

METHOD, APPARATUS, DEVICE, STORAGE MEDIUM, AND PROGRAM PRODUCT FOR PAGE MANAGEMENT

[0001] The present application claims priority to Chinese Patent Application No. 202411017384.8, filed on July 26, 2024 and entitled "METHOD, APPARATUS, DEVICE, STORAGE MEDIUM, AND PROGRAM PRODUCT FOR PAGE MANAGEMENT ", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] Example embodiments of the present disclosure generally relate to the field of computers, and in particular, to a method, an apparatus, an electronic device, a computer-readable storage medium, and a computer program product for page management.

BACKGROUND

[0003] Currently, more and more applications are designed to provide various services for users. For example, a user may post, browse, and view various types of content in an application, including multimedia content such as a video, an image, an image set, a sound, or a combination thereof. The user may also interact with other users in pages of the application, for example, liking, favoriting, or commenting on content posted by other users, or following other users, visiting personal homepages of other users, and so on.

SUMMARY

[0004] In a first aspect of the present disclosure, a method of page management is provided. The method includes: displaying a first page, the first page displaying a first group of media items in a plurality of media items in a first view mode, the first page including a navigation bar having a plurality of navigation tabs; displaying an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page including at least: a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, the first access entry including first media content of the first group of media items, and the second access entry including second media content of a second group of media items to be displayed in the second view mode; and displaying a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, the second page including a group of media items displayed in a target view mode corresponding to the target access entry.

[0005] In a second aspect of the present disclosure, an apparatus for page management is provided. The apparatus includes: a first page display module configured to display a first page, the first page displaying a first group of media items in a plurality of media items in a first view mode, the first page including a navigation bar having a plurality of navigation tabs; an interaction page display module configured to, display an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page including at least: a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, the first access entry including first media content of the first group

of media items, and the second access entry including second media content of a second group of media items to be displayed in the second view mode; and a second page display module configured to display a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, the second page including a group of media items displayed in a target view mode corresponding to the target access entry.

[0006] In a third aspect of the present disclosure, an electronic device is provided. The device includes at least one processing unit; and at least one memory coupled to the at least one processing unit and storing instructions executable by the at least one processing unit. The instructions, when executed by the at least one processing unit, causes the electronic device to perform the method of the first aspect.

[0007] In a fourth aspect of the present disclosure, a computer-readable storage medium is provided. The medium has a computer program stored thereon, the computer program, when executed by a processor, implementing the method of the first aspect.

[0008] In a fifth aspect of the present disclosure, a computer program product is provided. The product includes a computer program, where the computer program, when executed by a processor, implements the method of the first aspect.

[0009] It should be understood that the content described in this section is not intended to limit key features or important features of the embodiments of the present disclosure, nor is it intended to limit the scope of the present disclosure. Other features of the present disclosure will become readily understood through the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The foregoing and other features, advantages, and aspects of the embodiments of the present disclosure become more apparent with reference to the following detailed description and in conjunction with the drawings. In the drawings, the same or similar reference numerals denote the same or similar elements.

[0011] Fig. 1 is a schematic diagram of an example environment in which the embodiments according to the present disclosure may be implemented;

[0012] Figs. 2A to 2J are schematic diagrams of example pages according to some embodiments of the present disclosure;

[0013] Fig. 3 is a flowchart of a method of page management according to some embodiments of the present disclosure;

[0014] Fig. 4 is an example structural block diagram of an apparatus for page management according to some embodiments of the present disclosure; and

[0015] Fig. 5 is a block diagram of an electronic device with which one or more embodiments of the present disclosure may be implemented.

DETAILED DESCRIPTION OF EMBODIMENTS

[0016] The embodiments of the present disclosure are described in more detail below with reference to the drawings. Although some embodiments of the present disclosure are shown in the drawings, it should be

understood that the present disclosure may be implemented in various forms, and should not be construed as being limited to the embodiments set forth herein. Instead, these embodiments are provided for a more thorough and complete understanding of the present disclosure. It should be understood that the drawings and the embodiments of the present disclosure are merely illustrative, but not intended to limit the scope of protection of the present disclosure.

[0017] It should be noted that the titles of any sections/subsections provided herein are not restrictive. Various embodiments are described throughout this specification, and any type of embodiment may be included under any section/subsection. In addition, the embodiments described in any section/subsection may be combined with any other embodiments described in the same section/subsection and/or different sections/subsections in any manner.

[0018] In the description of the embodiments of the present disclosure, the term "include/comprise" and similar terms thereof should be understood as open-ended inclusions, that is, "include/comprise but not limited to". The term "based on" should be understood as "at least partially based on". The term "an embodiment" or "the embodiment" should be understood as "at least one embodiment". The term "some embodiments" should be understood as "at least some embodiments". Other explicit and implicit definitions may be included below. The terms "first", "second", and the like may refer to different or same objects. Other explicit and implicit definitions may be included below.

[0019] In this specification, unless otherwise specified, performing a step "in response to A" does not mean that the step is performed immediately after "A", and may include one or more intermediate steps.

[0020] It may be understood that the data involved in the technical solution (including but not limited to the data itself, acquisition or use of the data) should comply with requirements of corresponding laws, regulations, and related provisions.

[0021] It may be understood that before the use of the technical solution disclosed in the embodiments of the present disclosure, the user should be informed of the type, range of use, use scenarios, etc., of personal information involved in the present disclosure, and the authorization of the user should be obtained, through appropriate means, in accordance with relevant laws and regulations.

[0022] For example, in response to receiving an active request from a user, prompt information is sent to the user to clearly inform the user that the requested operation will require access to and use of the user's personal information, so that the user may independently choose, based on the prompt information, whether to provide the personal information to software or hardware, such as an electronic device, an application program, a server, or a storage medium, that performs the operations of the technical solution of the present disclosure.

