

Dialogue Robot Configuration Method and Apparatus, Computer Device, and Storage Medium

The present application claims priority to Chinese Patent Application No. 201910745283.5, filed to the China National Intellectual Property Administration on August 13, 2019 and entitled "Dialogue Robot Configuration Method and Apparatus, Computer Device, and Storage Medium", the disclosure of which is hereby incorporated by reference in its entirety.

Technical Field

The present application relates to the technical field of artificial intelligence, and in particular, to a dialogue robot configuration method and apparatus, a computer device, and a storage medium.

Background

With the development of intelligent robot technology, product managers now start to use intelligent training robots to train the verbal trick of communicating with customers. When a plurality of intelligent training robots that meet requirements need to be developed, a hard coding method is usually used to develop the dialogue flow of intelligent training robots. The inventor realizes that this development method generates a large amount of duplicated code, causes code redundancy, and is a waste of memory resources.

Summary

Technical problems

Based on this, it is necessary to provide a dialogue robot configuration method and apparatus, a computer device, and a storage medium, which can reduce code redundancy and reduce the waste of memory resource consumption.

Technical solutions

A dialogue robot configuration method may include: a dialogue robot configuration instruction may be received, and a dialogue flow editing page acquisition request may be sent to a server according to the dialogue robot configuration instruction.

The dialogue flow editing page returned by the server may be received and

displayed. The dialogue flow editing page may include a preset component area and a dialogue flow editing area.

Coordinates of a target component in the dialogue flow editing area may be acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and a distance between the target component and a component existing in the dialogue flow editing area may be calculated according to the coordinates.

A target area box may be displayed in the dialogue flow editing area according to the distance, and a target component configuration instruction may be received, and the target component may be displayed in the target area box and the target area box may be hidden according to the target component configuration instruction.

The step that the coordinates of the target component in the dialogue flow editing area may be acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area is returned to execute until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

A dialogue robot configuration apparatus may include: a request sending module, a page display module, a distance calculation module, a component configuration module, and a dialogue robot configuration module. The request sending module may be configured to receive a dialogue robot configuration instruction, and send a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction.

The page display module may be configured to receive and display a dialogue flow editing page returned by the server. The dialogue flow editing page may include a preset component area and a dialogue flow editing area.

The distance calculation module may be configured to acquire coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculate a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates.

The component configuration module may be configured to display a target area box in the dialogue flow editing area according to the distance, receive a target component configuration instruction, and display the target component in the target area box and hide the target area box according to the target component configuration

instruction.

The dialogue robot configuration module may be configured to return to execute the step that the coordinates of the target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

A computer device may include a memory and a processor. The memory may store a computer program. The processor, when executing the computer program, implements the following steps: a dialogue robot configuration instruction is received, and a dialogue flow editing page acquisition request is sent to a server according to the dialogue robot configuration instruction.

The dialogue flow editing page returned by the server is received and displayed. The dialogue flow editing page includes a preset component area and a dialogue flow editing area.

Coordinates of a target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and a distance between the target component and a component existing in the dialogue flow editing area is calculated according to the coordinates.

A target area block is displayed in the dialogue flow editing area according to the distance, a target component configuration instruction is received, and the target component is displayed in the target area block and the target area block is hidden according to the target component configuration instruction.

The step that the coordinates of the target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area is returned to execute until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

A computer-readable storage medium stores a computer program thereon. The computer program, when being executed by a processor, implements the following steps: a dialogue robot configuration instruction is received, and a dialogue flow editing page acquisition request is sent to a server according to the dialogue robot configuration instruction.

The dialogue flow editing page returned by the server is received and displayed.

The dialogue flow editing page includes a preset component area and a dialogue flow editing area.

Coordinates of a target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and a distance between the target component and a component existing in the dialogue flow editing area is calculated according to the coordinates.

A target area box may be displayed in the dialogue flow editing area according to the distance, and a target component configuration instruction may be received, and the target component may be displayed in the target area box and the target area box may be hidden according to the target component configuration instruction.

