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

[0001] The present application claims priority to Chinese Patent Application No. 202410853020.7, filed on June 27, 2024 and entitled "METHOD, APPARATUS, DEVICE, MEDIUM, AND PROGRAM PRODUCT FOR APPLICATION PAGE MANAGEMENT", which is hereby incorporated by reference in its entirety.

FIELD

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

BACKGROUND

[0003] Currently, more and more applications are designed to provide various services to users. For example, a user may post, browse, and view media items in an application. The media item may include various types of content such as a video, an image, an image set, a text, an audio, and the like. The user may perform any appropriate type of operation on the media item in the application, such as liking, collecting, commenting, sharing, and the like on the media item. The user may also interact with other users in the application, such as liking, collecting, commenting, etc., on content posted by other users, or following other users, visiting personal home pages of other users, and the like.

SUMMARY

[0004] In a first aspect of the present disclosure, a method for managing an application page is provided. The method includes: displaying, in a display area of an electronic device, the application page comprising a first set of page elements for launching a set of function pages; dividing, in response to receiving an interaction request for a first page element in the first set of page elements, the display area into a first area and a second area; and displaying, in the first area, a first function page launched by the first page element, and displaying, in the second area, the application page comprising a media item; and displaying, in response to receiving, in the second area, an operation request for operating the media item, a reply to the operation request in the second area.

[0005] In a second aspect of the present disclosure, an apparatus for managing an application page is provided. The apparatus includes: a displaying module configured to display, in a display area of an electronic device, the application page comprising a first set of page elements for launching a set of function pages; a dividing module configured to divide, in response to receiving an interaction request for a first page element in the first set of page elements, the display area into a first area and a second area; an area displaying module configured to display, in the first area, a first function page launched by the first page element, and display, in the second area, the application page comprising a media item; and a replying module configured to display, in response to receiving, in the second area, an operation request for operating the media item, a reply to the operation request in the second area.

[0006] In a third aspect of the present disclosure, an electronic device is provided. The electronic device includes: at least one processing unit; and at least one memory, the at least one memory being 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 the first aspect.

[0007] In a fourth aspect of the present disclosure, a computer-readable storage medium is provided. The computer-readable storage medium stores a computer program which, when executed by a processor, causes the processor to perform the method of the first aspect.

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

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

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The above and other features, advantages, and aspects of the implementations of the present disclosure will become more apparent in the following description, taken in conjunction with the drawings and with reference to the following detailed description. In the drawings, the same or similar reference symbols refer to the same or similar elements, where:

[0011] FIG. 1 illustrates a schematic diagram of an example environment in which embodiments of the present disclosure may be implemented;

[0012] FIGS. 2A to 2H illustrate schematic diagrams of examples of a display area according to some embodiments of the present disclosure;

[0013] FIG. 3 illustrates a flowchart of a method for managing an application page according to some embodiments of the present disclosure;

[0014] FIG. 4 illustrates a schematic structural block diagram of an apparatus for managing an application page according to some embodiments of the present disclosure; and

[0015] FIG. 5 illustrates a block diagram of an electronic device in which one or more embodiments of the present disclosure may be implemented.

DETAILED DESCRIPTION

[0016] The technical solutions provided in this specification will be further described in detail below with reference to the drawings and embodiments. The embodiments of the present disclosure will be 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 interpreted as 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 embodiments of the present disclosure are only for illustrative purposes, and are not intended to limit the protection scope of the present disclosure.

[0017] In the description of the embodiments of the present disclosure, the term "include/comprise" and similar terms 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 "one embodiment" or "the embodiment" should be understood as "at least one embodiment". The term "some embodiments" should be understood as "at least some embodiments". The terms "first", "second", etc. may refer to different or same objects. The following may also include other explicit and implicit definitions.

[0018] Herein, unless otherwise explicitly stated, performing a step "in response to A" does not mean that the step is performed immediately after "A", but may include one or more intermediate steps.

[0019] 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.

[0020] It may be understood that before using the technical solutions disclosed in the embodiments of the present disclosure, the user shall 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 shall be obtained in an appropriate manner in accordance with relevant laws and regulations.

[0021] For example, in response to receiving an active request from a user, prompt information is sent to the user to clearly prompt 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 whether to provide the personal information to software or hardware, such as an electronic device, an application, a server, or a storage medium, that performs the operations of the technical solutions of the present disclosure based on the prompt information.

[0022] As an optional but non-limiting 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 select "agree" or "disagree" to provide the personal information to the electronic device.

[0023] 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 methods that satisfy the relevant laws and regulations may also be applied to the implementations of the present disclosure.

