POSITION ADJUSTMENT METHOD AND APPARATUS FOR OPERATION CONTROL, TERMINAL, AND STORAGE MEDIUM

RELATED APPLICATION

[0001] This application claims priority to Chinese Patent Application No. 202110680988.0, entitled "POSITION ADJUSTMENT METHOD AND APPARATUS FOR OPERATION CONTROL, TERMINAL, AND STORAGE MEDIUM" filed on June 18, 2021, which is incorporated by reference in its entirety.

FIELD OF THE TECHNOLOGY

[0002] This application relates to the technical fields of computers and the Internet, and in particular, to a position adjustment method and apparatus for an operation control, a ~~device~~terminal, and a storage medium.

BACKGROUND OF THE DISCLOSURE

[0003] Currently, in a game battle, a plurality of operation controls configured to control virtual objects to perform various actions are displayed. In order to improve user's operation feel in the game battle, a user may adjust a display position of an operation control according to actual needs.

[0004] In related technologies, the user adjusts the display position of the operation control through a setting interface. In the setting interface, there is an option for setting the display position of the operation control, and the user may adjust the display position of the operation control in the game battle through an adjustment operation for this option. In addition, a static image of a game battle interface is also displayed in the setting interface. When the user performs the adjustment operation on the foregoing option, the display position of the operation control in the static image is adjusted according to the adjustment operation.

[0005] However, in the foregoing related technologies, the user only previews an adjustment effect on the operation control through the static image, needs to start a game battle to perceive the operation feel of the operation control, determines whether the operation control is adjusted to an appropriate display position based on the operation feel, and needs to reopen the setting interface to adjust the display position of the operation control in a case that the operation control is not adjusted to the appropriate display position, so that the efficiency of position adjustment of the operation control is low.

program, a shopping application program, and the like. The target application program may be an application program that needs to be downloaded and installed, or may be a click-to-run application program, which is not defined in the embodiments of this application.

[0034] The server 20 is configured to provide backend services for the client of the target application program in the terminal 10. For example, the server 20 may be a backend server for the foregoing target application program. The server 20 may be a server, or may be a server cluster including a plurality of servers, or a cloud computing service center. In some embodiments, the server 20 provides backend services for target application programs in a plurality of terminals 10.

[0035] The terminal 10 and the server 20 may communicate with each other through a network 30.

[0036] Optionally, in the embodiments of this application, the foregoing operation control is an operation control whose display position is adjustable. As shown in FIG. 2, a user interface 200 displays a "start adjustment" button 21 for an operation control. After a use clicks the "start adjustment" button 21, the operation control is switched from a fixed state to an adjustable state, and various operation controls and position adjustment progress bar respectively corresponding to the operation controls are displayed in the user interface 200. Taking a first operation control 22 as an example, the user adjusts a display position of the first operation control 22 in the user interface 200 by adjusting a position marker 24 in a position adjustment progress bar 23.

[0037] Referring to FIG. 3, a flowchart of a position adjustment method for an operation control according to an embodiment of this application is shown. The method is applicable to the terminal 10 in the running environment of the application program shown in FIG. 1. For example, an execution entity of each step may be a client of a target application program that is installed and run in the terminal 10. The method may include at least one of the following steps (301 to 304):

[0038] Step 301: Display a user interface of a game battle in response to a starting operation for the game battle.

[0039] The starting operation is an operation that is triggered and generated by a user to start a game battle. In some embodiments, the user triggers and generates the foregoing starting operation through a trigger operation for a game battle starting control. The game battle starting control is displayed in the user interface after the foregoing target application program is run. For example, after the target application program is run, the game battle starting control is displayed in an interface of the target application program, and a user interface of a game battle is displayed in the interface in a case that a trigger operation of the user for the game battle starting control is

CLAIMS

What is claimed is:

1. A position adjustment method for an operation control, performed by a terminal and comprising:

displaying a user interface of a game battle in response to a starting operation for the game battle, the user interface displaying at least one operation control;

switching the operation control from a fixed state to an adjustable state in response to a first state switching operation for the operation control;

adjusting, in the adjustable state, a display position of a first operation control of the at least one operation control in response to an adjustment operation for the first operation control; and

controlling, in the adjustable state, a virtual object in the game battle to perform an action corresponding to the first operation control in response to a trigger operation for the first operation control.

2. The method according to claim 1, further comprising:

displaying an adjustment window in response to the first state switching operation for the operation control, the adjustment window displaying a position adjustment control configured to adjust a display position of the operation control; and

the adjusting a display position of a first operation control of the at least one operation control in response to an adjustment operation for the first operation control comprising:

adjusting the display position of the first operation control in response to an operation for the position adjustment control.