[0023] As an optional but non-restrictive implementation, in response to receiving the active request from the user, the prompt information may be sent to the user in the form of, for example, a pop-up window, in which the prompt information may be presented in text. In addition, the pop-up window may also include a selection control for the user to choose whether to "agree" or "disagree" to provide the personal information to the electronic device.

[0024] It may be understood that the above process of notifying and obtaining user authorization is only illustrative, and does not limit the implementations of the present disclosure. Other manners that satisfy the relevant laws and regulations may also be applied in the implementations of the present disclosure.

[0025] According to conventional solutions, some media applications may provide users with multiple view modes, for example, a user may switch between a single-column view mode and a multi-column view mode through a specific switching operation. In addition, the user may also manage the presentation of media content in an interface, for example, through a settings page. These capabilities are commonly used for daily use by the user. However, the user needs to perform complicated interaction operations to complete the corresponding process, which requires high cost for learning and interaction.

[0026] The embodiments of the present disclosure propose a page management solution. According to the solution, a first page is displayed, where the first page displays a first group of media items in a plurality of media items in a first view mode, and the first page includes a navigation bar having a plurality of navigation tabs. An interaction page is displayed in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, where the interaction page includes at least a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode. The first access entry includes first media content of the first group of media items, and the second access entry includes second media content of a second group of media items to be displayed in the second view mode. A second page is displayed in response to receiving a selection request for a target access entry in the first access entry and the second access entry, where the second page includes a group of media items displayed in a target view mode corresponding to the target access entry.

[0027] In this way, the embodiments of the present disclosure may provide the user with the interaction page for managing the page view mode in response to receiving a trigger on the target navigation tab, and the user may select a desired view mode via the interaction page. The user may manage the page easily and conveniently, and the efficiency of the user in managing the page may be improved.

[0028] Various example implementations of the solution are described in detail below with further reference to the drawings.

Example Environment

[0029] Fig. 1 shows a schematic diagram of an example environment 100 in which the embodiments of the present disclosure may be implemented. As shown in Fig. 1, the example environment 100 may include an electronic device 110.

[0030] In the example environment 100, an application 120 supporting page interaction may be run on the electronic device 110. The application 120 may be any appropriate type of application for page interaction, examples of which may include but are not limited to a video application, a social application, or other appropriate applications. A user 140 may interact with the application 120 via the electronic device 110 and/or its attached device.

[0031] In some embodiments, the application 120 may be a content sharing application (e.g., a video application focusing on video sharing), which may provide the user 140 with various services related to media content items,

including content browsing, commenting, forwarding, creation (e.g., shooting and/or editing), posting, and so on. In some embodiments, the application 120 may also be any other appropriate application in which media content may be presented. As used herein, "media content" may include one or more types of content, such as a video, an image, a gif image, an image set, an audio, a text, or a combination thereof, and so on.

[0032] In the environment 100 of Fig. 1, if the application 120 is active, the electronic device 110 may present, through the application 120, a page 150 for supporting page interaction. The page 150 may include various types of pages that may be provided by the application 120, such as a content presentation page, a content creation page, a content posting page, a message page, a personal homepage, and so on. The application 120 may provide a content viewing function to view various types of content posted in the application 120. Via the corresponding page, the application 120 may provide the user 140 with content associated with the media content or shopping content. With an appropriate manner, such as clicking or selecting a page element, the application 120 may also provide the user 140 with a selection and a switch of presentation manners of the associated content.

[0033] In some embodiments, the electronic device 110 communicates with a server 130 to implement the provision of the services of the application 120. The electronic device 110 may be any type of mobile terminal, fixed terminal, or portable terminal, including a mobile phone, a desktop computer, a laptop computer, a notebook computer, a netbook computer, a tablet, a media computer, a multimedia tablet, a personal communication system (PCS) device, a personal navigation device, a personal digital assistant (PDA), an audio/video player, a digital camera/video camera, a positioning device, a TV receiver, a radio broadcast receiver, an e-book device, a game device, or any combination thereof, including the accessories and peripherals of these devices or any combination thereof. In some embodiments, the electronic device 110 may also support any type of user-specific interface (such as "wearable" circuitry, etc.).

[0034] The server 130 may be an independent physical server, a server cluster or a distributed system composed of multiple physical servers, or a cloud server that provides basic cloud computing services such as cloud services, cloud databases, cloud computing, cloud functions, cloud storage, network services, cloud communications, middleware services, domain name services, security services, content delivery networks, and big data and artificial intelligence platforms. The server 130 may include, for example, a computing system/server, such as a mainframe, an edge computing node, a computing device in a cloud environment, and so on. The server 130 may provide backend services for the application 120 supporting content presentation in the electronic device 110.

[0035] A communication connection may be established between the server 130 and the electronic device 110. The communication connection may be established by wire or wirelessly. The communication connection may include but is not limited to a Bluetooth connection, a mobile network connection, a universal serial bus connection, a Wi-Fi connection, etc., and the embodiments of the present disclosure are not limited in this regard. In the embodiments of the present disclosure, the server 130 and the electronic device 110 may implement signaling interaction through the communication connection therebetween.

[0036] It should be understood that the structures and functions of the elements in the environment 100 are described for illustrative purposes only, and do not imply any limitation on the scope of the present disclosure.

Example Interaction

[0037] The example process of page interaction according to the embodiments of the present disclosure is described below with reference to the drawings.

[0038] Figs. 2A to 2J show schematic diagrams of example pages 200A to 200J (which may also be referred to as examples 200A to 200J for short) according to some embodiments of the present disclosure. It should be understood that the pages shown in the drawings are only examples, and various page designs may actually exist. Each graphic element in a page may have different arrangements and different visual representations, one or more elements therein may be omitted or replaced, and there may also be one or more other elements. The embodiments of the present disclosure are not limited in this regard. The pages shown in examples 200A to 200J may be presented at the electronic device 110. For the convenience of discussion, examples 200A to 200J will be described with reference to the environment 100 of Fig. 1.

