

METHOD, APPARATUS, DEVICE AND STORAGE MEDIUM FOR INTERFACE INTERACTION

The present application claims priority to Chinese Patent Application No. 202410658581.1, filed on May 24, 2024 and entitled “Method, Apparatus, Device and Storage Medium for Interface Interaction”, which is incorporated herein by reference in its entirety.

FIELD

[0001] Example embodiments of the present disclosure generally relate to the field of computers, and in particular, to a method, an apparatus, a device, and a computer-readable storage medium for interface interaction.

BACKGROUND

[0002] With the development of computer technology, the Internet has become an important platform for people's information interaction. In the process of people's information interaction through the Internet, people expect to obtain more diverse and convenient experiences in the interaction process.

SUMMARY

[0003] In a first aspect of the present disclosure, a method of interface interaction is provided. The method includes: presenting a first viewing interface in which media content is presented in a first view mode, the first viewing interface including a navigation bar having a plurality of navigation tabs; receiving a first operation on a target navigation tab of the plurality of tabs in the navigation bar; updating the media content presented in the first viewing interface; and presenting, in the first viewing interface, at least one interaction entry including: a first entry for switching a view mode, and/or a second entry associated with a control panel.

[0004] In a second aspect of the present disclosure, an apparatus for interface interaction is provided. The apparatus includes: an interface presenting module configured to present a first viewing interface in which media content is presented in a first view mode, the first viewing interface including a navigation bar having a plurality of navigation tabs; an operation receiving module configured to receive a first operation on a target navigation tab of the plurality of tabs in the navigation bar; a content updating module configured to update the media content presented in the first viewing interface; and an entry presenting module configured to present, in the first viewing interface, at least one interaction entry including: a first entry for switching a view mode, and/or a second entry associated with a control panel.

[0005] 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 for execution by the at least one processing unit, the instructions, when executed by the at least one processing unit, causing the device to perform the method of the first aspect.

[0006] In a fourth aspect of the present disclosure, a computer-readable storage medium is provided. The computer-readable storage medium has a computer program stored thereon, the computer program being executable by a processor to implement the method of the first aspect.

[0007] In a fifth aspect of the present disclosure, a computer program product is provided. The computer program product includes computer-executable instructions, the computer-executable instructions, when executed by a

processor, implementing the method of the first aspect.

[0008] It is to be understood that the content described in the Summary section of the present disclosure is neither intended to identify key or essential 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 be readily envisaged through the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The above and other features, advantages and aspects of the embodiments of the present disclosure will become more apparent from the following detailed description taken in conjunction with the accompanying drawings. In the drawings, the same or similar reference numbers refer to the same or similar elements, where:

[0010] FIG. 1 illustrates a schematic diagram of an example environment in which the embodiments according to the present disclosure may be implemented;

[0011] FIGS. 2A to 2D illustrate example interfaces according to some embodiments of the present disclosure;

[0012] FIG. 3 illustrates a flowchart of a process of example interface interaction according to some embodiments of the present disclosure;

[0013] FIG. 4 illustrates a schematic structural block diagram of an example apparatus for interface interaction according to some embodiments of the present disclosure; and

[0014] FIG. 5 illustrates a block diagram of an electronic device capable of implementing multiple embodiments of the present disclosure.

DETAILED DESCRIPTION

[0015] The embodiments of the present disclosure will be described in more detail below with reference to the accompanying drawings. Although certain embodiments of the present disclosure are shown in the accompanying drawings, it is to 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 is to be understood that the drawings and embodiments of the present disclosure are only for illustrative purposes and are not intended to limit the scope of the present disclosure.

[0016] It is to be noted that the title of any section/sub-section provided herein is not restrictive. Various embodiments are described throughout this disclosure, and any type of embodiments may be included under any section/sub-section. In addition, the embodiments described in any section/sub-section may be combined in any manner with any other embodiments described in the same section/sub-section and/or different section/sub-section.

[0017] In the description of the embodiments of the present disclosure, the term “including” and the like should be understood as open-ended inclusions, that is, “including 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”. Other definitions, either explicit or implicit, may also be included below. The terms “first”, “second”, etc. may refer to different or same objects. Other definitions, either explicit or implicit, may also be

included below.