The step that the coordinates of the target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area is returned to execute until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

Beneficial Effect

According to the abovementioned dialogue robot configuration method and apparatus, the computer device, and the storage medium, dialogue flow is quickly configured in a dialogue flow editing interface through various preset components, so as to obtain a dialogue robot, which can avoid the writing of duplicated code, reduce the code redundancy, and reduce the memory resource consumption.

Brief Description of the Drawings

Fig. 1 is an application scenario diagram of a dialogue robot configuration method in an embodiment.

Fig. 2 is a flowchart of the dialogue robot configuration method in an embodiment.

Fig. 3 is a schematic diagram of a dialogue flow editing page in a specific embodiment.

Fig. 4 is a schematic diagram of configuring a fixed dialogue component in a specific embodiment.

Fig. 5 is a flowchart of acquiring basic configuration information in an embodiment.

Fig. 6 is a flowchart of configuring an outcome identifier in an embodiment.

Fig. 7 is a flowchart of previewing a dialogue robot in an embodiment.

Fig. 8 is a flowchart of editing a target component in an embodiment.

Fig. 9 is a flowchart of editing a fixed dialogue component in a specific embodiment.

Fig. 10 is a flowchart of deploying the dialogue robot in an embodiment.

Fig. 11 is a structural block diagram of the dialogue robot configuration apparatus in an embodiment.

Fig. 12 is an internal structure diagram of a computer device in an embodiment.

Detailed Description of the Embodiments

In order to make the purposes, technical solutions, and advantages of the present application clearer, the present application will be further described in detail below with reference to the accompanying drawings and embodiments. It is to be understood that specific embodiments described herein are merely illustrative of the present application and are not intended to limit the present application.

The text semantic recognition method provided by the present application may be applied to an application scenario as shown in Fig. 1. A terminal 102 communicates with a server 104 through a network. The terminal 102 receives a dialogue robot configuration instruction, sends a dialogue flow editing page acquisition request to the server 104 according to the dialogue robot configuration instruction, and receives and displays the dialogue flow editing page returned by the server. The dialogue flow editing page includes a preset component area and a dialogue flow editing area. The terminal 102 acquires coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, calculates a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates, displays a target area box in the dialogue flow editing area according to the distance, receives a target component configuration instruction, and displays the target component in the target area box and hides the target area box according to the target component configuration instruction. The terminal 102 returns to the step that the coordinates of the target component in the dialogue flow editing area may be acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area to execute until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot. The terminal 102 may be, but is not limited to, various personal computers, laptops, smartphones, tablet computers, and portable wearable devices. The server 104 may

be implemented by using an independent server or a server cluster composed of a plurality of servers.

In an embodiment, as shown in Fig. 2, a dialogue robot configuration method is provided. Taking the method being applied to the server in Fig. 1 as an example, the method includes the following steps.

At S202, a dialogue robot configuration instruction is received, and a dialogue flow editing page acquisition request is sent to a server according to the dialogue robot configuration instruction;

At S204, the dialogue flow editing page returned by the server is received and displayed, where dialogue flow editing page includes a preset component area and a dialogue flow editing area.

The dialogue robot is a computer program that chats through a dialogue or text. The dialogue robot can simulate a human dialogue and pass the Turing test. A chat robot may be used for practical purposes, such as customer service, information acquisition, and verbal trick training. The preset component is a component configured to perform dialogue configuration, is set in advance, and may be used directly. The preset component may include a voice-over dialogue component, a fixed dialogue component, a fixed question and answer component, an intent dialogue component, a scoring dialogue component, etc. The dialogue flow editing area refers to an area configured to edit dialogue flow. A basic configuration information component is set in the dialogue flow editing area. The basic configuration information component is a component generated according to basic configuration information of the dialogue robot. The basic configuration information may be the gender, age, position, etc. of the dialogue robot.

Specifically, the terminal receives the dialogue robot configuration instruction, sends the dialogue flow editing page acquisition request to the server according to the dialogue robot configuration instruction. The server receives the dialogue flow editing page acquisition request. The server acquires the dialogue flow editing page set in advance according to the dialogue flow editing page acquisition request, and returns the dialogue flow editing page to the terminal. The terminal receives and displays the dialogue flow editing page returned by the server. The dialogue flow editing page includes a preset component area and a dialogue flow editing area. There is a basic configuration information component in the dialogue flow editing area. In a specific embodiment, the dialogue flow editing page displayed in the terminal is as shown in

Fig. 3.