[0024] As briefly mentioned above, a user may play a media item and perform various operations on the media item in an application, and may also perform various interactions with other users in the application. Traditionally, a media item may be presented in a specific page (such as a content presentation page), and if the user performs a commenting operation on the media item, an electronic device presenting the page will switch to presenting a comment page for the media item. The electronic device may present comments on the media item to the user and receive comments from the user via the comment page. Similarly, if the user views a user home page of a creator of the media item, the electronic device will switch to presenting a user page, and present the user home page of the creator of the media item in the user page.

[0025] At this time, the page for playing the media item will be switched to a function page (such as the comment page and the user home page), which causes the playing process to be interrupted. Therefore, in the process of browsing media items, if the user expects to perform the commenting operation on the media item or view the home page of the creator, the electronic device needs to switch the page, which will affect the coherence of the user's browsing of the media item and the efficiency of interaction.

[0026] In view of this, embodiments of the present disclosure provide an improved solution for managing an application page. According to the solution, the application page is displayed in a display area of an electronic device, the application page including a first set of page elements for launching a set of function pages. The display area is divided into a first area and a second area in response to receiving an interaction request for a first page element in the first set of page elements. A first function page launched by the first page element is displayed in the first area, and the application page is displayed in the second area, the application page including a media item. A reply to an operation request is displayed in the second area in response to receiving, in the second area, the operation request for operating the media item.

[0027] In this way, the display area may be divided into a plurality of areas in response to receiving the interaction request for the page element used to launch the function page, and different content may be presented in different areas. The user may continue to operate the media item (for example, pause, play, fast forward, rewind, etc.), which may allow the user to present the function page while browsing the media item and ensuring the coherence of browsing the media item, thereby improving the efficiency of the user's interaction in the function page. For example, the user may comment on the media item while playing the media item.

Example Environment

[0028] FIG. 1 illustrates a schematic diagram of an example environment 100 in which the embodiments of the present disclosure may be implemented. In this example environment 100, an application 120 is installed in an electronic device 110. A user 140 may interact with the application 120 via the electronic device 110 and/or an attachment device of the electronic device 110.

[0029] In some embodiments, the application 120 may be a content sharing application (for example, a video application mainly sharing videos), which may provide the user 140 with various services related to a media item (which may also be referred to as media content, a media content item, a content item, etc.), including browsing, commenting, forwarding, creation (for example, shooting and/or editing), posting, etc., of the media item. In some embodiments, the application 120 may also be any other appropriate application in which the media item may be presented. As used herein, each "media item" includes one or more types of content, such as a video, an image, a gif, an image set, an audio, a text, and the like.

[0030] In the environment 100 of FIG. 1, if the application 120 is active, the electronic device 110 may present a page 150 of the application 120. The page 150 may include various types of pages that may be provided by the application 120, such as a media item presentation page, a media item creation page, a media item posting page, a message page, a personal home page, and the like. The application 120 may provide a media item viewing function to view various media items posted in the application 120.

[0031] 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 computer, 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 gaming device, or any combination of the above, including 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 a "wearable" circuit, etc.). The server 130 may be various types of computing systems/servers that may provide computing power, including but not limited to mainframes, edge computing nodes, computing devices in cloud environments, and the like.

[0032] It should be understood that the structure and function of each element in the environment 100 are described for illustrative purposes only, without suggesting any limitation to the scope of the present disclosure.

Example Interfaces

[0033] FIGS. 2A to 2H illustrate schematic diagrams of examples 200A to 200H of a display area according to some embodiments of the present disclosure. It should be understood that the pages shown in the drawings are only examples, and there may actually be various page designs. Each graphic element in the 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.

[0034] The display area may be, for example, an area of a display screen of the electronic device 110 for presenting content. For the convenience of discussion, examples 200A to 200G will be described with reference to the environment 100 of FIG. 1. It should be noted that the operations performed by the electronic device 110 and the operations performed by the electronic device 110 described below may be performed by a related application (such as the application 120) installed on the electronic device 110.

[0035] It should be noted that the method for managing an application page according to the present disclosure may be performed by the electronic device 110 only when the resolution of the display area is higher than a predetermined threshold (for example, 2266 × 1488, or other values) and/or when the size of the display area is higher than a predetermined threshold (for example, 8 inches or other values). The resolution of the display area may be associated with, for example, the size of the screen of the electronic device 110. That is, for example, the electronic device 110 may perform the method for managing an application page in response to the size of the screen being greater than a threshold size. For example, the technical solutions of the present disclosure may be implemented at a tablet terminal and/or a foldable terminal, which may facilitate full use of the display area to present more content.