[0018] The embodiments of the present disclosure may involve user data, data acquisition and/or data use, etc. These aspects all comply with the corresponding laws, regulations and related provisions. In the embodiments of the present disclosure, collection, acquisition, processing, machining, forwarding and use, and the like for all data, are performed on the premise that the user is aware of and confirms. Accordingly, when implementing the embodiments of the present disclosure, the user should be informed of the type, range of use, use scenarios, etc., of the data or information that may be involved, and the authorization of the user should be obtained, through appropriate means according to relevant laws and regulations. The specific manner of informing and/or authorizing may vary according to the actual situation and application scenarios, and the scope of the present disclosure is not limited in this regard.

[0019] If the solutions in this specification and the embodiments involve personal information processing, the processing will be performed on the premise of having a legal basis (for example, consent of a personal information subject is obtained, or it is necessary to perform a contract, etc.), and the processing will only be performed within the scope of the provisions or agreements. If the user refuses to process personal information other than the necessary information required for the basic functions, it will not affect the user's use of the basic functions.

[0020] According to traditional solutions, some media applications may provide users with multiple view modes, for example, the 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 a presentation of media content in an interface by calling a control panel, for example. These capabilities are more commonly used for daily use of the user. However, the user needs more complex interaction operations to complete the corresponding process, which requires high learning costs and interaction costs.

[0021] The embodiments of the present disclosure propose a solution for interface interaction. According to this solution, a first viewing interface may be presented, in which media content is presented in a first view mode, the first viewing interface including a navigation bar having a plurality of navigation tabs. Further, a first operation on a target navigation tab of the plurality of tabs in the navigation bar may be received. Accordingly, the media content presented in the first viewing interface may be updated, and at least one interaction entry may be presented in the first viewing interface, the at least one interaction entry including: a first entry for switching a view mode, and/or a second entry associated with a control panel.

[0022] In this way, the embodiments of the present disclosure are capable of providing a quick interaction entry for the user while triggering a refresh of the interface content by using the navigation tab, thereby improving the interaction efficiency of the interface.

[0023] Various example implementations of this solution are described in detail below in further combination with the accompanying drawings.

Example Environment

[0024] 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.

[0025] In the example environment 100, the electronic device 110 may run an application 120 supporting interface interaction. The application 120 may be any suitable type of application for interface interaction, examples of which may include but are not limited to: a video application, a social application, or other suitable applications. A user 140 may interact with the application 120 via the electronic device 110 and/or its attached devices.

[0026] In some embodiments, the application 120 may be a content sharing application (for example, a video application mainly focused on video sharing), which may provide the user 140 with various services related to media content items, including browsing, commenting, forwarding, creation (for example, shooting and/or editing), publishing, and so on of content. In some embodiments, the application 120 may also be any other suitable application in which the 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, an image set, an audio, text, and so on.

[0027] In the environment 100 of FIG. 1, if the application 120 is active, the electronic device 110 may present an interface 150 for supporting interface interaction through the application 120. The page 150 may include various pages that may be provided by the application 120, such as a content presentation page, a content creation page, a content publishing 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 published in the application 120. Via a corresponding page, the application 120 may provide the user 140 with content associated with the media content or shopping content. The application 120 may also provide the user 140 with the selection and switching of presentation manners of an associated content in appropriate manners, such as clicking or selecting interface elements.

[0028] In some embodiments, the electronic device 110 communicates with a server 130 to implement the provision of 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 television receiver, a radio broadcast receiver, an e-book device, a game device, or any combination of the foregoing, 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” circuit, etc.).

[0029] 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 storages, 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 backstage services for the application 120 supporting content presentation in the electronic device 110.

[0030] A communication connection may be established between the server 130 and the electronic device 110. The communication connection may be established by wired or wireless means. The communication connection

may include but is not limited to a Bluetooth connection, a mobile network connection, a universal serial bus connection, a wireless fidelity 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.

[0031] It is to be understood that structures and functions of the elements in the environment 100 are described for illustrative purposes only, without suggesting any limitation to the scope of the present disclosure.

Example Interaction

[0032] The process of example interface interaction according to embodiments of the present disclosure is described below with reference to the accompanying drawings.

