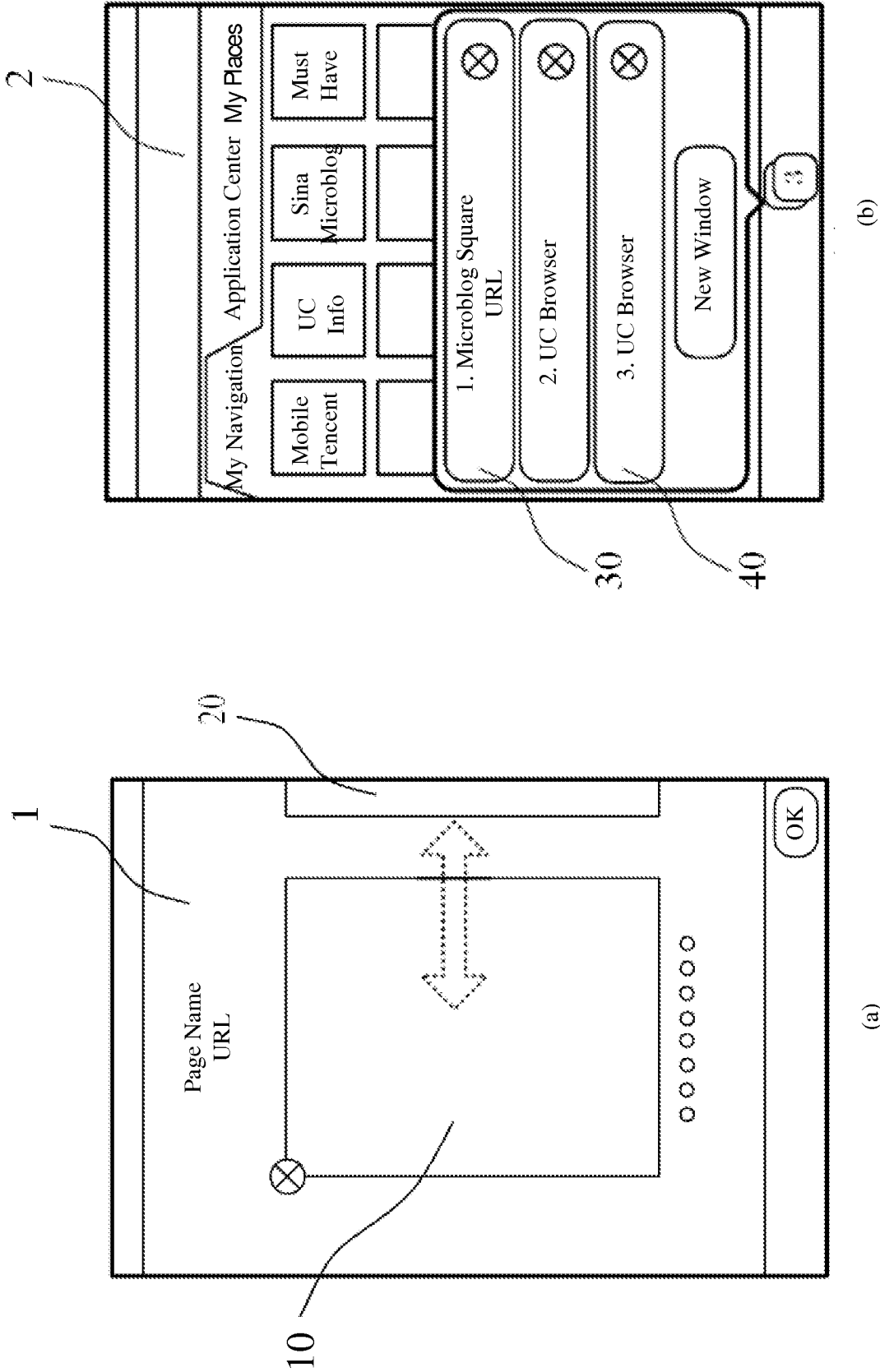


FIG. 1

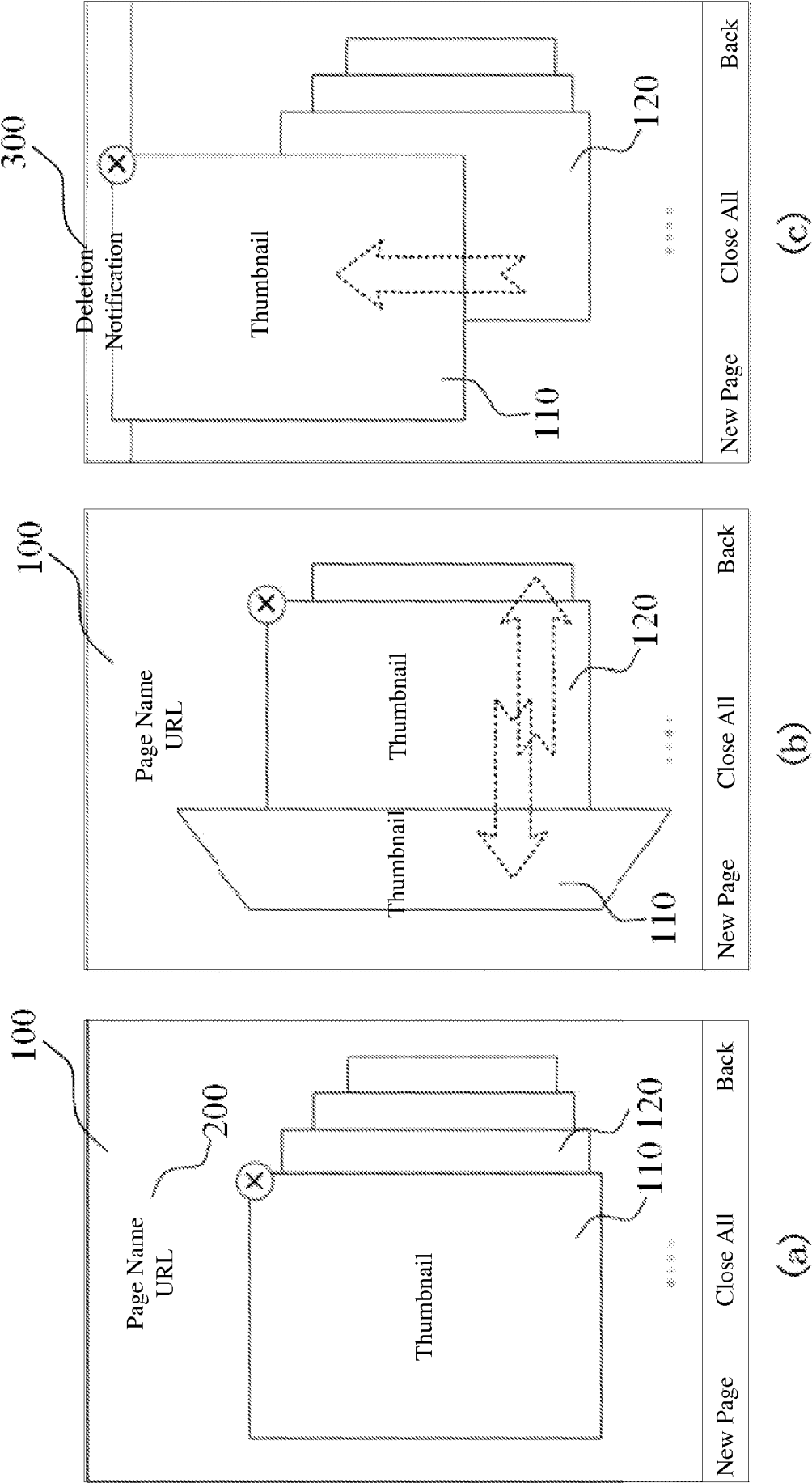


FIG. 2

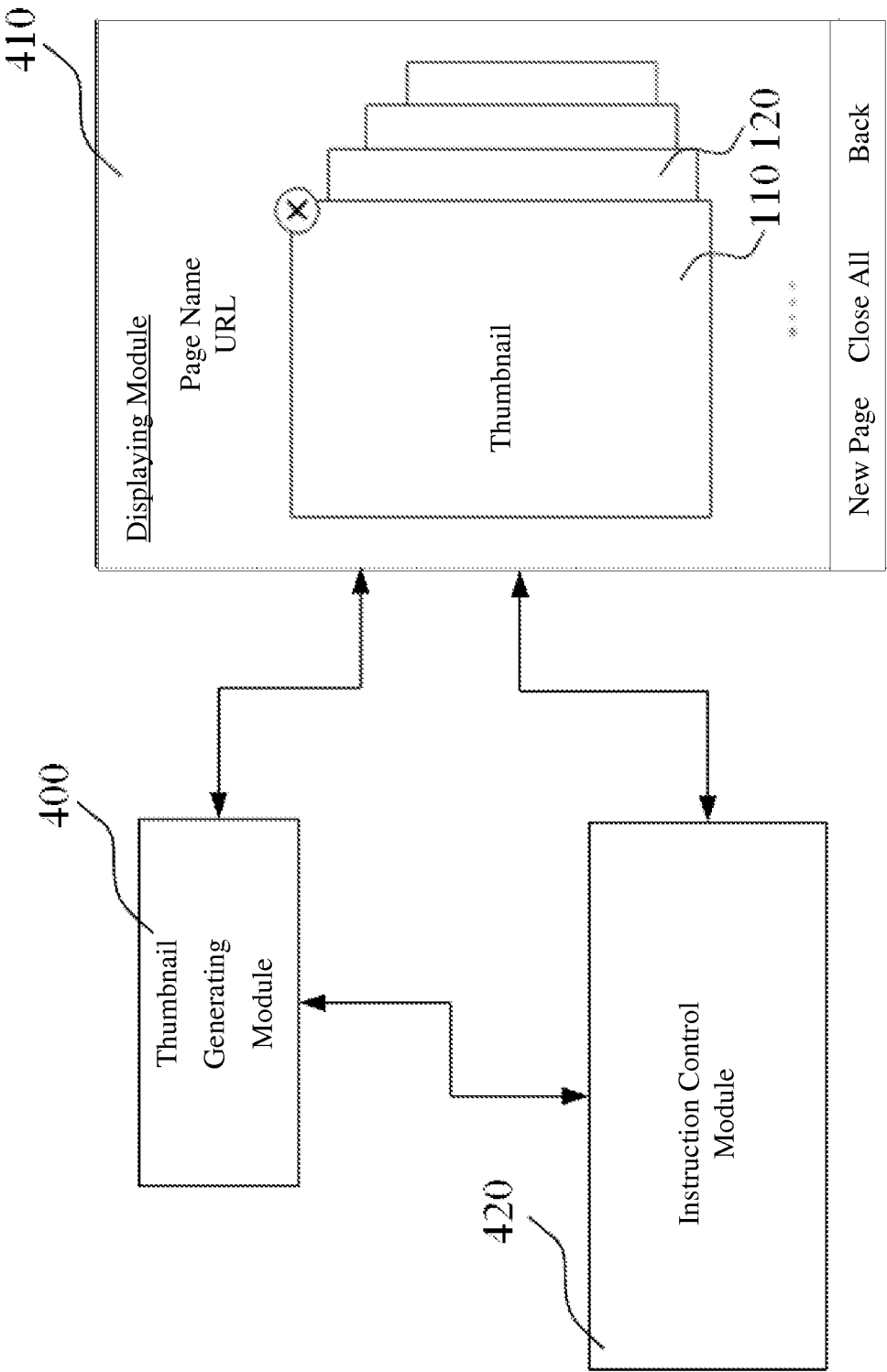


FIG. 3

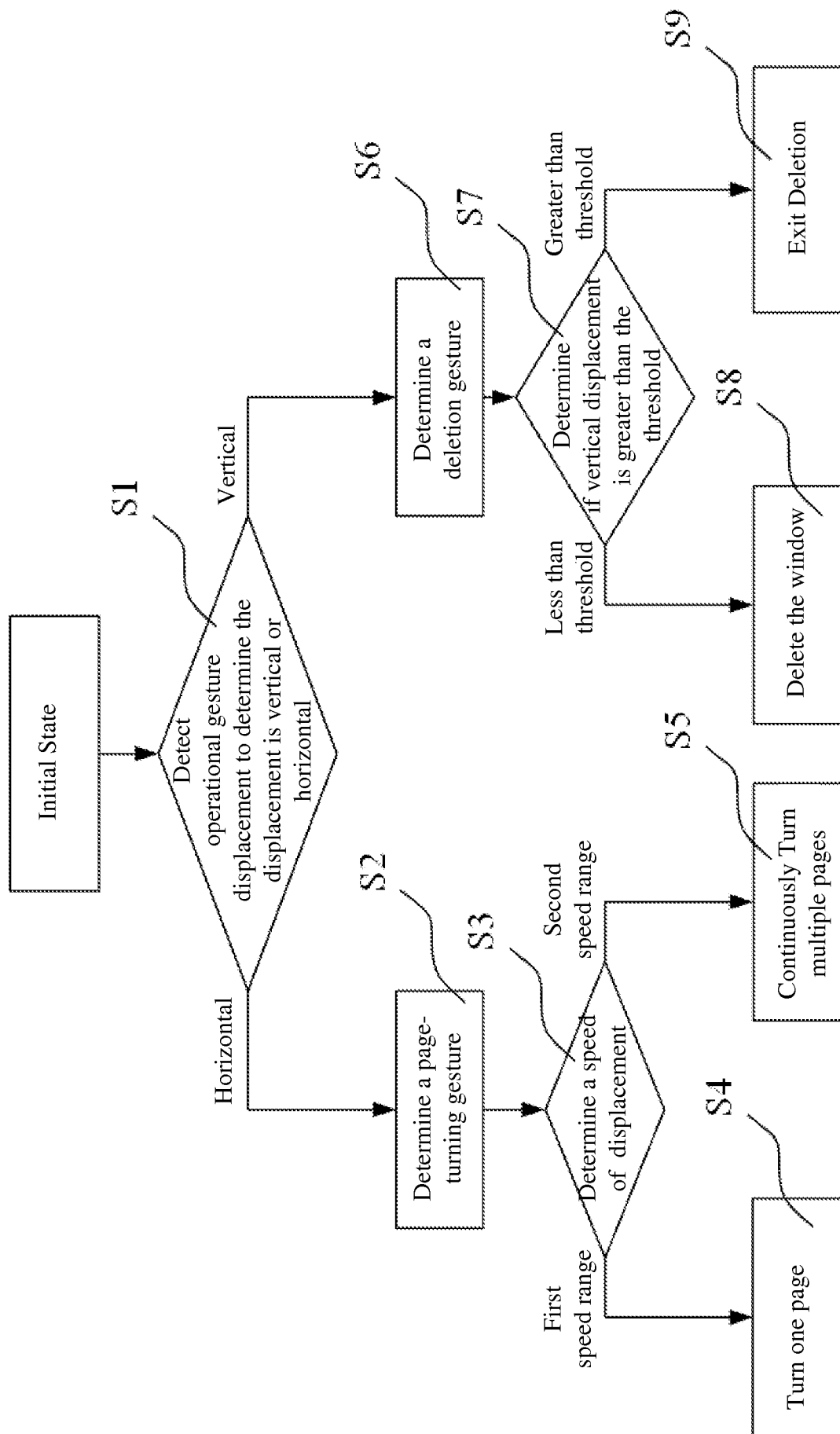


FIG. 4

500

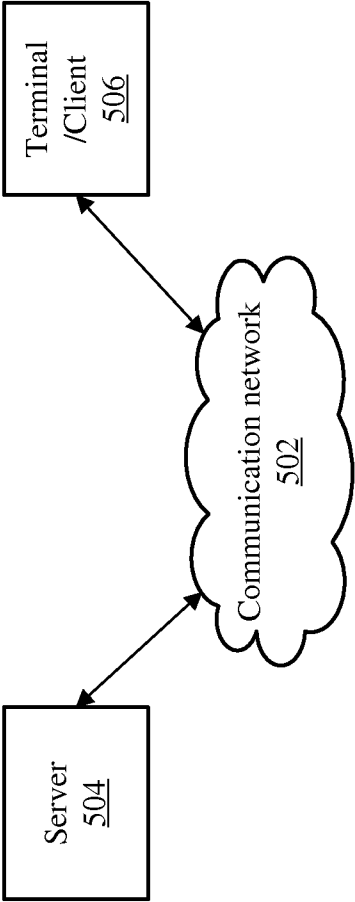


FIG.5

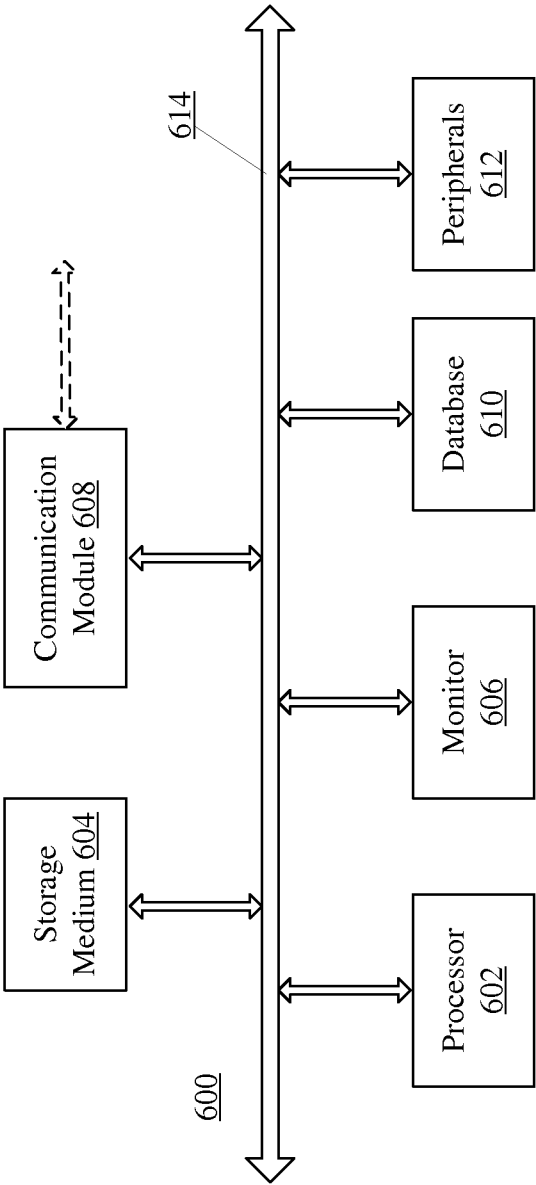


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2013/083611

A. CLASSIFICATION OF SUBJECT MATTER

G06F 3/0481 (2013.01) 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

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)