[0036] The electronic device 110 may present the page 150 of the application 120 in the display area. In some cases, the page 150 presented by the electronic device 110 in the display area may be a specific presentation page of the application 120, in which a media item may be presented. The presentation page may also be referred

to as a media item presentation page, a media item display page, a content display page, and the like. In some embodiments, the presentation page refers to a page for displaying or pushing a media item and other related information to the user. The media item that may be presented in the presentation page may include various types of media items. The media item to be presented in this presentation page may be determined according to the application design needs, actual scenarios, etc.

[0037] As mentioned above, the application 120 may be any appropriate application that may provide the user 140 with various services related to a media item, in which the media item may be presented. Therefore, the presentation page for presenting the media item may also be referred to as an application page. The electronic device 110 may display the application page in the display area. As shown in FIG. 2A, the electronic device 110 may display an application page 210 in a display area 200A.

[0038] In some embodiments, the application page may include a home page of the application 120, or a recommended home page in a group of home pages of the application 120. The recommended media item shown to the user in the recommended home page is sometimes also referred to as a recommended information flow. In some embodiments, the application page may include other pages under the home page of the application 120, such as a following page (in which media items posted by a group of users followed by the current user are shown), a city page (in which media items posted by other users in the same area range as the current user are shown), or media items aggregated or classified in other ways.

[0039] If there is more and complex information to be presented in an application, the information is often presented in different categories, so that the user may obtain the information in a simpler manner. Presenting the information in different categories often requires setting a plurality of navigation tabs corresponding to different information on the page. The user may switch between the different navigation tabs to 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 application 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 application page.

[0040] As shown in FIG. 2A, the electronic device 110 provides a plurality of navigation tabs for navigating to various pages, such as "Local", "Following", "Recommended", "Home", "Friends", and the like. These navigation tabs may also have different levels, for example, the navigation tabs "Home", "Friends", etc. may be the first level, and the navigation tabs "Local", "Following", "Recommended" may be the second level. The first-level navigation tab may correspond to, for example, a group of pages (for example, a group of home pages), and the page corresponding to the second-level navigation tab may be, for example, at least one of the group of pages corresponding to the first-level navigation tab (for example, the recommended home page corresponding to the navigation tab "Recommended" is one of the group of home pages corresponding to the navigation tab "Home").

[0041] In the example 200A shown in FIG. 2A, if the electronic device 110 detects a selection operation on the navigation tab "Home", the home page of the application 120 may be presented. For example, the electronic device 110 may present the recommended home page (that is, the page corresponding to the navigation tab "Recommended") in the plurality of home pages by default. On this basis, if the electronic device 110 detects

the selection operation on the navigation tab "Following", it may switch to presenting the following home page (that is, the page corresponding to the navigation tab "Following") in the plurality of home pages. 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 application page may also be presented by detecting a start operation of the application, for example, the application page is a default page presented when the application starts. When presented after the application is started, the media item may be presented in the application page.

[0042] The application page is at least used to present the media item. In some embodiments, the electronic device 110 may present the media item in any appropriate view mode (for example, a single-column view mode, a double-column view mode, a three-column view mode, etc.) in the application page. For example, in the example 200A, the electronic device 110 presents the media item in the single-column view mode.

[0043] The application page includes a first set of page elements for launching a set of function pages. As shown in FIG. 2A, the application page 210 may include a page element 201, a page element 202, a page element 203, a page element 204, and a page element 205. For example, the page element 201 and the page element 203 may launch function pages of the application 120, and the page element 201 and the page element 203 may be referred to as page elements in the first set of page elements. It may be understood that the first set of page elements may also include other page elements, for example, the page element 205 may also launch a function page (for example, to implement a forwarding function), then the first set of page elements also includes the page element 205.

[0044] The electronic device 110 may divide the display area into a first area and a second area in response to receiving an interaction request for a first page element in the first set of page elements. For example, the electronic device 110 may determine that the interaction request for the first page element is received in response to receiving a trigger operation for the first page element. As shown in FIGS. 2A and 2B, the electronic device 110 may determine that an interaction request for the page element 203 is received in response to receiving a trigger operation for the page element 203. The page element 203 may be, for example, a page element for commenting on the media item.

[0045] The electronic device 110 may divide the display area 200B into the first area (for example, the area on the right side of the figure) and the second area (for example, the area on the left side of the figure) in response to receiving the interaction request for the page element 203. The electronic device 110 may display a function page 220 (the function page 220 may be, for example, a comment page for the media item) launched by the page element 203 in the first area, and display the application page 210 (for example, a playing page for playing a video) in the second area.

[0046] In some embodiments, the electronic device 110 may divide the display area into the first area and the second area only if the display area is not divided into the first area and the second area. In this case, if the display area has been divided previously, the electronic device 110 may no longer re-divide the display area, which may save computing resources and avoid the display area from being divided into too many areas.

