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DESCRIPTION CN104581402A

Interactive control method and electronic device

[0001]

Technical Field

[0002]

The present invention relates to the field of electronic technology, and in particular to an interactive control method and electronic equipment.

[0003]

Background Art

[0004]

With the continuous development of science and technology, electronic technology has also developed rapidly. There are more and more types of electronic products, and people have also enjoyed the various conveniences brought by the development of science and technology.

Nowadays, people can enjoy a comfortable life brought about by the development of science and technology through various types of electronic devices.

[0005]

Existing smart TVs have been used more and more widely, so smart TVs have more and more functions. For example, users can input content that users need to input into the smart TV through a remote control, which enables users to interact with the smart TV more conveniently.

[0006]

However, in the above implementation, if the user needs to interact with the smart terminal, the user must use a specific electronic device to interact with the smart terminal, which leads to the technical problem of a single interaction mode of the smart terminal and also leads to the problem of low convenience of use of the smart terminal.

[0007]

Summary of the invention

[0008]

The present invention provides an interactive control method and an electronic device to solve the technical problem of a single interactive mode of an intelligent terminal in the prior art. The specific technical solution is as follows:

[0009]

An interactive control method is applied to a first electronic device, wherein the first electronic device includes a first display unit, and a first display object corresponding to a first application is displayed on the first display unit, comprising:

[0010]

When the first application is a preset application, detecting and determining at least one second electronic device connected to the first electronic device;

[0011]

Determine an i-th second electronic device capable of interacting with the first electronic device from the at least one second electronic device;

[0012]

The information of the i-th second electronic device is output to the user, and the i-th second electronic device is determined as an interactive device that interacts with the first electronic device, where i is a positive integer.

[0013]

Optionally, before detecting and determining at least one second electronic device connected to the first electronic device, the method further includes:

[0014]

Detecting and determining whether there is an input area in the first display object;

[0015]

When the input area exists, the step of detecting and determining at least one second electronic device connected to the first electronic device is performed.

[0016]

Optionally, outputting the information of the i-th second electronic device to the user and determining the i-th second electronic device as an interactive device for interacting with the first electronic device includes:

[0017]

Generate a prompt message including the i-th second electronic device identifier;

[0018]

Displaying the generated prompt information on a first display unit of the first electronic device to prompt a user to select an interactive device to interact with the first electronic device; or

[0019]

The prompt information is sent to the at least one second electronic device so that the at least one second electronic device can output the prompt information to the user, and the user response information returned by the i-th second electronic device based on the prompt information is received. When the user response information is confirmation information, the i-th second electronic device is determined as the interactive device.

[0020]

Optionally, the generating of a prompt message is specifically:

[0021]

Generate a text prompt message and/or a voice prompt message including an identifier of the i-th second electronic device, wherein the text prompt message and the voice prompt message are used to prompt the user that the i-th second electronic device is an interactive device for interacting with the first electronic device.

[0022]

Optionally, after using the i-th second electronic device as an interaction device for interacting with the first electronic device, the method further includes:

[0023]

receiving input data sent by the i-th second electronic device;

[0024]

The input data is displayed in the input area on the first display sheet.

[0025]

An electronic device, comprising:

[0026]

A display screen, used to display a first display object corresponding to the first application;

[0027]

A processor is connected to the display screen and is used to detect and determine at least one second electronic device connected to the first electronic device when the first application is a preset application, determine the i-th second electronic device that can interact with the first electronic device from the at least one second electronic device, output information of the i-th second electronic device to a user, and determine the i-th second electronic device as an interactive device that interacts with the first electronic device.

[0028]

Optionally, the processor is further configured to detect and determine whether an input area exists in the first display object, and when the input area exists, perform the step of: detecting and determining at least one second electronic device connected to the first electronic device.