At S206, coordinates of a target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and a distance between the target component and a component existing in the dialogue flow editing area is calculated according to the coordinates.

The target component refers to a component selected from various preset components, and is configured to configure a dialogue in the dialogue flow. The existing component refers to that the component generated according to basic configuration information of the dialogue robot or other configured components in the dialogue flow editing area, and is configured to determine a position of a component to be configured in the dialogue flow editing area.

Specifically, the terminal detects whether the target component in the preset component area is moved into the dialogue flow editing area, and acquires the coordinates of the target component in the dialogue flow editing area when is it detected that the target component in the preset component area is moved into the dialogue flow editing area. The coordinates may be the coordinates of a center of the target component in the dialogue flow editing area, or may also be the coordinates of other positions of the target component in the dialogue flow editing area. Coordinates of an existing component in the dialogue flow editing area is acquired, and a distance between the target component and the existing component in the dialogue flow editing area is calculated according to the coordinates of the existing component and the coordinates of the target component in the dialogue flow editing area.

At S208, a target area box is displayed in the dialogue flow editing area according to the distance, and a target component configuration instruction is received, and the target component is displayed in the target area box and the target area box is hidden according to the target component configuration instruction.

The target area box is configured to indicate a configuration position of the target component.

Specifically, the terminal obtains the position of the target area box according to the position of the existing component with the minimal distance with the target component in the dialogue flow editing area, and then displays the target area box in the dialogue flow editing area according to the position of the target area box. At this moment, the terminal receives the target component configuration instruction, and

displays the target component in the target area box according to the target component configuration instruction. In a specific embodiment, as shown in Fig. 4, when the terminal detects that the fixed dialogue component is dragged into the dialogue flow editing area by a mouse, the distance between the fixed dialogue component and the basic configuration information component is minimal. At this moment, the target area box displayed in a lower area corresponding to the basic configuration information component is a dashed box. At this moment, when the terminal receives the target component configuration instruction, i.e., when the mouse stops dragging the fixed dialogue component, the fixed dialogue component is displayed in the dashed box.

At S210, return to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

Specifically, S206 is returned to continue to be executed until the dialogue flow editing completion instruction is received. At this moment, configured dialogue flow in the dialogue flow editing area is obtained according to the dialogue flow editing completion instruction, so as to obtain a configured dialogue robot.

According to the abovementioned dialogue robot configuration method, the dialogue flow is quickly configured in a dialogue flow editing interface through various preset components, so as to obtain a dialogue robot, which can avoid the writing of duplicated code, reduce the code redundancy, reduce the memory resource consumption, and improve the efficiency of developing the dialogue robot.

In an embodiment, as shown in Fig. 5, before a dialogue robot configuration instruction is received, and a dialogue flow editing page acquisition request is sent to a server according to the dialogue robot configuration instruction, the method further includes the following steps.

At S502, a robot information configuration instruction which carries a robot identifier is received, and a corresponding information configuration page is acquired according to the robot identifier and is displayed.

The robot identifier is used to uniquely identify a robot that needs to be configured, and the robot identifier may be a name, a digital identifier (ID), a character string, etc. The information configuration page is a page configured to configure robot basic information.

Specifically, the terminal receives the robot information configuration instruction. The robot information configuration instruction carries a robot identifier to be configured. The terminal analyzes the robot information configuration instruction to obtain the robot identifier, sends the dialogue flow editing page acquisition request to the server according to the robot identifier. The server returns an information configuration page after receiving the request. The terminal acquires and displays the information configuration page returned by the server.

At S504, an information configuration completion instruction is received, basic configuration information is acquired according to the information configuration completion instruction, and the basic configuration information and the robot identifier are sent to the server.

Specifically, the terminal acquires the basic configuration information of the robot through the information configuration page. At this moment, terminal receives the information configuration completion instruction through the information configuration page, acquires the basic configuration information according to the information configuration completion instruction, and then sends the basic configuration information and the robot identifier to the server. The server receives the basic configuration information and the robot identifier, and associates and saves the basic configuration information and the robot identifier.