[0033] FIGS. 2A to 2D illustrate example interfaces 200A to 200D according to some embodiments of the present disclosure. The interfaces 200A to 200D may be provided by the electronic device 110 shown in FIG. 1.

[0034] In some embodiments, as shown in FIG. 2A, the electronic device 110 may present a viewing interface 200A. As shown, the viewing interface 200A may present media content in a specific view mode (for example, a single-column view mode). As an example, the viewing interface 200A may display a media content item 210 in a recommended information flow, for example. As an example, the media content item 210 may include appropriate media works such as a video work, an image work, a music work, etc.

[0035] As shown in FIG. 2A, the viewing interface 200A includes a navigation bar 205. As an example, the navigation bar 205 may be located at the interface edge, for example, the bottom, of the viewing interface 200A. The navigation bar 205 may also include a plurality of navigation tabs, such as a navigation tab 215. In some examples, the plurality of navigation tabs may correspond to different interfaces in an application, for example.

[0036] In some embodiments, the electronic device 110 may receive a first operation of the user for the navigation tab 215 (for example, the homepage). The first operation may include, for example, an appropriate operation such as a click operation, a double-click operation, a hover operation, etc.

[0037] Accordingly, as shown in FIG. 2B, the electronic device 110 may refresh the current viewing interface 200A to update the media content presented in the viewing interface 200A. For example, the viewing interface 200A may be refreshed to present a media content item 220.

[0038] In some embodiments, as shown in FIG. 2B, the electronic device 110 may also present one or more interaction entries, for example, an interaction entry 225-1 and/or an interaction entry 225-2 (individually or collectively referred to as an interaction entry 225), based on the first operation for the navigation tab 215. It is to be understood that although FIG. 2B illustrates an example of displaying two interaction entries at the same time, some example scenarios may only display a single interaction entry, for example.

[0039] In some embodiments, the interaction entry 225-1 may be used for switching a view mode of the viewing interface. As an example, in response to receiving a selection on the interaction entry 225-1, the electronic device 110 may switch the single-column view mode as shown in FIG. 2A to the multi-column view mode (e.g., a double-column view mode) as shown in FIG. 2C.

[0040] Continuing to refer to FIG. 2B, the interaction entry 225-2 may be associated with a control panel. Specifically, in response to receiving a selection on the interaction entry 225-2, as shown in FIG. 2D, the electronic device 110 may display a control panel 235.

[0041] In some embodiments, the control panel 235 may include at least multiple controls for controlling a presentation of the media content. For example, such controls may include a switching control for switching the view mode, a refresh control for refreshing content of the homepage, a volume control for controlling a playback volume, an image control for controlling an image mode, and so on.

[0042] In some embodiments, the electronic device 110 may superimpose and display the control panel 235 on a viewing interface 200D according to a preset transparency. Additionally, the electronic device 110 may also keep playing media content in the viewing interface 200D, for example.

[0043] In some embodiments, when the control panel 235 is triggered to display, the electronic device 110 may also display a closing control 240 at a position corresponding to a target navigation tab (for example, the homepage) in the navigation bar.

[0044] Further, in response to a selection on the closing control 240, the electronic device 110 may close the control panel 235 accordingly, and for example, may present the viewing interface as shown in FIG. 2A.

[0045] In this way, the embodiments of the present disclosure are capable of providing the user with a quick interaction entry for switching the view mode and/or triggering the control panel while triggering the refresh of the interface content by using the navigation tab, thereby improving the interaction efficiency of the interface.

[0046] Continuing to refer to FIG. 2B, after receiving the first operation on the target navigation tab 215, the electronic device 110 may also switch the target navigation tab 215 in the navigation bar 205 to a target element 230 to indicate that the media content in the viewing interface has been updated. For example, the target element 230 may include a refresh icon.

[0047] In some embodiments, as shown in FIG. 2B, the one or more interaction entries 225 may be displayed in association with the navigation bar 205. For example, the one or more interaction entries 225 may be displayed at a position adjacent to the display position of the target navigation tab 215.

[0048] In some embodiments, in response to no operation being received on the one or more interaction entries 225 within a preset time period, the electronic device 110 may stop presenting the one or more interaction entries 225 accordingly. Additionally, the electronic device 110 may also switch the target element 230 back to the target navigation tab 215 as shown in FIG. 2A.