[0029]

Optionally, the processor is further used to generate a prompt message including an identification of the i-th second electronic device, and display the generated prompt message on a first display unit of the first electronic device to prompt a user to select an interactive device for interacting with the first electronic device; or send the prompt message to the at least one second electronic device so that the at least one second electronic device can output the prompt message to the user, receive user response information returned by the i-th second electronic device based on the prompt message, and when the user response information is confirmation information, determine the i-th second electronic device as the interactive device.

[0030]

Optionally, the processor is further used to receive input data sent by the i-th second electronic device, and display the input data in the input area on the display unit.

[0031]

One or more embodiments provided by the present invention have at least the following technical effects or advantages:

[0032]

In the above embodiment, the first electronic device detects that the currently running first application is a preset application. When the first application is the preset application, it detects and determines at least one second electronic device connected to the first electronic device; determines the i-th second electronic device that can interact with the first electronic device from the at least one second electronic device; outputs the information of the i-th second electronic device to the user, and determines the i-th second electronic device as an interactive device that interacts with the first electronic device.

This prompts the user to use the terminal device for interaction, thereby increasing the interactive modes of the first electronic device and correspondingly increasing the convenience of input through the smart terminal, reducing the user's operations and improving the user's experience.

[0033]

In addition, in the embodiment of the present invention, the first electronic device can receive input data entered by the user on the smart terminal, and after parsing the input data, display the corresponding input data in the corresponding display area. Therefore, in the embodiment of the present invention, the user can select the input method in the terminal, which facilitates the user's operation and improves the input efficiency.

[0034]

BRIEF DESCRIPTION OF THE DRAWINGS

[0035]

FIG1 is a flow chart of an interactive control method according to an embodiment of the present invention;

[0036]

FIG2 is a schematic diagram of a display interface of a smart TV according to an embodiment of the present invention;

[0037]

FIG3 is a schematic diagram of a display interface of a smart terminal according to an embodiment of the present invention;

[0038]

FIG4 is a schematic diagram of a smart TV input interface according to an embodiment of the present invention;

[0039]

FIG. 5 is a schematic diagram showing a specific structure of an electronic device according to an embodiment of the present invention.

[0040]

DETAILED DESCRIPTION

[0041]

The present invention provides an interactive control method and an electronic device. The method is applied to a first electronic device, the first electronic device includes a first display unit, and a first display object corresponding to a first application is displayed on the first display unit. The method specifically includes: when the first application is a preset application, detecting and determining at least one second electronic device connected to the first electronic device, determining the i-th second electronic device that matches the current state from the at least one second electronic device, outputting information of the i-th second electronic device to a user, and using the i-th second electronic device as an interactive device for interacting with the first electronic device, where i is a positive integer.

[0042]

Simply put, if a user needs to interact with a smart terminal, the smart terminal will automatically detect whether there is an electronic device that can interact with the smart terminal in a preset area. When there is an electronic device that can interact with the smart terminal, the user can directly use the electronic device to interact with the smart terminal. This avoids the problem that the user can only use a user-specific device to interact with the smart terminal, and increases the interaction methods between the user and the smart terminal, making the interaction between the user and the smart terminal more convenient.

[0043]

The technical solution of the present invention is described in detail below through the accompanying drawings and specific embodiments. It should be understood that the embodiments of the present invention and the specific technical features in the embodiments are only detailed descriptions of the technical solution of the present invention, but not limitations of the technical solution of the present invention. In the absence of conflict, the embodiments of the present invention and the specific technical features in the embodiments can be combined with each other.

[0044]

FIG1 is a flow chart of an interactive control method according to an embodiment of the present invention, the method comprising:

[0045]

Step 101: When the first application is a preset application, at least one second electronic device connected to the first electronic device is detected and determined.

[0046]

Step 102: Determine an i-th second electronic device that can interact with the first electronic device from at least one second electronic device.

[0047]

Step 103: output the information of the i-th second electronic device to the user, and determine the i-th second electronic device as an interactive device for interacting with the first electronic device.

[0048]

First of all, the interactive control method in the embodiment of the present invention is applied to a first electronic device, which includes a first display unit, on which a first display object corresponding to a first application is displayed.