[0047] Regarding the specific manner of dividing the first area and the second area, in some embodiments, the electronic device 110 may divide a first dimension into a first portion and a second portion in response to determining that the first dimension of the display area is greater than a second dimension, and divide the display

area into the first area and the second area along the second dimension based on the first portion and the second portion. The first dimension and the second dimension here may be, for example, the width and the height of the display area. As shown in FIG. 2B, for the display area 200B, since the width of the display area 200B is greater than the height, the electronic device 110 may divide the width into the first portion and the second portion, and divide the display area into the first area on the right side and the second area on the left side along the height. It may be understood that if the height of the display area is greater than the width, the electronic device 110 may divide the height into the first portion and the second portion, and divide the display area into the first area on the lower side and the second area on the upper side along the width. Therefore, the display area may be divided based on the dimensions of the display area, which may ensure the rationality of the division and improve the user experience of browsing the application page and the function page.

[0048] For example, the electronic device 110 may present a corresponding reply in the first area based on a user operation received in the first area. In one embodiment, a reply to a call request is displayed in the first function page in response to receiving, in the first area, the call request for calling a function in the function page. The call request includes at least one of the following: an interaction request for a function page element in the first function page, and a predetermined gesture received in the first area.

[0049] Specifically, the first function page may include one or more function page elements (for example, page elements for posting a comment, folding comments, etc.), in which case a corresponding result page may be presented in the first area in response to the user clicking on a specific function page element. As shown in FIG. 2B, for example, the function page 220 may present a plurality of comments on the media item. The plurality of comments may be displayed in a folded manner, and in this case, the function page 220 may include an operating control 222. The electronic device 110 may expand the plurality of folded comments in response to receiving a trigger operation for the operating control 222. In this way, the user may browse comments, post comments, etc. in an independent comment page while watching the video playback.

[0050] Alternatively and/or additionally, the call request may include a gesture. For example, the user may swipe in the first area to browse the respective comments, and so on. Alternatively and/or additionally, provided that a user home page is presented in the first area, the user may click "Follow" to follow the user, and/or click on a creation posted by the user to view, and so on.

[0051] In some embodiments, the electronic device 110 may further determine a candidate area for displaying a keyboard control based on its own display settings and display the keyboard control in the candidate area in response to receiving, in the first area, an input request for inputting data. As shown in FIGS. 2B to 2D, for example, the function page 220 may further include an input box 223. The electronic device 110 may determine that the input request for inputting data is received in the first area in response to receiving a trigger operation for the input box 223. The electronic device 110 may determine the candidate area for displaying the keyboard control based on its own display settings.

[0052] If the display setting of the electronic device 110 indicates to determine the candidate area for displaying the keyboard control in the entire display area, the electronic device 110 may present an example 200C as shown in FIG. 2C, for example. As shown in FIG. 2C, the electronic device 110 may determine the candidate area in the entire display area and display a keyboard control 224 in the candidate area. In this way,

the soft keyboard may be displayed with the width of the entire display area, and the user is supported to quickly input text content with both hands.

[0053] If the display setting of the electronic device 110 indicates to determine the candidate area for displaying the keyboard control in the first area of the display area, the electronic device 110 may present an example 200D as shown in FIG. 2D, for example. As shown in FIG. 2D, the electronic device 110 may determine the candidate area in the first area and display a keyboard control 225 in the first area. In this way, the keyboard control 225 will not cover the playing page, and at this time, the user may input the text content while watching the complete video picture. Therefore, the electronic device 110 may display the keyboard control based on the display settings, which may facilitate the user to set the manner of displaying the keyboard control based on his/her own preferences, and may improve the user experience of inputting.

[0054] In some embodiments, the application page may include a second set of page elements for operating the media item. The electronic device 110 may determine that the operation request for operating the media item is received in the second area in response to receiving an interaction request for the second set of page elements (for example, a trigger operation on the second set of page elements). Alternatively or additionally, in some embodiments, the electronic device 110 may further determine that the operation request for operating the media item is received in the second area in response to receiving a predetermined gesture in the second area. In this way, dividing the plurality of screen areas will not affect the previous operating habits of the user, but may support the user to operate the media item in the second area according to the previous habits.

[0055] For example, the electronic device 110 may display the reply to the operation request in the second area in response to receiving the operation request for operating the media item in the second area. As shown in FIG. 2E, for example, the application page 210 may further include a page element 231, a page element 232, a page element 233, and a page element 234, which are the second set of page elements, for controlling the playing of the media item. It may be understood that the second set of page elements may further include any other appropriate page elements, which is not limited by the present disclosure.