[0039] In the environment 100, the electronic device 110 presents a page 150 of the application 120. In some cases, the page 150 presented by the electronic device 110 may be a specific page of the application 120, in which the media content is presented. In some embodiments, the page refers to a page for displaying or pushing media content and other related information to the user, which may also be referred to as a content display page. The page may present a group of media items, and the group of media items may include one or more media items. A group of media items to be presented in a specific page may be determined according to application design requirements. The specific media content to be displayed in the group of media items and the number thereof will vary in different scenarios.

[0040] In some embodiments, the page may include a page currently displayed in the application 120, such as a homepage of the application 120, or a recommended homepage in a group of homepage pages of the application 120. The recommended content items displayed to the user in the recommended homepage are sometimes referred to as a recommended information flow. In some embodiments, the page may include other pages under the homepage of the application 120, such as a follow page (in which the media content items posted by a group of users followed by the current user are displayed), a local page (in which the media content items posted by other users in the same area as the current user are displayed), or the media content items aggregated or classified in other manners.

[0041] If there is a lot of complex information to be presented in the application, the information is often presented in categories to facilitate the user to obtain the information in a more concise manner. Presenting the information in categories often requires setting a plurality of navigation tabs corresponding to different information on the page. By switching to a different navigation tab, the user may obtain the page corresponding to the tab. In some embodiments, the application 120 may provide navigation tabs for navigating to different pages. In the embodiments of the present disclosure, a certain page, including the page, may be presented at least by selecting a predetermined navigation tab. That is, the predetermined navigation tab in the application may be used to navigate to the page.

[0042] As shown in Fig. 2A, example 200A shows an example of the page of the application 120. Example 200A includes a plurality of navigation tabs for navigating to various pages, such as "Local", "Follow", "Recommend", "Homepage", "Friends", and so on. The plurality of navigation tabs may further have different levels, for example,

the navigation tabs "Homepage", "Friends", etc. may have a first level, and the navigation tabs "Local", "Follow", "Recommend" may have a second level. For example, the navigation tab with the first level may correspond to a group of pages (e.g., a group of homepage pages), and the page corresponding to the navigation tab with the second level may be at least one of the group of pages corresponding to the navigation tab with the first level (e.g., the recommended homepage corresponding to the navigation tab "Recommend" is one of the group of homepage pages corresponding to the navigation tab "Homepage"). In some embodiments, example 200A includes a navigation bar 205, and the navigation bar 205 includes a plurality of navigation tabs. For example, the navigation bar 205 may include a plurality of navigation tabs with the first level. As an example, the navigation bar 205 may be located at the edge of the interface of example 200A, for example, at the bottom.

[0043] For example, in example 200A shown in Fig. 2A, the navigation bar 205 includes a navigation tab 210, and the navigation tab 210 is a tab "Homepage". If the electronic device 110 detects a selection operation on the navigation tab 210, the homepage of the application 120 may be presented. For example, the electronic device 110 may present a recommended homepage (i.e., a page corresponding to the navigation tab "Recommend") in the plurality of homepages by default. On this basis, if the electronic device 110 detects a selection operation on the navigation tab "Follow", it may switch to presenting a follow homepage (i.e., a page corresponding to the navigation tab "Follow") in the plurality of homepages.

[0044] In the embodiments of the present disclosure, the electronic device 110 presents a specific page, such as a specific page of the application 120. The page is at least used to present a group of media items. In some embodiments, the electronic device 110 may present the group of media items in any appropriate view mode (e.g., a default view mode which may be a view mode preset by the user, or a historical view mode when the user exits the application and/or the page last time) in the page.

[0045] In some embodiments, if the electronic device 110 detects the selection operation on the navigation tab 210, one of a group of homepage pages may be presented, for example, the recommended homepage may be presented. It should be understood that this is only illustrative, and is not intended to limit the solution of the present disclosure. In some embodiments, alternatively or additionally, the page may also be presented by detecting a start operation of the application, for example, the page is a default page presented when the application is started. When presented after the application is started, a group of media items may be presented in the page in a default view mode. That is, in the absence of user selection of the navigation tab, the page may be the default page after the application 120 is started.

[0046] In some embodiments, the electronic device 110 may support displaying a group of media items in a plurality of view modes. The plurality of view modes may at least include, for example, a single view mode, at least one multi-column view mode (including but not limited to a double-column view mode, a three-column view mode, etc.), and at least one multi-row view mode, and so on. The single view mode may present a complete media item and provide rich information, and the at least one multi-column view mode and the at least one multi-row view mode facilitate the user to explore more contents of interest. Providing a plurality of view modes may facilitate the user to select or switch the view mode for displaying the group of media items according to his/her preference.

[0047] In some embodiments, application pages corresponding to different view modes may be referred to as different pages. For example, a page displaying a first group of media items in a first view mode may be referred to as a first page, and a page displaying a group of media items in a view mode selected by the user may be referred to as a second page. If the selected view mode is different from the first view mode, the media content included in the first group of media items and the second group of media items is at least partially different.

[0048] In some embodiments, as shown in Fig. 2A, the electronic device 110 may present example 200A. As shown in the figure, example 200A may be referred to as a first page, and example 200A may present a first group of media items in a plurality of media items in a first view mode (e.g., a single view mode). Example 200A includes a navigation bar 205, and the navigation bar 205 includes a plurality of navigation tabs (the plurality of navigation tabs include at least a navigation tab 210). The electronic device 110 may determine that a navigation request for a target navigation tab (e.g., the navigation tab 210) in the plurality of navigation tabs is received in response to receiving a trigger operation from the user for the target navigation tab. The trigger operation includes but is not limited to a single-click operation, a double-click operation, a long-press operation, a hover operation, and the like on the navigation tab. It may be understood that the present disclosure does not limit the specific trigger operation. The electronic device 110 may further display an interaction page in response to receiving the navigation request for the target navigation tab.