[0049] In addition, additionally, the electronic device 110 may also stop presenting the one or more interaction entries 225 based on a preset operation (also referred to as a third operation) of the user, for example. For example, when the user interacts up and down in the viewing interface to view other media content items, the one or more interaction entries 225 may be hidden, for example, to avoid disturbing the user from browsing the media content.

[0050] In some embodiments, the target navigation tab 215 may also support other types of interaction operations, for example. Additionally, the electronic device 110 may also receive a second operation for the target navigation tab 215, for example. Such a second operation is different from the first operation. As an example, the first operation may include, for example, a click operation, and the second operation may include a touch-and-hold operation.

[0051] As an example, in response to the received second operation, the electronic device 110 may directly switch the view mode of the viewing interface, for example, to present the viewing interface 200C as shown in FIG. 2C. As another example, in response to the received second operation, the electronic device 110 may also trigger the presentation of the control panel 235 as shown in FIG. 2D, for example.

[0052] Therefore, the embodiments of the present disclosure are capable of using the navigation tab to implement more efficient interface interaction, thereby improving efficiency of interface interaction and improving interaction experience of the user.

[0053] It is to be understood that although the embodiments of the present disclosure are described above in the single-column view mode and the multi-column view mode, different view modes may also include a single-row view mode and a multi-row view mode, for example.

[0054] In addition, although a solution of triggering presentation of the interaction entry based on the navigation tab is described above in combination with the single-column view mode, such a solution may also be applied to the viewing interface corresponding to other view modes, for example. For example, the user may also trigger the refresh of the content and the presentation of one or more interaction entries by clicking the “homepage” as shown in FIG. 2C.

[0055] As another example, the solution of triggering the presentation of the interaction entry based on the navigation tab discussed above may also be only applied to the specific view mode, such as the single-row view mode or the single-column view mode. For example, when the user clicks on the “homepage” tab as shown in FIG. 2C, only the refresh of the content may be triggered without presenting the corresponding interaction entry.

Example Process

[0056] FIG. 3 illustrates a flowchart of an example process 300 of interface interaction according to some embodiments of the present disclosure. The process 300 may be implemented at the electronic device 110. The process 300 is described below with reference to FIG. 1.

[0057] As shown in the figure, at block 310, the electronic device 110 presents a first viewing interface in which media content is represented in a first view mode, the first viewing interface including a navigation bar having a plurality of navigation tabs.

[0058] At block 320, the electronic device 110 receives a first operation on a target navigation tab of the plurality of tabs in the navigation bar.

[0059] At block 330, the electronic device 110 updates the media content presented in the first viewing interface.

[0060] At block 340, the electronic device 110 presents, in the first viewing interface, at least one interaction entry including: a first entry for switching a view mode, and/or a second entry associated with a control panel.

[0061] In some embodiments, the process 300 further includes: presenting, in response to a selection on the first entry, a second viewing interface, the first viewing interface presenting the media content in a second view mode.

[0062] In some embodiments, the first view mode is a single-column view mode or a single-row view mode, and the second view mode is a multi-column view mode or a multi-row view mode.

[0063] In some embodiments, the process 300 further includes: presenting, in response to a selection on the second entry, the control panel including at least a plurality of controls for controlling presentation of the media content.

[0064] In some embodiments, presenting the control panel includes: overlaying the control panel on the first viewing interface with a preset transparency while the media content is being played.

[0065] In some embodiments, the process 300 further includes: presenting, in response to the selection on the second entry, a closing control for closing the control panel at a position on the navigation bar corresponding to

the target navigation tab.

[0066] In some embodiments, the process 300 further includes: switching, in response to the first operation on the target navigation tab, the target navigation tab in the navigation bar to a target element to indicate an update of the media content.

[0067] In some embodiments, the process 300 further includes: presenting, in response to receiving a second operation on the target navigation tab, a second viewing interface or the control panel, the media content being presented in the second viewing interface in a second view mode.

[0068] In some embodiments, the first operation includes a click operation, and the second operation includes a touch-and-hold operation.

[0069] In some embodiments, the process 300 further includes: stopping presenting the at least one interaction entry in response to the at least one interaction entry having no interaction within a preset time period; and/or stopping presenting the at least one interaction entry in response to receiving a third operation in the viewing interface.