[0056] For example, the electronic device 110 may play a previous media item of the media item currently played in the application page 210 in response to receiving a trigger operation for the page element 231. For example, the electronic device 110 may play a next media item of the media item currently played in the application page 210 in response to receiving a trigger operation for the page element 233. The page element 234 may be, for example, a playing progress bar of the media item, which may include, for example, a progress indicator element 235. For example, the electronic device 110 may adjust the playing progress of the media item in response to receiving a dragging operation for the progress indicator element 235.

[0057] As shown in FIGS. 2E and 2F, for example, the electronic device 110 may pause playing the media item currently played in the application page 210 in response to receiving a trigger operation for the page element 232. As shown in FIG. 2F, in some embodiments, the electronic device 110 may further adjust the display style of the page element 232 in response to the media item being paused.

[0058] In some embodiments, the electronic device 110 may further display an adjustment element for adjusting the first area and the second area in response to receiving an adjustment request for a segmentation area (which may be, for example, a boundary between the first area and the second area) between the first area

and the second area. The electronic device 110 may adjust the first area and the second area based on the adjustment request in response to receiving a moving request for the adjustment element. As shown in FIG. 2E, the electronic device 110 may display an adjustment element 240 for adjusting the first area and the second area in response to receiving a trigger operation for the segmentation area. The electronic device 110 may adjust the first area and the second area based on the dragging operation in response to receiving the dragging operation (for example, left shift or right shift) for the adjustment element 240. Exemplarily, as shown in FIGS. 2E and 2F, the electronic device 110 may reduce the first area and increase the second area in response to receiving a left dragging operation for the adjustment element 240 in the example 200E, and present the example 200F shown in FIG. 2F. In this way, the user is supported to adjust the size of the two areas according to his/her own needs and/or the screen width.

[0059] In some embodiments, the electronic device 110 may further display a reply to a further interaction request in the first area in response to receiving the further interaction request for a second page element in the first set of page elements in the second area. As shown in FIGS. 2B and 2G, when presenting the function page 220, the electronic device 110 may further present the example 200G in response to receiving a trigger operation for the page element 201 in the example 200B, and present, in the first area (that is, the right area) of the example 200G, a function page 260 (that is, a user page of the user 123) for information of the creator (that is, the user 123) of the media item.

[0060] Therefore, the display content of the first area may be switched by the second set of page elements in the second area without retracting the first area, and different function pages may be displayed in the first area. The efficiency of switching function pages may be improved.

[0061] That is, for the first area, the electronic device 110 may switch from presenting the function page 220 to presenting the function page 260. In some embodiments, in the process of switching the function page, the electronic device 110 may further present a refresh page. As shown in FIGS. 2B, 2E, and 2G, in some embodiments, when presenting the function page 220, the electronic device 110 may present the example 200E in response to receiving the trigger operation for the page element 201 in the example 200B. The electronic device 110 may present a refresh page 250 in the first area of the example 200E, and present a page element 251 indicating that the function page is being switched in the refresh page 250. The electronic device 110 may then switch from the example 200E to presenting the example 200G.

[0062] In some embodiments, the function page may further include a closing element for closing the function page. The electronic device 110 may determine that a closing request for closing the function page is received in response to receiving an interaction request for the closing element (for example, a trigger operation on the closing element). Alternatively or additionally, in some embodiments, the electronic device 110 may further determine that the closing request for closing the function page is received in response to receiving a predetermined gesture (for example, swiping right) in the first area.

[0063] For example, the electronic device 110 may stop displaying the first area and only display the application page in the display area in response to receiving the closing request for closing the function page. As shown in FIGS. 2A and 2B, the function page 220 of the example 200B may further include a closing element 221. For example, the electronic device 110 may no longer display the first area and only display the application

page in response to receiving a trigger operation for the closing element 221, presenting the display area shown in the example 200A.

[0064] It should be noted that when the display area is divided to present the first area and the second area, the application page 210 is reduced to be presented in the second area, and the size of the media item in the application page is also reduced accordingly. When the electronic device 110 cancels presenting the first area, the application page 210 is expanded to fill the first area. The process of reducing and expanding the application page 210 may be displayed dynamically, and the electronic device 110 may present the process of reducing and expanding the application page 210 in the form of animation, for example.

[0065] Alternatively or additionally, in some embodiments, although the display area of the electronic device 110 is currently divided into the first area and the second area, the electronic device 110 may re-divide the display area to obtain a new first area and a new second area in response to receiving a further interaction request for a further page element different from the first page element in the first set of page elements. The new first area and the new second area may be the same as or different from the previous first area and the previous second area.

[0066] In some embodiments, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, the first area is divided into a first sub-area and a second sub-area. The first function page is displayed in the first sub-area, and a second function page launched by the second page element is displayed in the second sub-area.