[0049] The interaction page may include at least a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, wherein the first view mode is different from the second view mode. The first access entry may include, for example, first media content of the first group of media items, and the second access entry may include, for example, second media content of a second group of media items to be displayed in the second view mode. The first access entry and the second access entry may be presented in the interaction page in the form of, for example, cards.

[0050] The first access entry and the second access entry may be presented in the interaction page in any appropriate display manner. For example, the first access entry and the second access entry may be displayed side by side in the interaction page. In this case, the plurality of access entries may be displayed in a smaller size, and each access entry is completely displayed. The first media content may include, for example, all of the first group of media content of the first group of media items, and the second media content may include, for example, all of the second group of media content of the second group of media items.

[0051] For another example, the first access entry and the second access entry may also be superimposed and displayed according to a predetermined hierarchical relationship. As shown in Fig. 2B, example 200B shows an example of the interaction page. The electronic device 110 may display example 200B in response to receiving the navigation request for the navigation tab 210. Taking the first view mode being the single view mode and the second view mode being the double-column view mode as an example, the access entry 220 for the single view mode and the access entry 230 for the double-column view mode may be superimposed and displayed in example 200B according to the predetermined hierarchical relationship.

[0052] In this case, there is occlusion between the first access entry and the second access entry (the access entry superimposed and displayed above will occlude a portion of the access entry displayed below). The first media content may include, for example, at least a portion of the first group of media content of the first group of media

items, and the second media content may include, for example, at least a portion of the second group of media content of the second group of media items. For example, if the first access entry is superimposed and displayed above the second access entry, the first media content may include, for example, all of the first group of media content of the first group of media items, and the second media content may include, for example, a portion of the second group of media content of the second group of media items. As shown in the figure, the access entry 220 at the top includes the entire picture of a single media item in the single view mode, and the access entry 230 in the lower layer includes partial pictures of a plurality of media items in the double-column view mode.

[0053] This predetermined hierarchical relationship may be determined, for example, based on the chronological order in which the first view mode and the second view mode are selected. For example, the access entry corresponding to the view mode selected recently may be superimposed and presented above the access entry corresponding to the view mode selected earlier. For example, if the user applied the double-column view mode a month ago (i.e., the electronic device 110 displayed the page corresponding to the double-column view mode), and the user has applied the single view mode within a month (i.e., the electronic device 110 displayed the page corresponding to the single view mode), the electronic device 110 may superimpose and present the access entry 220 corresponding to the single view mode above the access entry 230 corresponding to the double-column view mode.

[0054] It may be understood that the interaction page may include any appropriate number of access entries. For example, the interaction page may further include a third access entry corresponding to a third view mode. In this case, the first access entry, the second access entry, and the third access entry may be presented in the interaction page in any appropriate display manner. As shown in Fig. 2C, example 200C shows an example of the interaction page. Taking the first view mode being the single view mode, the second view mode being the double-column view mode, and the third view mode being the multi-row view mode as an example, the access entry 220 for the single view mode, the access entry 230 for the double-column view mode, and the access entry 250 for the multi-row view mode may be superimposed and displayed in example 200C according to the predetermined hierarchical relationship.

[0055] For example, if the user applied the multi-row view mode a month ago, the user applied the double-column view mode a week ago, and the user has applied the single view mode within a week, the electronic device 110 may superimpose and present the access entry 230 for the double-column view mode above the access entry 250 for the multi-row view mode, and superimpose and present the access entry 220 for the single view mode above the access entry 230 for the double-column view mode. It should be understood that although Fig. 2C shows that the plurality of access entries has the same height and the same spacing, alternatively and/or additionally, the plurality of access entries may have different heights and/or different spacings.

[0056] In this way, because it is more likely that the user will continue to use the current view mode, the electronic device 110 may present the access entry corresponding to the view mode recently applied by the user above other access entries, which facilitates the user to continue to select the current view mode.

[0057] In some embodiments, because the first page presents the first group of media items in the first view mode, and the electronic device 110 displays the interaction page in response to the navigation request for the target navigation tab in the first page, the first view mode may be referred to as a current default view mode. For

example, the electronic device 110 may superimpose and display the access entry corresponding to the default view mode on the upper layer of other access entries. For example, the electronic device 110 may superimpose and display the first access entry corresponding to the first view mode above the second access entry corresponding to the second view mode.

[0058] Continuing to refer to Fig. 2A, Fig. 2B, and Fig. 2C, the electronic device 110 presents the first group of media items in a single view mode in example 200A, and the electronic device 110 may present example 200B or example 200C in response to receiving the navigation request for the navigation tab 210 in example 200A. In example 200B, the access entry 220 for the single view mode is superimposed and presented above the access entry 230 for the double-column view mode. In example 200C, the access entry 220 for the single view mode is superimposed and presented above the access entry 230 for the double-column view mode and the access entry 250 for the multi-row view mode.

[0059] Similarly, referring to Fig. 2D and Fig. 2E, example 200D shows an example of a page and example 200E shows an example of an interaction page. The electronic device 110 presents the first group of media items in the double-column view mode in example 200D, and the electronic device 110 may present example 200E in response to receiving the navigation request for the navigation tab 210 in example 200D. In example 200E, the access entry 230 for the double-column view mode is superimposed and presented above the access entry 220 for the single view mode. Therefore, the interaction page may be presented according to the view mode currently applied by the user, which facilitates the user to continue to select the view mode currently applied, and may improve the efficiency of page management.

[0060] In some embodiments, the electronic device 110 may further determine that a swipe request for the interaction page is received in response to receiving a swipe operation in the interaction page. The electronic device 110 may adjust at least one of the display position or the size of the display area (e.g., height and/or width) of the first access entry and the second access entry based on the swipe request, in response to receiving the swipe request for the interaction page.