[0049]

In addition, before executing step 101, the first electronic device will detect whether there is an input area in the first display object displayed on the first display unit. When there is an input area, the first electronic device will detect and determine at least one second electronic device for input.

[0050]

Specifically, as shown in FIG2 , a web page is displayed on the smart TV in FIG2 , and then the smart TV will detect whether there is an input area in the web page where the user needs to input. Obviously, there is an input area in the web page, in which the user can input the data content that the user needs to input. At this time, the smart TV will detect and determine at least one second electronic device, and the user can input data content to the smart TV through the second electronic device.

[0051]

Therefore, in an embodiment of the present invention, the first electronic device may also detect and determine whether the first application is a preset application in the preset application list. If the first application is a preset application, at least one second electronic device connected to the first electronic device is detected and determined.

[0052]

Specifically, since the first electronic device is an electronic device that can interact with the user, the first electronic device will determine whether it needs to interact with the user, and then a preset list is saved in the first electronic device, namely: a preset application list. The preset application list saves the applications installed in the first electronic device, such as QQ, Weibo, WeChat and other applications. The applications in the above examples are all interactive applications. As long as they are instant messaging applications, they can be added to the preset application list. Of course, users can add corresponding applications to the preset application list according to their own needs.

[0053]

When it is determined that the first application is any one of QQ, Weibo or WeChat, the first electronic device will determine that interaction with the user is required, and at this time the first electronic device will detect and determine at least one second electronic device connected to the first electronic device.

[0054]

Then, an i-th second electronic device capable of interacting with the first electronic device is determined from the at least one second electronic device.

That is, it is determined whether each second electronic device has an input device and corresponding software that can interact with the first electronic device.

Then, an i-th second electronic device is selected from multiple second electronic devices that can interact with the first electronic device.

[0055]

Finally, the information of the i-th second electronic device is output to the user, and the i-th second electronic device is determined as an interactive device that interacts with the first electronic device.

[0056]

In actual applications, the first electronic device will first turn on the function of the detection device, and then the first electronic device will first detect whether there is a terminal device that can be connected within the preset area, such as a smart phone, tablet computer, smart remote control and other terminal devices. If the first electronic device detects that there is a terminal device that can be connected to the first electronic device within the preset area,

the first electronic device will obtain the identification information of the detected terminal device, and then the first electronic device will save the identification information of the currently detected terminal device.

[0057]

For example, the first electronic device is a smart TV. When the smart TV detects that the currently running application is a preset application or that there is an input area in the currently running application, the smart TV will detect whether there are terminal devices such as smart phones and tablet computers within a preset distance range. When it is detected that multiple terminal devices are connected to the smart TV, the smart TV will obtain identification information of the mobile phone and the tablet computer and save the obtained identification information, wherein the identification information is used to identify the detected terminal device.

[0058]

In addition, if the first electronic device is in a network, the first electronic device will detect whether there are terminal devices in the same network. When there are terminal devices in the same network as the first electronic device, the first electronic device will obtain identification information of these terminal devices, and the obtained identification information is stored in the first electronic device.

[0059]

For example, the first electronic device is a smart TV, which is in a home wireless network, such as a WI-FI network. At this time, the smart TV will detect terminal devices in the wireless network. At this time, when the terminal devices in the wireless network include terminal devices such as smart phones and tablet computers, the smart TV will obtain identification information of the terminal devices such as smart phones and tablet computers, and the smart TV will save the obtained identification information in the smart TV.

[0060]

Of course, in addition to the above-mentioned implementation methods, the first electronic device can also detect whether there are terminal devices with the same operating system as the first electronic device currently running within the preset area. For example, if the first electronic device runs the Android operating system, the first electronic device will detect whether there are terminal devices with the Android operating system within the preset area. If there are terminal devices with the Android operating system, the first electronic

device will obtain the identification information of these terminal devices and save the corresponding identification information in the first electronic device.

[0061]

After the first electronic device obtains the terminal device identification information within the preset area, it selects a terminal device from these terminal devices that can interact with the first electronic device.