3. The method according to claim 2, wherein the position adjustment control comprises a position adjustment progress bar, and the position adjustment progress bar displays a position marker; and

the adjusting the display position of the first operation control in response to an operation for the position adjustment control comprises:

determining a position of the position marker in the position adjustment progress bar in response to a movement operation for the position marker;

determining a margin of the first operation control relative to a boundary line of the user

interface according to the position of the position marker in the position adjustment progress bar; and

adjusting the display position of the first operation control, so that a distance between the first operation control and the boundary line of the user interface is equal to the margin.

4. The method according to claim 3, wherein the determining a margin of the first operation control relative to a boundary line of the user interface according to the position of the position marker in the position adjustment progress bar comprises:

obtaining a display size of the user interface;

determining, by taking the position marker as a division point, a ratio of a length of a progress bar on the right side of the position marker to a total length of the position adjustment progress bar; and

determining the margin of the first operation control relative to the boundary line of the user interface according to the ratio and the display size.

5. The method according to claim 1, wherein the adjusting a display position of a first operation control of the at least one operation control in response to an adjustment operation for the first operation control comprises:

obtaining attribute information of a drag operation in response to the drag operation for the first operation control;

determining movement parameters of the first operation control based on the attribute information, the movement parameters comprising at least one of: a movement direction, a movement distance, and a position to which the first operation control is moved; and

adjusting the display position of the first operation control according to the movement parameters.

6. The method according to claim 5, wherein the determining movement parameters of the first operation control based on the attribute information comprises:

determining a movement direction of the first operation control based on a drag direction in the attribute information; and determining a movement distance of the first operation control based on a drag distance in the attribute information;

or,

determining the position to which the first operation control is moved based on an end position

of the drag operation in the attribute information.

7. The method according to any one of claims 1 to 6, wherein after the switching the operation control from a fixed state to an adjustable state, the method further comprises:

obtaining an adjustable region corresponding to the first operation control;

performing the operation of adjusting, in the adjustable state, the display position of the first operation control in response to an adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is not on an edge line of the adjustable region; or, performing the operation of adjusting, in the adjustable state, the display position of the first operation control in response to the adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is on the edge line of the adjustable region and the position adjustment operation instructs the first operation control to move from the edge line of the adjustable region to the interior of the adjustable region; and

displaying, in the adjustable state, prompt information in response to the adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is on the edge line of the adjustable region and the position adjustment operation instructs the first operation control to move from the edge line of the adjustable region to the exterior of the adjustable region, the prompt information being used for prompting that the position adjustment of the first operation control fails.

8. The method according to claim 7, wherein the obtaining an adjustable region corresponding to the first operation control comprises:

obtaining a display position of the at least one operation control in the user interface, the at least one operation control comprising at least one other operation control and the first operation control; and

determining the adjustable region corresponding to the first operation control based on the display position of the at least one operation control, a distance between the edge line of the adjustable region and another operation control closest to the edge line being greater than a threshold.

9. The method according to claim 7, wherein the obtaining an adjustable region corresponding to the first operation control comprises:

obtaining trigger regions of other operation controls than the first operation control in the user interface; and

taking a region that does not overlap with the trigger regions of the other operation controls in the user interface as the adjustable region corresponding to the first operation control.

10. The method according to any one of claims 1 to 6, wherein after the adjusting a display position of a first operation control, the method further comprises:

adjusting a display position of a second operation control in the user interface based on the display position of the first operation control.

11. The method according to claim 10, wherein the adjusting a display position of a second operation control in the user interface based on the display position of the first operation control comprises:

adjusting the display position of the second operation control based on the display position of the first operation control and a relative position between the first operation control and the second operation control in a case that the second operation control and the first operation control belong to the same group of operation controls;

or,

adjusting a margin of the second operation control relative to the boundary line of the user interface based on the margin of the first operation control relative to the boundary line of the user interface in a case that the second operation control and the first operation control belong to different groups of operation controls.

12. The method according to any one of claims 1 to 6, wherein after the adjusting a display position of a first operation control, the method further comprises:

switching the first operation control from the adjustable state to the fixed state in response to a second state switching operation for the first operation control; and

transmitting position adjustment information to a server, the position adjustment information being used for instructing the server to record a current display position of the first operation control.

13. A position adjustment apparatus for an operation control, comprising:

an interface display module, configured to display a user interface of a game battle in response to a starting operation for the game battle, the user interface displaying at least one operation control;

a state switching module, configured to switch the operation control from a fixed state to an

adjustable state in response to a first state switching operation for the operation control;

a position adjustment module, configured to adjust, in the adjustable state, a display position of a first operation control of the at least one operation control in response to an adjustment operation for the first operation control; and

an object control module, configured to control, in the adjustable state, a virtual object in the game battle to perform an action corresponding to the first operation control in response to a trigger operation for the first operation control.

14. The apparatus according to claim 13, further comprising:

a window display module, configured to display an adjustment window in response to the first state switching operation for the operation control, the adjustment window displaying a position adjustment control configured to adjust a display position of the operation control, and

the position adjustment module, further configured to adjust the display position of the first operation control in response to an operation for the position adjustment control.