In the abovementioned embodiment, the basic configuration information of the robot is pre-configured in advance through the information configuration page, and the basic configuration information and the robot identifier are associated and saved, which improves the efficiency of configuring the dialogue robot of a robot.

In an embodiment, S208, i.e., a target area box is displayed in the dialogue flow editing area according to the distance includes the following step.

The coordinates of the existing component corresponding to a target distance are acquired, target coordinates are calculated according to the coordinates of the existing component, a target area is acquired according to the target coordinates, and the target area box is displayed according to the target area.

The target distance is used for the existing component corresponding to the target component, and may be a minimal distance, etc. The target coordinates are used for determining the target area, and the target area is used to display the target area box. The target coordinates may be the coordinates of a center point of the target area, and may also be the coordinates of other positions of the target area.

Specifically, the terminal acquires the coordinates of the existing component with the minimal distance from the target component. The coordinates of the existing component may be the coordinates of the center point of the existing component in a dialogue flow editing area, or may also be the coordinates of other positions of the existing component, for example, the coordinates of the center point of an edge, closest to the target component, of the existing component. The target coordinates are calculated according to a preset distance between the existing component and the target component and the coordinates of the existing component. The target area is obtained according to the target coordinates, and then the target area box is displayed in the target area.

In the abovementioned embodiments, the existing component corresponding to the minimal distance is obtained according to the distance between the target component and the existing component, then the target coordinates are calculated according to the existing component corresponding to the minimal distance, so as to obtain a target area box, which facilitates the configuration of the dialogue robot, and improves the efficiency and the accuracy of the dialogue robot configuration.

In an embodiment, as shown in Fig. 6, after S210, i.e., return to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot, the method further includes the following steps.

At S602, a number of branch dialogues of the dialogue robot is detected, a termination component of each branch dialogue is acquired, and a dialogue termination configuration interface is displayed according to the termination component of each branch dialogue.

The termination component refers to the last component configured in a dialogue flow branch, and is configured to terminate a corresponding branch dialogue. The dialogue termination configuration interface is configured to configure a corresponding branch dialogue outcome for the termination component.

Specifically, when a configured robot dialogue flow is obtained, the terminal detects the number of branch dialogues of the dialogue robot, and each branch dialogue has a corresponding termination component. A terminal component of each branch dialogue is acquired according to the number of the branch dialogues of the

dialogue robot, and then a dialogue termination configuration interface is displayed according to the termination component of each branch dialogue. The dialogue termination configuration interface displays the termination components with the number of the branch dialogues.

At S604, a dialogue outcome identifier corresponding to the termination component is acquired through the dialogue termination configuration interface, the dialogue outcome identifier corresponding to the termination component and the dialogue robot are sent to the server, and the server associates and saves the dialogue robot and a target robot identifier.

The dialogue outcome identifier is used for indicating an outcome of a dialogue training of the dialogue flow in the corresponding branch dialogue. The outcome of the dialogue training includes the success of the dialogue training and the failure of the dialogue training. The dialogue outcome identifier is used for uniquely identifying the outcome of each dialogue training.

Specifically, the terminal acquires the dialogue outcome identifier corresponding to the termination component through the dialogue termination configuration interface, i.e., associates the termination component with the corresponding dialogue outcome identifier. Then, the terminal sends the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server. The server receives the dialogue outcome identifier corresponding to the termination component and the dialogue robot, acquires the dialogue outcome identifier corresponding to the termination component, and associates and saves the dialogue outcome identifier corresponding to the termination component, the dialogue robot, and the target robot identifier.

In the abovementioned embodiment, the number of branch dialogues of the dialogue robot is detected and the termination component of each branch dialogue is acquired, so that the dialogue termination configuration interface is displayed according to the termination component of each branch dialogue. The dialogue outcome identifier corresponding to the termination component is acquired through the dialogue termination configuration interface. The dialogue outcome identifier corresponding to the termination component and the dialogue robot are sent to the server. The server is configured to associate and save the dialogue robot and a target robot identifier. Then, the outcome of each branch dialogue is configured through the dialogue termination configuration interface, so that it does not need to be written in a

hard coding manner, which improves the configuration efficiency of the dialogue flow.