Finally, the identification information of the terminal device is output to the user and is determined as an interactive device that interacts with the first electronic device.

[0062]

For example, the first electronic device may generate a first prompt message, which may be displayed on the first display unit of the first electronic device, thereby prompting the user to use the matched second electronic device for interaction, or the first electronic device may send the prompt message to at least one detected second electronic device, and the first electronic device may send a prompt message to all determined terminal devices, wherein the prompt message is used to prompt the user to confirm whether the terminal device needs to be used for interaction.

[0063]

In addition, the prompt information is text prompt information and/or voice prompt information, wherein the text prompt information and the voice prompt information are used to prompt the user that the i -th second electronic device is an interactive device that interacts with the first electronic device, that is, according to the voice prompt information, the second electronic device will output the corresponding voice prompt information, thereby prompting the user to confirm.

[0064]

After all terminal devices receive the prompt information, the first electronic device will detect in real time whether it has received the response information returned by the terminal device. When the first electronic device receives the response information returned by the i -th second electronic device based on the prompt information, the first electronic device will use the i -th second electronic device as an interactive device based on the response information.

[0065]

Specifically, the first electronic device is described as a smart TV. After the smart TV obtains the identification information of the mobile phone terminal, it will generate text prompt information, and the smart TV will send the text prompt information to the mobile phone terminal. Then the mobile phone terminal will display the interactive interface shown in Figure 3. Of course, as long as it is a terminal device detected by the smart TV, a corresponding interactive interface will be generated. After the interactive interface is displayed on the mobile phone terminal, the user can perform corresponding selection operations on the interactive interface, and then the mobile phone will generate corresponding response information. The smart TV will receive the response information generated on the mobile phone terminal and determine whether the user selects "Confirm" or "Cancel" according to the response information. If the user selects "Cancel", the mobile phone terminal will not serve as an interactive device. If the user selects "Confirm", the smart TV will determine that the mobile phone terminal is an interactive device, establish a connection with the mobile phone terminal, and receive the data content sent by the mobile phone terminal in real time.

[0066]

After the connection is established, the i-th second electronic device will first display an input interface, through which the user can input the content to be input, and then the first electronic device will receive the input data sent by the i-th second electronic device in real time, and then parse the input data, and then display the input data in the input area on the first display unit.

[0067]

For example, the first electronic device is a smart TV, as shown in FIG2 . In FIG2 , there is an input area in the display interface of the smart TV. At this time, the smart TV is connected to the smart phone in FIG3 . At this time, the user can enter the content that the user needs to search in the input interface of the smart phone. For example, the user enters "today's news". At this time, the smart TV will receive the data content entered by the user in the smart phone, and then the smart TV will parse the data content and display the parsed data content in the input area. The specific display result is shown in FIG4 .

[0068]

Of course, the display process on the smart TV is synchronized with the user's input process, which makes it easy for the user to check whether the input content is accurate.

[0069]

In the above embodiment, when the smart TV detects that the currently running program is a preset application program, or there is an input area in the current display object, the smart TV will actively detect whether there is an interactive terminal device in the preset area of the smart TV. When there is a terminal device, a prompt message will be generated and sent to the terminal device to prompt the user to use the terminal device for interaction. In this way, the interactive modes of the smart TV are increased, and the convenience of input through the smart terminal is correspondingly increased, which reduces the user's operations and improves the user experience.

[0070]

In addition, in the embodiment of the present invention, the smart TV can receive input data input by the user on the smart terminal, and after parsing the input data, display the corresponding input data in the corresponding display area. Therefore, in the embodiment of the present invention, the user can select the input method in the terminal, which facilitates the user's operation and improves the input efficiency.

[0071]

In addition, the present invention further provides an embodiment, in which a smart TV is still used for explanation. For example, a smart TV in the prior art has a smart remote controller, through which a user can interact with the smart TV, that is, a user can input corresponding content into the smart TV through the smart remote controller, but the input method on the remote controller is single and the input operation process is complicated. Therefore, in an embodiment of the present invention, a "shortcut key" is provided on the smart remote controller. When the "shortcut key" is turned on, the smart TV will search whether there is a smart terminal within a preset area. When a smart terminal exists, the smart TV will directly establish a connection with the smart terminal, receive the data content input by the smart terminal, and then display the data content in the corresponding input area.