EPODOC, WPI, CNPAT: display, interface, window, web, browser, book, pag???, thumbnail, zoom, three-dimensional, tridimensional, delet???, up, mov???, drag???, icon

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/0267909 A1 (HTC CORPORATION) 29 October 2009 (29.10.2009) description, paragraphs [0009]-[0018], [0055]-[0077], figures 5B-10D	1-6, 10-15
Y	the same as above	7-9, 16-18
Y	EP 2161656 A2 (SONY CORPORATION) 10 March 2010 (10.03.2010) description, paragraphs [0339]-[0341], figures 40A, 40B	7-9, 16-18
X	US 2008/0066016 A1 (APPLE COMPUTER, INC.) 13 March 2008 (13.03.2008) description, paragraph [0044] and figure 2D	1, 10
A	CN 102645986 A (LV, YUEMIN) 22 August 2012 (22.08.2012) the whole document	1-18

☐ 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 21 November 2013 (21.11.2013)	Date of mailing of the international search report 19 Dec. 2013 (19.12.2013)
--	--

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

REN, Bin

Telephone No. (86-10) 62413243

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2013/083611

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US 2009/0267909 A1	29.10.2009	CN 101566921 A	28.10.2009
		CN 101566920 A	28.10.2009
		CN 101566919 A	28.10.2009
		CN 101566918 A	28.10.2009
		CN 101566917 A	28.10.2009
		TW 200945175 A	01.11.2009
		TW 200945176 A	01.11.2009
		TW 200945177 A	01.11.2009
		TW 200945178 A	01.11.2009
		TW 200945179 A	01.11.2009
		US 2009271783 A1	29.10.2009
		US 2009271703 A1	29.10.2009
		US 2009271731 A1	29.10.2009
		US 2009288032 A1	19.11.2009
EP 2161656 A2	10.03.2010	US 2010053216 A1	04.03.2010
		CN 101662585 A	03.03.2010
		JP2010055454 A	11.03.2010
		INCHE 200901692 A	05.03.2010
		BRPI 0902850 A2	25.05.2010
US 2008/0066016 A1	13.03.2008	TW 201023024 A	16.06.2010
		WO 2008033773 A1	20.03.2008
		EP 2064632 A1	03.06.2009
		GB 2456928 A	05.08.2009
		CN 101542479 A	23.09.2009
		DE 112007002133T T5	08.10.2009
		EP 2330517 A2	08.06.2011
		INKOLNP 200900461E E	15.05.2009
		US 2009319949 A1	24.12.2009
CN 102645986 A	22.08.2012	None	