Example Apparatus and Device

[0070] The embodiments of the present disclosure also provide a corresponding apparatus for implementing the above method or process. FIG. 4 illustrates a schematic structural block diagram of an example apparatus 400 for interface interaction according to some embodiments of the present disclosure. The apparatus 400 may be implemented as or be included in the electronic device 110. Each module/component in the apparatus 400 may be implemented by a hardware, a software, a firmware, or any combination thereof.

[0071] As shown in FIG. 4, the apparatus 400 includes an interface presenting module 410 configured to present a first viewing interface in which media content is presented in a first view mode, the first viewing interface including a navigation bar having a plurality of navigation tabs; an operation receiving module 420 configured to receive a first operation on a target navigation tab of the plurality of tabs in the navigation bar; a content updating module 430 configured to update the media content presented in the first viewing interface; and an entry presenting module 440 configured to present, in the first viewing interface, at least one interaction entry including: a first entry for switching a view mode, and/or a second entry associated with a control panel.

[0072] In some embodiments, the apparatus 400 further includes a first switching module configured to: present, in response to a selection on the first entry, a second viewing interface, the first viewing interface presenting the media content in a second view mode.

[0073] In some embodiments, the first view mode is a single-column view mode or a single-row view mode, and the second view mode is a multi-column view mode or a multi-row view mode.

[0074] In some embodiments, the apparatus further includes a panel presenting module configured to: present, in response to a selection on the second entry, a control panel including at least a plurality of controls for controlling presentation of the media content.

[0075] In some embodiments, the panel presenting module is further configured to: overlay the control panel on the first viewing interface with a preset transparency while the media content being played.

[0076] In some embodiments, the apparatus 400 further includes a control presenting module configured to: present, in response to the selection on the second entry, a closing control for closing the control panel at a

position on the navigation bar corresponding to the target navigation tab.

[0077] In some embodiments, the apparatus 400 further includes a second switching module configured to: switch, in response to the first operation on the target navigation tab, the target navigation tab in the navigation bar to a target element to indicate an update of the media content.

[0078] In some embodiments, the apparatus 400 further includes a third switching module configured to: present, in response to receiving a second operation on the target navigation tab, a second viewing interface or the control panel, the media content being presented in the second viewing interface in a second view mode.

[0079] In some embodiments, the first operation includes a click operation, and the second operation may include a touch-and-hold operation.

[0080] In some embodiments, the apparatus 400 further includes a stopping module configured to: stop presenting the at least one interaction entry in response to the at least one interaction entry having no interaction within a preset time period; and/or stop presenting the at least one interaction entry in response to receiving a third operation in the viewing interface.

[0081] The modules included in the apparatus 400 may be implemented in various ways, including a software, a hardware, a firmware, or any combination thereof. In some embodiments, one or more units may be implemented using a software and/or a 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 a programmable gate array (FPGA), an application specific integrated circuit (ASIC), an application specific standard (ASSP), a system on chip (SOC), a complex programmable logic device (CPLD), and so on.

[0082] 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 is to be understood that the electronic device 500 shown in FIG. 5 is only illustrative and should not constitute any limitation on the functionality 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.

[0083] 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 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 programs 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.

[0084] The electronic device 500 generally includes multiple computer storage medium. Such medium may be any available medium that is 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, a cache, a random access memory (RAM)), a non-volatile memory (for example, 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 magnetic disk, or any other medium, which may be used to store information and/or data and may be accessed within the electronic device 500.

[0085] The electronic device 500 may further include additional removable/non-removable, volatile/non-volatile storage medium. Although not shown in FIG. 5, it is possible to provide 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. In these cases, each driver may be connected to a bus (not shown) by one or more data medium interfaces. The memory 520 may include a computer program product 525 having one or more program modules configured to perform various methods or actions of various embodiments of the present disclosure.

[0086] The communication unit 540 implements communication with other electronic devices through a communication medium. In addition, the functions of 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, a network personal computer (PC) or another network node to operate in a networked environment.

[0087] 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 device such as a storage device, a display device, etc., communicates with one or more devices that enables a user to interact with the electronic device 500, or communicates with any devices (for example, a network card, a modem, etc.) that enables 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).