[0067] More details are described with reference to FIG. 2H, which illustrates a schematic diagram 200H of an example of a display area according to some embodiments of the present disclosure. Specifically, provided that the user clicks on the page element 201 in the page shown in FIG. 2B, the playing page on the left side may be further divided into two sub-areas, such as a first sub-area 271 and a second sub-area 272. At this time, in the order from left to right, the display area may include: the playing page, the user home page, and the comment page. In this way, the corresponding page may be displayed in each of the plurality of areas, which further facilitates the parallel operation of the user.

[0068] It should be understood that although the technical solution of managing the application page is described above by taking the horizontal screen as an example. Alternatively and/or additionally, the technical solution may be performed at a device placed in a vertical screen. At this time, the screen may be divided into upper and lower areas along the vertical direction, and the corresponding page may be presented in each area.

[0069] To sum up, according to the embodiments of the present disclosure, the display area may be divided into a plurality of areas in response to receiving the interaction request for the page element used to launch the function page, and different content may be presented in different areas. The user may present the function page while browsing the media item and ensuring the coherence of browsing the media item, thereby improving the efficiency of the user's interaction in the function page.

Example Process

[0070] FIG. 3 illustrates a flowchart of a method 300 for managing an application page 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. As shown in FIG. 3, at block 310, an application page is displayed in a display area of an electronic device, the application page including a first set of page elements for launching a set of function pages. At block 320, the display area is divided into a first area and a second area in response to receiving an interaction request for a first page element in the first set of page elements. At block 330, a first function page launched by the first page element is displayed in the first area, and the application page is displayed in the second area, the application page including a media item. At block 340, a reply to an operation request is displayed in the second area in response to receiving, in the second area, the operation request for operating the media item.

[0071] In some embodiments, the application page further includes a second set of page elements for operating the media item, the operation request including at least one of: an interaction request for the second set of page elements, and a predetermined gesture received in the second area.

[0072] In some embodiments, a reply to a call request is displayed in the first function page in response to receiving, in the first area, the call request for calling a function in the function page, the call request including at least one of: an interaction request for a function page element in the first function page, and a predetermined gesture received in the first area.

[0073] In some embodiments, the method further includes: displaying, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, a reply to the further interaction request in the first area.

[0074] In some embodiments, the method further includes: dividing, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, the first area into a first sub-area and a second sub-area; and displaying, in the first sub-area, the first function page, and displaying, in the second sub-area, a second function page launched by the second page element.

[0075] In some embodiments, the method further includes: determining, in response to receiving, in the first area, an input request for inputting data, a candidate area for displaying a keyboard control based on display settings of the electronic device; and displaying the keyboard control in the candidate area.

[0076] In some embodiments, dividing the display area into the first area and the second area includes: dividing, in response to determining that a first dimension of the display area is greater than a second dimension, the first dimension into a first portion and a second portion; and dividing the display area into the first area and the second area along the second dimension based on the first portion and the second portion.

[0077] In some embodiments, the method further includes: displaying, in response to receiving a closing request for closing the function page, the application page in the display area.

[0078] In some embodiments, the function page further includes a closing element for closing the function page, the closing request comprising at least one of: an interaction request for the closing element, and a predetermined gesture received in the first area.

[0079] In some embodiments, the method further includes: displaying, in response to receiving an adjustment request for a segmentation area between the first area and the second area, an adjustment element for adjusting the first area and the second area; and adjusting, in response to receiving a moving request for the adjustment element, the first area and the second area based on the moving request.

[0080] In some embodiments, the method further includes: performing the method in response to determining that a resolution and/or a size of the display area is higher than a predetermined threshold.

[0081] In some embodiments, dividing the display area into the first area and the second area includes: dividing the display area into the first area and the second area in response to determining that the display area is not divided into the first area and the second area.

Example Apparatus and Device

[0082] The embodiments of the present disclosure further provide a corresponding apparatus for implementing the above method or process. FIG. 4 illustrates a schematic structural block diagram of an apparatus 400 for managing an application page 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.

[0083] As shown in FIG. 4, the apparatus 400 includes: a displaying module 410 configured to display, in a display area of an electronic device, the application page including a first set of page elements for launching a set of function pages; a dividing module 420 configured to divide, in response to receiving an interaction request for a first page element in the first set of page elements, the display area into a first area and a second area; an area displaying module 430 configured to display, in the first area, a first function page launched by the first page element, and display, in the second area, the application page including a media item; and a replying module 440 configured to display, in response to receiving, in the second area, an operation request for operating the media item, a reply to the operation request in the second area.

[0084] In some embodiments, the application page further includes a second set of page elements for operating the media item, the operation request including at least one of: an interaction request for the second set of page elements, and a predetermined gesture received in the second area.