[0072]

It should be emphasized that the method of inputting data content and subsequently displaying data in this embodiment is exactly the same as the implementation method in the previous embodiment, and will not be repeated here.

[0073]

Corresponding to an interactive control method in an embodiment of the present invention, a terminal device is also provided in an embodiment of the present invention. FIG5 is a schematic diagram of a specific structure of an electronic device in an embodiment of the present invention. The electronic device includes:

[0074]

Display screen 501, used to display a first display object corresponding to a first application program;

[0075]

The processor 502 is connected to the display screen 501, and is used to detect and determine at least one second electronic device connected to the first electronic device when the first application is a preset application, determine the i-th second electronic device that can interact with the first electronic device from the at least one second electronic device, output information of the i-th second electronic device to the user, and determine the i-th second electronic device as an interactive device that interacts with the first electronic device.

[0076]

Furthermore, the processor 502 is further configured to detect whether there is an input area in the first display object, and when the input area exists, perform the step of: detecting and determining at least one second electronic device connected to the first electronic device.

[0077]

Furthermore, the processor 502 is also used to generate a prompt message including an identification of the i-th second electronic device, and display the generated prompt message on the first display unit of the first electronic device to prompt the user to select an interactive device for interacting with the first electronic device; or send the prompt message to the at least one second electronic device so that the at least one second electronic device can output the prompt message to the user, receive user response information returned by the i-th second electronic device based on the prompt message, and when the user response information is confirmation information, determine the i-th second electronic device as the interactive device.

[0078]

Furthermore, the processor 502 is also used to receive input data sent by the i-th second electronic device, and display the input data in the input area on the display unit.

[0079]

One or more embodiments provided by the present invention have at least the following technical effects or advantages:

[0080]

In the above embodiment, the first electronic device detects that the currently running first application is a preset application. When the first application is the preset application, it detects and determines at least one second electronic device connected to the first electronic device; determines the i-th second electronic device that can interact with the first electronic device from the at least one second electronic device; outputs the information of the i-th second electronic device to the user, and determines the i-th second electronic device as an interactive device that interacts with the first electronic device.

This prompts the user to use the terminal device for interaction, thereby increasing the interactive modes of the first electronic device and correspondingly increasing the convenience of input through the smart terminal, reducing the user's operations and improving the user's experience.

[0081]

In addition, in the embodiment of the present invention, the first electronic device can receive input data entered by the user on the smart terminal, and after parsing the input data, display the corresponding input data in the corresponding display area. Therefore, in the embodiment of the present invention, the user can select the input method in the terminal, which facilitates the user's operation and improves the input efficiency.

[0082]

Those skilled in the art should appreciate that the embodiments of the present invention may be provided as a method, a system or a computer program product.

Accordingly, the present invention may take the form of an entirely hardware embodiment, an entirely software embodiment, or an embodiment combining software and hardware aspects.

Moreover, the present invention may take the form of a computer program product implemented on one or more computer-usable storage media (including but not limited to disk storage, CD-ROM, optical storage, etc.) containing computer-usable program codes.

[0083]

The present invention is described with reference to flowcharts and/or block diagrams of methods, apparatus (systems), and computer program products according to embodiments of the invention.

It should be understood that each process and/or block in the flowchart and/or block diagram, and a combination of the processes and/or blocks in the flowchart and/or block diagram can be implemented by computer program instructions.

These computer program instructions can be provided to a processor of a general-purpose computer, a special-purpose computer, an embedded processing machine or other programmable data processing device to produce a machine, so that the instructions executed by the processor of the computer or other programmable data processing device produce a device for implementing the functions specified in one or more processes in the flowchart and/or one or more boxes in the block diagram.