[0088] According to example implementations of the present disclosure, there is provided a computer-readable storage medium having computer-executable instructions stored thereon, and the computer-executable instructions are executed by a processor to implement the method described above. According to example implementations 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 being executed by a processor to implement the method described above.

[0089] 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 is to be understood that each block of the flowchart and/or block diagrams, and combinations of blocks in the flowchart and/or block diagrams, may be implemented by computer-readable program instructions.

[0090] These computer-readable program instructions may be provided to a processing unit of a general-purpose computer, a special-purpose computer, or another 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 the functions/acts specified in one or more blocks of the flowchart and/or block diagrams. These computer-readable program instructions may also be stored in a computer-readable storage medium, and 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/acts specified in one or more blocks of the flowchart and/or block diagrams.

[0091] 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 other programmable data processing apparatus or the other devices to produce a computer-implemented process, thereby enabling the instructions executed on the computer, the other programmable data processing apparatus, or the other devices to implement the functions/acts specified in one or more blocks of the flowchart and/or block diagrams.

[0092] The flowchart and block diagrams in the drawings show the possibly implemented architectures, functions and operations of the system, method and computer program product according to multiple implementations of the present disclosure. In this regard, each block in the flowchart or block diagrams may represent a module, a program segment or a part of instructions, and the module, the program segment or the 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 is to 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 the specified functions or acts, or may be implemented by a combination of special-purpose hardware and computer instructions.

[0093] Various implementations of the present disclosure have been described above, which are illustrative, non-exhaustive, and are not limited to the disclosed implementations. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the illustrated implementations. The selection of the terms used herein is intended to best explain the principles of the implementations, practical applications, or improvements to techniques in the marketplace, or to enable others of ordinary skill in the art to understand the various implementations disclosed herein.

CLAIMS

1. A method of interface interaction, comprising:
 - presenting a first viewing interface in which media content is presented in a first view mode, the first viewing interface comprising a navigation bar having a plurality of navigation tabs;
 - receiving a first operation on a target navigation tab of the plurality of tabs in the navigation bar;
 - updating the media content presented in the first viewing interface; and
 - presenting, in the first viewing interface, at least one interaction entry comprising: a first entry for switching a view mode, and/or a second entry associated with a control panel.
2. The method of claim 1, further comprising:
 - presenting, in response to a selection on the first entry, a second viewing interface, the first viewing interface presenting the media content in a second view mode.
3. The method of claim 2, wherein the first view mode is a single-column view mode or a single-row view mode, and the second view mode is a multi-column view mode or a multi-row view mode.
4. The method of claim 1, further comprising:
 - presenting, in response to a selection on the second entry, the control panel comprising at least a plurality of controls for controlling presentation of the media content.
5. The method of claim 4, wherein presenting the control panel comprises:
 - overlaying the control panel on the first viewing interface with a preset transparency while the media content is being played.
6. The method of claim 4, further comprising:
 - presenting, in response to the selection on the second entry, a closing control for closing the control panel at a position on the navigation bar corresponding to the target navigation tab.
7. The method of claim 1, further comprising:
 - switching, in response to the first operation on the target navigation tab, the target navigation tab in the navigation bar to a target element to indicate an update of the media content.
8. The method of claim 1, further comprising:
 - presenting, in response to receiving a second operation for the target navigation tab, a second viewing interface or the control panel, the media content being presented in the second viewing interface in a second view mode.
9. The method of claim 8, wherein the first operation comprises a click operation, and the second operation

comprises a touch-and-hold operation.

10. The method of claim 1, further comprising:

stopping presenting the at least one interaction entry in response to the at least one interaction entry having no interaction within a preset time period; and/or

stopping presenting the at least one interaction entry in response to receiving a third operation in the viewing interface.

11. An apparatus for interface interaction, comprising:

an interface presenting module configured to present a first viewing interface in which media content is presented in a first view mode, the first viewing interface comprising a navigation bar having a plurality of navigation tabs;

an operation receiving module configured to receive a first operation on a target navigation tab of the plurality of tabs in the navigation bar;

a content updating module configured to update the media content presented in the first viewing interface; and

an entry presenting module configured to present, in the first viewing interface, at least one interaction entry comprising: a first entry for switching a view mode, and/or a second entry associated with a control panel.

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 for execution 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.