[0085] In some embodiments, the area displaying module is further configured to display, in response to receiving, in the first area, a call request for calling a function of the function page element, a reply to the call request in the first function page.

[0086] In some embodiments, the area displaying module is further configured to display, in response to receiving, in the first area, a call request for calling a function in the function page, a reply to the call request in the first function page, the call request including at least one of: an interaction request for a function page element in the first function page, and a predetermined gesture received in the first area.

[0087] In some embodiments, the area displaying module is further configured to divide, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, the first area into a first sub-area and a second sub-area; and display, in the first sub-area, the first function page, and display, in the second sub-area, a second function page launched by the second page element.

[0088] In some embodiments, the area displaying module is further configured to determine, in response to receiving, in the first area, an input request for inputting data, a candidate area for displaying a keyboard control based on display settings of the electronic device; and display the keyboard control in the candidate area.

[0089] In some embodiments, the dividing module is further configured to divide, in response to determining that a first dimension of the display area is greater than a second dimension, the first dimension into a first portion and a second portion; and divide the display area into the first area and the second area along the second dimension based on the first portion and the second portion.

[0090] In some embodiments, the apparatus is further configured to display, in response to receiving a closing request for closing the function page, the application page in the display area.

[0091] In some embodiments, the function page further includes a closing element for closing the function page, the closing request including at least one of: an interaction request for the closing element, and a predetermined gesture received in the first area.

[0092] In some embodiments, the area displaying module is further configured to display, in response to receiving an adjustment request for a segmentation area between the first area and the second area, an adjustment element for adjusting the first area and the second area; and adjust, in response to receiving a moving request for the adjustment element, the first area and the second area based on the moving request.

[0093] In some embodiments, the apparatus is invoked in response to determining that a resolution and/or a size of the display area is higher than a predetermined threshold.

[0094] In some embodiments, the dividing module is further configured to divide the display area into the first area and the second area in response to determining that the display area is not divided into the first area and the second area.

[0095] The units and/or 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 and/or modules 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 units and/or 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 (ASSP), system on chip (SOC), complex programmable logic device (CPLD), and more.

[0096] It should be understood that one or more steps of the above method may be performed by a suitable electronic device or a combination of electronic devices. Such an electronic device or a combination of electronic devices may include, for example, the electronic device 110 in FIG. 1.

[0097] FIG. 5 illustrates a block diagram of an electronic device 500 in 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 in FIG. 1 or the apparatus 400 in FIG. 4.

[0098] As shown in FIG. 5, the electronic device 500 is in the form of a general-purpose electronic device. Components of the electronic device 500 may include but be 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 a program stored in the memory 520. In a multiprocessor system, a plurality of processing units execute computer executable instructions in parallel to improve the parallel processing capability of the electronic device 500.

[0099] The electronic device 500 typically includes a plurality of computer storage medium. Such medium may be any available medium accessible to 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, 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.

[00100] 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.

[00101] 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 a plurality of computing machines, which may communicate through communication connections. Therefore, the electronic device 500 may use a logical connection with one or more other servers, a network personal computer (PC) or another network node to operate in a networked environment.

[00102] 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) through the communication unit 540 as needed, the external devices such as a storage device, a display device, etc., or communicate with one or more devices that enable the user to interact with the electronic device 500, or communicate with any devices (such as 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).

[00103] According to an illustrative 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 illustrative 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,

where the computer-executable instructions are executed by a processor to implement the method described above.

[00104] Various aspects of the present disclosure are described herein with reference to flowcharts and/or block diagrams of methods, apparatuses, devices, and computer program products implemented according to the present disclosure. It should be understood that each block of the flowcharts and/or block diagrams, and combinations of blocks in the flowcharts and/or block diagrams, may be implemented by computer-readable program instructions.

[00105] 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 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 functions/actions specified in one or more blocks of the flowcharts and/or block diagrams. These computer-readable program instructions may also be stored in a computer-readable storage medium, these instructions cause the computer, the programmable data processing apparatus, and/or other devices to work in a specific manner, and thus, the computer-readable medium storing the instructions includes a manufactured product, which includes instructions for implementing various aspects of the functions/actions specified in one or more blocks of the flowcharts and/or block diagrams.

[00106] The computer-readable program instructions may be loaded onto a computer, another programmable data processing apparatus, or other devices, so that a series of operation steps are executed on the computer, the another programmable data processing apparatus, or the other devices to produce a computer-implemented process, such that the instructions executed on the computer, the another programmable data processing apparatus, or the other devices implement the functions/actions specified in one or more blocks of the flowcharts and/or block diagrams.