[0061] Reference is made to Fig. 2B, Fig. 2F, and Fig. 2G, wherein Fig. 2F and Fig. 2G show two examples of the interaction page. For example, the electronic device 110 may present example 200F in response to receiving a swipe request for example 200B (e.g., receiving a rightward swipe operation from the user). As shown in example 200F, compared with example 200B, the display position of the access entry 220 is moved to the right, and the size of the display area of the access entry 220 is reduced. Although the display position of the access entry 230 is not changed, the size of the display area of the access entry 230 is increased. Alternatively and/or additionally, the access entry in the lower layer may move with the swipe operation, and the moving distance of the access entry in the lower layer may be smaller than the moving distance of the access entry on the upper layer. For example, the access entry 230 may move a smaller distance to the right, and the access entry 220 may move a larger distance to the right, thereby increasing the display area of the access entry 230, and the like.

[0062] In some embodiments, for example, the electronic device 110 may present example 200G in response to receiving a swipe request for example 200F (e.g., receiving a rightward swipe operation from the user). As shown in example 200G, compared with example 200F, the display position of the access entry 220 is moved to the right, and the size of the display area of the access entry 220 is reduced. The display position of the access entry

230 is moved to the right, and the size of the display area of the access entry 230 is increased. In some embodiments, in response to the display position of the access entry 230 coinciding with a target position, the electronic device 110 may adjust the hierarchical relationship among the plurality of access entries. The target position may be, for example, the center position of the interaction page. The electronic device 110 may superimpose and display the access entry 230 above other access entries in response to the access entry 230 being moved to the center position.

[0063] In some embodiments, the background color of the interaction page may be determined based on the colors of the plurality of access entries. The background color of the interaction page is also the color of the background layer of the interaction page. The background layer of a page refers to the page content that the user cannot directly operate on currently, and the active layer of a page refers to the page content that the user may directly operate on currently. For example, the plurality of access entries is presented in the active layer of the interaction page to allow the user to perform selection operations on the plurality of access entries.

[0064] The background color of the interaction page may be determined, for example, based on the access entry that is superimposed and displayed at the top, and different access entries may correspond to different colors. For example, in example 200B, the background color of example 200B may be determined based on the access entry 220. In example 200G, the background color of example 200G is determined based on the access entry 230.

[0065] The background color of the interaction page may also be determined based on, for example, the display areas of the plurality of access entries. For example, in example 200F, if the access entry 220 corresponds to a dark color and the access entry 230 corresponds to a light color, the background color of example 200F may be a gradient color, with the left side of the interaction page being light and the right side being dark. For another example, the background color of the interaction page may also be an average color of the colors corresponding to the plurality of interaction pages. For example, in example 200F, if the access entry 220 corresponds to a dark color and the access entry 230 corresponds to a light color, the background color of example 200F may be an intermediate color. In this way, the background color may be presented in a color that coordinates with the access entry. Alternatively and/or additionally, the brightness of the background color may be adjusted, for example, the brightness of the background color may be reduced to highlight the access entry.

[0066] The electronic device 110 may display the second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry. For example, the electronic device 110 may determine the access entry currently corresponding to the largest display area as the selected access entry. For another example, the electronic device 110 may also determine the access entry superimposed and presented above other access entries (i.e., the access entry presented at the top) as the selected access entry. For another example, the electronic device 110 may also determine an access entry as the selected access entry in response to receiving a selection operation (e.g., a click operation) on the access entry. The electronic device 110 may determine that the selection request for the target access entry is received in response to determining that the target access entry is the selected access entry.

[0067] The second page includes a group of media items displayed in a target view mode corresponding to the target access entry. It may be understood that the target view mode corresponding to the second page and the

first view mode corresponding to the first page may be the same view mode, or may be different view modes. Taking the target view mode being the second view mode different from the first view mode as an example, the electronic device 110 may determine that the second group of media items will be displayed in the second view mode in the second page, in response to the second access entry being selected.

[0068] In some embodiments, the interaction page may further include a refresh control for refreshing the first group of media items. The refresh control may be presented at a first position corresponding to the target navigation tab in the interaction page and/or a second position associated with the first access entry and the second access entry in the interaction page. Continuing to refer to Fig. 2B, example 200B may include a refresh control 215 and a refresh control 240. The refresh control 215 is presented at a position corresponding to the navigation tab 210, and the refresh control 240 is presented at a position associated with the access entry 220 and the access entry 230 (e.g., a position below these two access entries).

[0069] It may be understood that the interaction page may include at least one refresh control. If the interaction page includes a plurality of refresh controls, the functions of the plurality of refresh controls may be the same or different. Continuing to refer to Fig. 2B, example 200B may include the refresh control 215 and the refresh control 240. For example, both the refresh control 215 and the refresh control 240 may be used to refresh the first group of media items. For example, the refresh control 215 may be used to refresh the first group of media items, and the refresh control 240 may be used to refresh the interaction page (e.g., to refresh the access entry in the interaction page, to refresh the background color of the interaction page, etc.). For the convenience of description, the following uses an example in which multiple refresh controls are all used to refresh the first group of media items for description.

[0070] In some embodiments, the electronic device 110 may determine that a refresh request for the refresh control is received in response to receiving a trigger operation on the refresh control. The electronic device 110 may refresh the first group of media items in response to receiving the refresh request for the refresh control. For example, the electronic device 110 may refresh the first group of media items and present the second page in response to receiving the refresh request for the refresh control.