15. The apparatus according to claim 14, wherein the position adjustment control comprises a position adjustment progress bar, and the position adjustment progress bar displays a position marker; and

the position adjustment module is further configured to:

determine a position of the position marker in the position adjustment progress bar in response to a movement operation for the position marker;

determine a margin of the first operation control relative to a boundary line of the user interface according to the position of the position marker in the position adjustment progress bar; and

adjust the display position of the first operation control, so that a distance between the first operation control and the boundary line of the user interface is equal to the margin.

16. The apparatus according to claim 15, wherein the position adjustment module is further configured to:

obtain a display size of the user interface;

determine, by taking the position marker as a division point, a ratio of a length of a progress bar on the right side of the position marker to a total length of the position adjustment progress bar; and

determine the margin of the first operation control relative to the boundary line of the user interface according to the ratio and the display size.

17. The apparatus according to claim 13, wherein the position adjustment module is further configured to:

obtain attribute information of a drag operation in response to the drag operation for the first operation control;

determine movement parameters of the first operation control based on the attribute information; and

adjust the display position of the first operation control according to the movement parameters.

~~18. The apparatus according to claim 17, wherein the position adjustment module is further configured to:~~

~~determine the movement direction of the first operation control based on a drag direction in the attribute information; and determine the movement distance of the first operation control based on a drag distance in the attribute information, the movement parameters comprising the movement direction and the movement distance;~~

~~or,~~

~~determine the position to which the first operation control is moved based on an end position of the drag operation in the attribute information, the movement parameters comprising the position to which the first operation control is moved.~~

~~19. The apparatus according to any one of claims 13 to 18, further comprising:~~

~~a region obtaining module, configured to obtain an adjustable region corresponding to the first operation control, and~~

~~the position adjustment module, further configured to perform the operation of adjusting, in the adjustable state, the display position of the first operation control in response to the adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is not on an edge line of the adjustable region; or, perform the operation of adjusting, in the adjustable state, the display position of the first operation control in response to the adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is on the edge line of the adjustable region and the position adjustment operation instructs the first operation control to move from the edge line of the adjustable region to~~

~~the interior of the adjustable region; and~~

~~an information display module, configured to display, in the adjustable state, prompt information in response to the adjustment operation for the first operation control in the at least one operation control in a case that the first operation control is on the edge line of the adjustable region and the position adjustment operation instructs the first operation control to move from the edge line of the adjustable region to the exterior of the adjustable region, the prompt information being used for prompting that the position adjustment of the first operation control fails.~~

~~20. The apparatus according to claim 19, wherein the region obtaining module is further configured to:~~

~~obtain a display position of the at least one operation control in the user interface, the at least one operation control comprising at least one other operation control and the first operation control; and~~

~~determine the adjustable region corresponding to the first operation control based on the display position of the at least one operation control, a distance between the edge line of the adjustable region and another operation control closest to the edge line being greater than a threshold.~~

~~21. The apparatus according to claim 19, wherein the region obtaining module is further configured to:~~

~~obtain trigger regions of other operation controls than the first operation control in the user interface; and~~

~~take a region that does not overlap with the trigger regions of the other operation controls in the user interface as the adjustable region corresponding to the first operation control.~~

~~22. The apparatus according to any one of claims 13 to 18, wherein the position adjustment module is further configured to adjust a display position of a second operation control in the user interface based on the display position of the first operation control.~~

~~23. The apparatus according to claim 22, wherein the position adjustment module is further configured to:~~

~~adjust the display position of the second operation control based on the display position of the first operation control and a relative position between the first operation control and the second operation control in a case that the second operation control and the first operation control belong to the same group of operation controls;~~

~~or,~~

~~adjust a margin of the second operation control relative to the boundary line of the user interface based on the margin of the first operation control relative to the boundary line of the user interface in a case that the second operation control and the first operation control belong to different groups of operation controls.~~

~~24. The apparatus according to any one of claims 13 to 18, further comprising:~~

~~the state switching module, further configured to switch the first operation control from the adjustable state to the fixed state in response to a second state switching operation for the first operation control; and~~

~~an information transmission module, configured to transmit position adjustment information to a server, the position adjustment information being used for instructing the server to record a current display position of the first operation control.~~

~~25~~18. A terminal, comprising a processor and a memory, the processor storing at least one fragment of program, and the at least one fragment of program being loaded and executed by the processor to perform the position adjustment method for an operation control according to any one of claims 1 to 12.

~~26~~19. A computer-readable storage medium, storing at least one fragment of program, the at least one fragment of program being loaded and executed by a processor to perform the position adjustment method for an operation control according to any one of claims 1 to 12.

~~27~~20. A computer program product, comprising computer instructions, the computer instructions being stored in a computer-readable storage medium, and a processor of a terminal reading the computer instructions from the computer-readable storage medium and executing the computer instructions to perform the position adjustment method for an operation control according to any one of claims 1 to 12.