[00107] The flowcharts and block diagrams in the drawings show the possibly implemented architectures, functions, and operations of the systems, methods, and computer program products according to a plurality of implementations of the present disclosure. In this regard, each block in the flowchart or block diagram may represent a module, program segment, or part of instructions, and the module, program segment, or part of instructions contains one or more executable instructions for implementing the specified logical functions. In some alternative implementations, the functions marked in the blocks may also occur in an order different from that marked in the drawings. For example, two consecutive blocks may actually be executed substantially in parallel, or they may sometimes be executed in the reverse order, depending on the functions involved. It should also be noted that each block in the block diagrams and/or flowcharts, and combinations of the blocks in the block diagrams and/or flowcharts may be implemented by a special-purpose hardware-based system that perform specified functions or actions, or may be implemented by a combination of special-purpose hardware and computer instructions.

[00108] The implementations of the present disclosure have been described above. The above description is illustrative, non-exhaustive, and not limited to the disclosed implementations. Without departing from the scope and spirit of the described implementations, many modifications and changes will be apparent to those of ordinary skill in the art. The terminology used herein is chosen to best explain the principles of the

implementations, the practical 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 for managing an application page, comprising:

displaying, in a display area of an electronic device, the application page comprising a first set of page elements for launching a set of function pages;

dividing, in response to receiving an interaction request for a first page element in the first set of page elements, the display area into a first area and a second area;

displaying, in the first area, a first function page launched by the first page element, and displaying, in the second area, the application page comprising a media item; and

displaying, in response to receiving, in the second area, an operation request for operating the media item, a reply to the operation request in the second area.

2. The method of claim 1, wherein the application page further comprises a second set of page elements for operating the media item, the operation request comprising at least one of: an interaction request for the second set of page elements, or a predetermined gesture received in the second area.

3. The method of claim 1, further comprising: displaying, in response to receiving, in the first area, a call request for calling a function in the function page, a reply to the call request in the first function page, the call request comprising at least one of: an interaction request for a function page element in the first function page, or a predetermined gesture received in the first area.

4. The method of claim 1, further comprising: displaying, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, a reply to the further interaction request in the first area.

5. The method of claim 1, further comprising:

dividing, in response to receiving a further interaction request for a second page element in the first set of page elements in the second area, the first area into a first sub-area and a second sub-area; and

displaying, in the first sub-area, the first function page, and displaying, in the second sub-area, a second function page launched by the second page element.

6. The method of claim 1, further comprising:

determining, in response to receiving, in the first area, an input request for inputting data, a candidate area for displaying a keyboard control based on display settings of the electronic device; and

displaying the keyboard control in the candidate area.

7. The method of claim 1, wherein dividing the display area into the first area and the second area comprises:

dividing, in response to determining that a first dimension of the display area is greater than a second dimension, the first dimension into a first portion and a second portion; and

dividing the display area into the first area and the second area along the second dimension based on the first portion and the second portion.

8. The method of claim 1, further comprising: displaying, in response to receiving a closing request for closing the function page, the application page in the display area.

9. The method of claim 8, wherein the function page further comprises a closing element for closing the function page, the closing request comprising at least one of: an interaction request for the closing element, or a predetermined gesture received in the first area.

10. The method of claim 1, further comprising:

displaying, in response to receiving an adjustment request for a segmentation area between the first area and the second area, an adjustment element for adjusting the first area and the second area; and

adjusting, in response to receiving a moving request for the adjustment element, the first area and the second area based on the moving request.

11. The method of claim 1, further comprising: performing the method in response to determining at least one of a resolution of the display area being higher than a predetermined threshold or a size of the display area being higher than a predetermined threshold.

12. The method of claim 1, wherein dividing the display area into the first area and the second area comprises: dividing the display area into the first area and the second area in response to determining that the display area is not divided into the first area and the second area.

13. An apparatus for managing an application page, comprising:

a displaying module configured to display, in a display area of an electronic device, the application page comprising a first set of page elements for launching a set of function pages;

a dividing module configured to divide, in response to receiving an interaction request for a first page element in the first set of page elements, the display area into a first area and a second area;

an area displaying module configured to display, in the first area, a first function page launched by the first page element, and display, in the second area, the application page comprising a media item; and

a replying module configured to display, in response to receiving, in the second area, an operation request for operating the media item, a reply to the operation request in the second area.

14. An electronic device, comprising:

at least one processor; and

at least one memory, the at least one memory being coupled to the at least one processor and storing instructions executable by the at least one processor, the instructions, when executed by the at least one processor, causing the electronic device to perform the method of any of claims 1 to 12.

15. A computer-readable storage medium having computer-executable instructions stored thereon, the computer-executable instructions being executable by a processor to implement the method of any of claims 1 to 12.

16. A computer program product comprising computer-executable instructions, wherein the computer-executable instructions, when executed by a processor, implement the method of any of claims 1 to 12.