[0071] Taking Fig. 2G and Fig. 2H as an example, Fig. 2H shows an example of a page. In the interaction page shown in example 200G, the electronic device 110 may determine that the access entry 230 is selected (i.e., the double-column view mode is selected). In response to receiving a trigger operation on the refresh control 215 or the refresh control 240, the electronic device 110 may refresh the first group of media items, present example 200H, and present the second group of media items in the double-column view mode in example 200H. In some embodiments, if the view mode corresponding to the second page is different from the view mode corresponding to the first page, the electronic device 110 may further present a switch control 260 in the second page. For example, the electronic device 110 may directly switch back to the first page in response to receiving a trigger operation on the switch control 260.

[0072] In some embodiments, in the process of refreshing the first group of media items, the electronic device 110 may display a refresh waiting page in the second page in response to determining that the refreshing has not been completed. The refresh waiting page includes the refresh control, and the refresh control is displayed at the position corresponding to the target navigation tab. The electronic device 110 may display the refreshed first

group of media items in the second page in response to determining that the refreshing has been completed, wherein the second page includes the target navigation tab. That is, the navigation bar of the refresh waiting page and the navigation bar of the second page may include different content.

[0073] In some embodiments, if the target view mode corresponding to the second page is the same as the first view mode of the first page, the electronic device 110 may still present different media content (i.e., present the refreshed media content) in the second page and the first page. Taking Fig. 2B, Fig. 2I, and Fig. 2J as an example, Fig. 2I shows an example of the refresh waiting page, and Fig. 2J shows an example of the page. In the interaction page shown in example 200B, the electronic device 110 may determine that the access entry 220 is selected (i.e., the single view mode is selected). The electronic device 110 may refresh the first group of media items in response to receiving a trigger operation on the refresh control 215 or the refresh control 240. In the refreshing process, the electronic device 110 may present example 200I in response to the refreshing not being completed, and example 200I includes the refresh control 215. The electronic device 110 may present example 200J in response to the refreshing being completed, and example 200J includes the navigation tab 210. The navigation tab 210 and the refresh control 215 may correspond to the same position.

[0074] In this way, in response to receiving the trigger on the target navigation tab, the user may be provided with the interaction page for managing the page view mode, and the user may present the content of the media item to be presented in the view mode via a plurality of access entries in the interaction page, thereby the user is facilitated to select the desired view mode. The user may manage the page easily and conveniently, and the efficiency of the user in managing the page may be improved. Further, the plurality of access entries may be displayed in a partially overlapping manner, thereby supporting the presentation of more information in a limited display area.

Example Process

[0075] Fig. 3 shows a flowchart of a method 300 for page management according to some embodiments of the present disclosure. The method 300 may be implemented at the electronic device 110. The method 300 is described below with reference to Fig. 1.

[0076] As shown in Fig. 3, at block 310, the electronic device 110 displays a first page, the first page displays a first group of media items in a plurality of media items in a first view mode, and the first page includes a navigation bar having a plurality of navigation tabs.

[0077] At block 320, the electronic device 110 displays an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page includes at least: a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, wherein the first access entry includes first media content of the first group of media items, and the second access entry includes second media content of a second group of media items to be displayed in the second view mode.

[0078] At block 330, the electronic device 110 displays a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, wherein the second page includes a group of media items displayed in a target view mode corresponding to the target access entry.

[0079] In some embodiments, the first access entry and the second access entry are superimposed and displayed according to a predetermined hierarchical relationship, the predetermined hierarchical relationship is determined based on a chronological order in which the first view mode and the second view mode are selected.

[0080] In some embodiments, the first access entry is superimposed and displayed on an upper layer with respect to the second access entry, and the first view mode is a default view mode.

[0081] In some embodiments, the first media content includes at least a portion of a first group of media content of the first group of media items, and the second media content includes at least a portion of a second group of media content of the second group of media items.

[0082] In some embodiments, the method 300 further includes: in response to receiving a swipe request for the interaction page, adjusting, based on the swipe request, at least one of the following of the first access entry and the second access entry: a display position, or a size of a display area.

[0083] In some embodiments, the interaction page further includes a refresh control for refreshing the first group of media items, and the method 300 further includes: refreshing the first group of media items in response to receiving a refresh request for the refresh control.

[0084] In some embodiments, refreshing the first group of media items includes: in response to determining that the refreshing has not been completed, displaying a refresh waiting page in the second page, the refresh waiting page including the refresh control displayed at a position corresponding to the target navigation tab.

[0085] In some embodiments, refreshing the first group of media items includes: in response to determining that the refreshing has been completed, displaying the refreshed first group of media items in the second page, the second page including the target navigation tab.

[0086] In some embodiments, the refresh control is presented in at least one of the following positions: a first position corresponding to the target navigation tab in the interaction page; or a second position associated with the first access entry and the second access entry in the interaction page.

[0087] In some embodiments, the first view mode includes any of a plurality of view modes, the second view mode includes another of the plurality of view modes, and the plurality of view modes include: a single view mode, a multi-row view mode, and a multi-column view mode.

Example Apparatus and Device

[0088] An embodiment of the present disclosure further provides a corresponding apparatus for implementing the above method or process. Fig. 4 shows an example structural block diagram of an apparatus 400 for page management according to some embodiments of the present disclosure. The apparatus 400 may be implemented as or included in the electronic device 110. Each module/component in the apparatus 400 may be implemented by hardware, software, firmware, or any combination thereof.

[0089] As shown in Fig. 4, the apparatus 400 includes a first page display module 410 configured to display a first page, the first page displaying a first group of media items in a plurality of media items in a first view mode, the first page including a navigation bar having a plurality of navigation tabs; an interaction page display module 420 configured to display an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page including at least: a first access entry corresponding

to the first view mode and a second access entry corresponding to a second view mode, the first access entry including first media content of the first group of media items, and the second access entry including second media content of a second group of media items to be displayed in the second view mode; and a second page display module 430 configured to display a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, the second page including a group of media items displayed in a target view mode corresponding to the target access entry.

[0090] In some embodiments, the first access entry and the second access entry are superimposed and displayed according to a predetermined hierarchical relationship, the predetermined hierarchical relationship being determined based on a chronological order in which the first view mode and the second view mode are selected.