[0084]

These computer program instructions may also be stored in a computer-readable memory that can direct a computer or other programmable data processing device to operate in a specific manner, so that the instructions stored in the computer-readable memory produce a product including an instruction device that implements the functions specified in one or more processes in the flowchart and/or one or more boxes in the block diagram.

[0085]

These computer program instructions may also be loaded onto a computer or other programmable data processing device so that a series of operational steps are executed on the computer or other programmable device to produce a computer-implemented process, whereby the instructions executed on the computer or other programmable device provide steps for implementing the functions specified in one or more processes in the flowchart and /or one or more boxes in the block diagram.

[0086]

Obviously, those skilled in the art can make various changes and modifications to the present invention without departing from the spirit and scope of the present invention. Thus, if these modifications and variations of the present invention fall within the scope of the claims of the present invention and their equivalents, the present invention is intended to include these modifications and variations.

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CLAIMS CN104581402A

1.

An interactive control method is applied to a first electronic device, wherein the first electronic device includes a first display unit, and a first display object corresponding to a first application is displayed on the first display unit, characterized by comprising:

When the first application is a preset application, detecting and determining at least one second electronic device connected to the first electronic device;

Determine an i -th second electronic device capable of interacting with the first electronic device from the at least one second electronic device;

The information of the i -th second electronic device is output to the user, and the i -th second electronic device is determined as an interactive device that interacts with the first electronic device, where i is a positive integer.

2.

The method according to claim 1, characterized in that before detecting and determining at least one second electronic device connected to the first electronic device, it also includes:

Detecting and determining whether there is an input area in the first display object;

When the input area exists, the step of detecting and determining at least one second electronic device connected to the first electronic device is performed.

3.

The method according to claim 1, wherein the step of outputting information of the i-th second electronic device to the user and determining the i-th second electronic device as an interactive device for interacting with the first electronic device comprises:

Generate a prompt message including the i-th second electronic device identifier;

Displaying the generated prompt information on a first display unit of the first electronic device to prompt a user to select an interactive device to interact with the first electronic device; or

The prompt information is sent to the at least one second electronic device so that the at least one second electronic device can output the prompt information to the user, and the user response information returned by the i-th second electronic device based on the prompt information is received. When the user response information is confirmation information, the i-th second electronic device is determined as the interactive device.

4.

The method according to claim 3, characterized in that the generating of a prompt message specifically comprises:

Generate a text prompt message and/or a voice prompt message including the i-th second electronic device identifier.

5.

The method according to claim 1, characterized in that after the i-th second electronic device is used as an interaction device for interacting with the first electronic device, the method further comprises:

receiving input data sent by the i-th second electronic device;

The input data is displayed in the input area on the first display sheet.

6.

An electronic device, characterized in that the electronic device comprises:

A display screen, used to display a first display object corresponding to the first application;

A processor is connected to the display screen and is used to detect and determine at least one second electronic device connected to the first electronic device when the first application is a preset application, determine the i-th second electronic device that can interact with the first electronic device from the at least one second electronic device, output information of the i-th second electronic device to a user, and determine the i-th second electronic device as an interactive device that interacts with the first electronic device.

7.

The electronic device as claimed in claim 6, characterized in that the processor is further used to detect whether there is an input area in the first display object, and when the input area exists, perform the step of: detecting and determining at least one second electronic device connected to the first electronic device.

8.

The electronic device as described in claim 6 is characterized in that the processor is also used to generate a prompt message including an identification of the i -th second electronic device, and display the generated prompt message on the first display unit of the first electronic device to prompt a user to select an interactive device to interact with the first electronic device; or send the prompt message to the at least one second electronic device so that the at least one second electronic device can output the prompt message to the user, receive user response information returned by the i -th second electronic device based on the prompt message, and when the user response information is confirmation information, determine the i -th second electronic device as the interactive device.

9.

The electronic device as claimed in claim 7 is characterized in that the processor is also used to receive input data sent by the i -th second electronic device, and display the input data in the input area on the display unit.