[0091] In some embodiments, the first access entry is superimposed and displayed on an upper layer with respect to the second access entry, and the first view mode is a default view mode.

[0092] In some embodiments, the first media content includes at least a portion of a first group of media content of the first group of media items, and the second media content includes at least a portion of a second group of media content of the second group of media items.

[0093] In some embodiments, the apparatus 400 further includes: an access entry adjustment module configured to, in response to receiving a swipe request for the interaction page, adjust, based on the swipe request, at least one of the following of the first access entry and the second access entry: a display position, or a size of a display area.

[0094] In some embodiments, the interaction page further includes a refresh control for refreshing the first group of media items, and the apparatus 400 further includes: a refresh module configured to refresh the first group of media items in response to receiving a refresh request for the refresh control.

[0095] In some embodiments, the refresh module is further configured to: in response to determining that the refreshing has not completed, display a refresh waiting page in the second page, the refresh waiting page including the refresh control displayed at a position corresponding to the target navigation tab.

[0096] In some embodiments, the refresh module is further configured to: in response to determining that the refreshing has been completed, display the refreshed first group of media items in the second page, the second page including the target navigation tab.

[0097] In some embodiments, the refresh control is presented in at least one of the following positions: a first position corresponding to the target navigation tab in the interaction page; or a second position associated with the first access entry and the second access entry in the interaction page.

[0098] In some embodiments, the first view mode includes any of a plurality of view modes, the second view mode includes another of the plurality of view modes, and the plurality of view modes include: a single view mode, a multi-row view mode, and a multi-column view mode.

[0099] The modules included in the apparatus 400 may be implemented in various ways, including software, hardware, firmware, or any combination thereof. In some embodiments, one or more units may be implemented using software and/or firmware, such as machine executable instructions stored on a storage medium. In addition to machine executable instructions or as an alternative, some or all modules in the apparatus 400 may be implemented at least partially by one or more hardware logic components. As an example, rather than a limitation,

example types of hardware logic components that may be used include field programmable gate array (FPGA), application specific integrated circuit (ASIC), application specific standard product (ASSP), system on chip (SOC), complex programmable logical device (CPLD), and so on.

[0100] Fig. 5 shows a block diagram of an electronic device 500 with which one or more embodiments of the present disclosure may be implemented. It should be understood that the electronic device 500 shown in Fig. 5 is only illustrative, and should not constitute any limitation on the function and scope of the embodiments described herein. The electronic device 500 shown in Fig. 5 may be used to implement the electronic device 110 of Fig. 1.

[0101] As shown in Fig. 5, the electronic device 500 is in the form of a general electronic device. The components of the electronic device 500 may include but are not limited to one or more processors or processing units 510, a memory 520, a storage device 530, one or more communication units 540, one or more input devices 550, and one or more output devices 560. The processing unit 510 may be an actual or virtual processor and may execute various processes based on the program stored in the memory 520. In a multi-processor system, multiple processing units execute computer executable instructions in parallel to improve the parallel processing capability of the electronic device 500.

[0102] The electronic device 500 typically includes multiple computer storage medium. Such medium may be any available medium accessible by the electronic device 500, including but not limited to volatile and non-volatile medium, removable and non-removable medium. The memory 520 may be a volatile memory (for example, a register, a cache, a random access memory (RAM)), a non-volatile memory (such as a read-only memory (ROM), an electrically erasable programmable read-only memory (EEPROM), a flash memory), or any combination thereof. The storage device 530 may be any removable or non-removable medium, and may include a machine readable medium such as a flash drive, a disk, or any other medium, which may be used to store information and/or data and may be accessed within the electronic device 500.

[0103] The electronic device 500 may further include additional removable/non-removable, volatile/non-volatile memory medium. Although not shown in Fig. 5, a disk driver for reading from or writing to a removable, non-volatile disk (such as a "floppy disk"), and an optical disk driver for reading from or writing to a removable, non-volatile optical disk may be provided. In these cases, each driver may be connected to the bus (not shown) by one or more data medium interfaces. The memory 520 may include a computer program product 525, which has one or more program modules configured to perform various methods or acts of various embodiments of the present disclosure.

[0104] The communication unit 540 implements communication with other electronic devices through the communication medium. Additionally, the functions of the components of the electronic device 500 may be implemented by a single computing cluster or multiple computing machines, which may communicate through communication connections. Therefore, the electronic device 500 may use a logical connection with one or more other servers, network personal computers (PCs) or another network node to operate in a networked environment.

[0105] The input device 550 may be one or more input devices, such as a mouse, a keyboard, a tracking ball, etc. The output device 560 may be one or more output devices, such as a display, a speaker, a printer, etc. The electronic device 500 may also communicate with one or more external devices (not shown) as needed through

the communication unit 540, the external devices such as a storage device, a display device, etc., communicate with one or more devices that enable the user to interact with the electronic device 500, or communicate with any devices (e.g., a network card, a modem, etc.) that enable the electronic device 500 to communicate with one or more other electronic devices. Such communication may be performed via input/output (I/O) interfaces (not shown).

[0106] According to an example implementation of the present disclosure, there is provided a computer-readable storage medium having computer executable instructions stored thereon, where the computer executable instructions are executed by a processor to implement the method described above. According to an example implementation of the present disclosure, there is further provided a computer program product tangibly stored on a non-transitory computer-readable medium and including computer executable instructions, the computer executable instructions are executed by a processor to implement the method described above.

[0107] Various aspects of the present disclosure are described herein with reference to the flowcharts and/or block diagrams of the method, the apparatus, the device, and the computer program product implemented according to the present disclosure. It should be understood that each block of the flowchart and/or block diagram, and a combination of each block in the flowchart and/or block diagram may be implemented by computer-readable program instructions.

[0108] These computer-readable program instructions may be provided to a processing unit of a general-purpose computer, a special-purpose computer, or other programmable data processing apparatus, so as to produce a machine, such that these instructions, when executed by the processing unit of the computer or other programmable data processing apparatus, produce an apparatus for implementing a specific function/action in one or more blocks in the flowchart and/or block diagram. These computer-readable program instructions may also be stored in a computer-readable storage medium, and these instructions cause the computer, the programmable data processing apparatus, and/or other devices to work in a specific manner, so that the computer-readable medium having the instructions stored thereon includes a manufactured product, which includes instructions for implementing various aspects of the specific function/action in one or more blocks in the flowchart and/or block diagram.

[0109] The computer-readable program instructions may be loaded onto a computer, another programmable data processing apparatus, or other devices, such that a series of operations and steps are performed on the computer, the other programmable data processing apparatus, or the other devices, to generate a computer-implemented process, so that the instructions executed on the computer, the other programmable data processing apparatus, or the other devices implement the specific function/action in one or more blocks in the flowchart and/or block diagram.

[0110] The flowchart and block diagram in the drawings show the possibly implemented architectures, functions, and operations of the system, the method, and the computer program product according to multiple implementations of the present disclosure. In this regard, each block in the flowchart or block diagram may represent a module, program segment, or a part of instructions, and the module, program segment, or the part of instructions contains one or more executable instructions for implementing a specific logical function. In some alternative implementations, the functions marked in the block may also occur in an order different from that

marked in the drawings. For example, two consecutive blocks may actually be performed substantially in parallel, or they may sometimes be performed in the reverse order, depending on the functions involved. It should also be noted that each block in the block diagram and/or the flowchart, and the combination of the blocks in the block diagram and/or the flowchart may be implemented by a dedicated hardware-based system that executes specific functions or actions, or may be implemented by a combination of dedicated hardware and computer instructions.

[0111] The implementations of the present disclosure have been described above, and the above description is illustrative, non-exhaustive, and not limited to the disclosed implementations. Without departing from the scope and spirit of the illustrated implementations, many modifications and changes will be apparent to those of ordinary skill in the art. The terms used herein are selected to best explain the principles of the implementations, the actual applications or improvements to the technologies in the market, or to enable other those of ordinary skill in the art to understand the implementations disclosed herein.

CLAIMS

1. A method of page management, comprising:
 - displaying a first page, the first page displaying a first group of media items in a plurality of media items in a first view mode, the first page comprising a navigation bar having a plurality of navigation tabs;
 - displaying an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page comprising at least: a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, the first access entry comprising first media content of the first group of media items, and the second access entry comprising second media content of a second group of media items to be displayed in the second view mode; and
 - displaying a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, the second page comprising a group of media items displayed in a target view mode corresponding to the target access entry.
2. The method of claim 1, wherein the first access entry and the second access entry are superimposed and displayed according to a predetermined hierarchical relationship, the predetermined hierarchical relationship being determined based on a chronological order in which the first view mode and the second view mode are selected.
3. The method of claim 2, wherein the first access entry is superimposed and displayed on an upper layer with respect to the second access entry, and the first view mode is a default view mode.
4. The method of claim 1, wherein the first media content comprises at least a portion of a first group of media content of the first group of media items, and the second media content comprises at least a portion of a second group of media content of the second group of media items.
5. The method of claim 1, further comprising: in response to receiving a swipe request for the interaction page, adjusting, based on the swipe request, at least one of the following of the first access entry and the second access entry: a display position, or a size of a display area.
6. The method of claim 1, wherein the interaction page further comprises a refresh control for refreshing the first group of media items, and the method further comprises: refreshing the first group of media items in response to receiving a refresh request for the refresh control.
7. The method of claim 6, wherein refreshing the first group of media items comprises: in response to determining that the refreshing has not been completed, displaying a refresh waiting page in the second page, the refresh waiting page comprising a refresh control displayed at a position corresponding to the target

navigation tab.

8. The method of claim 6, wherein refreshing the first group of media items comprises: in response to determining that the refreshing has been completed, displaying the refreshed first group of media items in the second page, the second page comprising the target navigation tab.

9. The method of claim 6, wherein the refresh control is presented in at least one of the following positions:
a first position corresponding to the target navigation tab in the interaction page; or
a second position associated with the first access entry and the second access entry in the interaction page.

10. The method of claim 1, wherein the first view mode comprises any of a plurality of view modes, the second view mode comprises another of the plurality of view modes, and the plurality of view modes comprise: a single view mode, a multi-row view mode, and a multi-column view mode.

11. An apparatus for page management, comprising:

a first page display module configured to display a first page, the first page displaying a first group of media items in a plurality of media items in a first view mode, the first page comprising a navigation bar having a plurality of navigation tabs;

an interaction page display module configured to display an interaction page in response to receiving a navigation request for a target navigation tab in the plurality of navigation tabs, the interaction page comprising at least: a first access entry corresponding to the first view mode and a second access entry corresponding to a second view mode, the first access entry comprising first media content of the first group of media items, and the second access entry comprising second media content of a second group of media items to be displayed in the second view mode; and

a second page display module configured to display a second page in response to receiving a selection request for a target access entry in the first access entry and the second access entry, the second page comprising a group of media items displayed in a target view mode corresponding to the target access entry.

12. An electronic device, comprising:

at least one processing unit; and

at least one memory coupled to the at least one processing unit and storing instructions executable by the at least one processing unit, the instructions, when executed by the at least one processing unit, causing the electronic device to perform the method of any of claims 1 to 10.

13. A computer-readable storage medium having a computer program stored thereon, the computer program being executable by a processor to implement the method of any of claims 1 to 10.

14. A computer program product tangibly stored in a computer storage medium and comprising computer

executable instructions, the computer executable instructions, when executed by a device, causing the device to perform the method of any of claims 1 to 10.