In an embodiment, as shown in Fig. 7, after S604, i.e., the dialogue outcome identifier corresponding to the termination component is acquired through the dialogue termination configuration interface, the dialogue outcome identifier corresponding to the termination component and the dialogue robot are sent to the server, and the server associates and saves the dialogue robot and a target robot identifier, the method further includes the following steps.

At S702, a dialogue robot preview instruction is received, and a dialogue flow Quick Response (QR) code acquisition request is sent to the server according to the dialogue robot preview instruction.

At S704, the QR code returned by the server and generated according to the dialogue robot is acquired and displayed.

The QR code is used for running corresponding dialogue flow.

Specifically, the terminal receives the dialogue robot preview instruction through the dialogue flow editing page, and sends a dialogue flow QR code acquisition request to the server according to the dialogue robot preview instruction. The server receives the dialogue flow QR code acquisition request sent by the terminal, and generates a corresponding QR code according to the dialogue robot. The server returns the generated QR code to the terminal. The terminal receives and displays the QR code returned by the server and generated according to the dialogue robot.

At S706, receive a scanning instruction for the QR code, and analyze the QR code to obtain the dialogue robot according to the scanning instruction.

At S708, the dialogue robot is run to obtain a dialogue interface.

The dialogue interface is configured to performing robot dialogue training. A dialogue is performed with the robot through the dialogue interface.

Specifically, the terminal receives the scanning instruction for the QR code, and analyzes the QR code according to the scanning instruction to obtain the dialogue robot, and runs the obtained configured dialogue flow, so as to obtain a dialogue training interface.

In a specific embodiment, other terminals, for example, a smartphone is configured to scan the QR code, and the smartphone analyzes to obtain the configured dialogue flow, and runs the dialogue robot to obtain a dialogue interface.

In the abovementioned embodiment, a corresponding QR code is generated according to the configured dialogue flow. The configured dialogue flow may be run to

obtain a dialogue interface by scanning the QR code, so as to preview the dialogue training, which is convenient and quick.

In an embodiment, as shown in Fig. 8, S208, i.e., the target component is displayed in the target area box and the target area box is hidden according to the target component configuration instruction includes the following steps.

At S802, an editing instruction of the target component is received, and an editing interface corresponding to the target component is acquired according to the editing instruction and is displayed.

The editing interface is configured to editing the dialogue in the target component. Dialogue statements, dialogue statement keywords, etc. in the target component are edited in the editing interface.

Specifically, the terminal receives an editing instruction for the target component, and acquires the editing interface corresponding to the target component according to the editing instruction, and displays the editing interface corresponding to the target component.

At S804, edited dialogue information is acquired through the editing interface, and the dialogue information is written into the target component.

The target component refers to a configured component in the dialogue flow, and the component may be reconfigured, i.e., edited.

Specifically, the terminal acquires the edited dialogue information through the editing interface, and writes the dialogue information into the target component, so as to obtain a configured target component.

In a specific embodiment, the editing interface of the fixed dialogue component is as shown in Fig. 9, and a dialogue reference answer, a keyword required by the dialogue, a dialogue analysis may be configured in the editing interface.

In the abovementioned embodiment, the editing instruction for the target component is received, the editing interface corresponding to the target component is acquired according to the editing instruction and is displayed, the edited dialogue information is acquired through the editing interface, and the dialogue information is written into the target component, so that the component configured in the dialogue flow editing area may be configured, the component in the dialogue flow may meet different requirements, and meet the development needs of various types of robot dialogue flow.

In an embodiment, as shown in Fig. 10, after S210, i.e., return to execute the step

that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot, the method further includes the following steps.

At S1002, a robot deployment instruction is received, the target robot identifier is acquired according to the robot deployment instruction, and a target dialogue robot acquisition request is sent to the server according to the target robot identifier.

The target robot identifier is used for identifying a dialogue robot to be deployed. A target dialogue robot refers to a dialogue flow associated with the target robot identifier.

Specifically, the terminal receives the robot deployment instruction, analyzes the robot deployment instruction to acquire the target robot identifier to be deployed, and sends the target dialogue robot acquisition request to the server according to the target robot identifier. The server finds, according to the target robot identifier, an associated dialogue robot to serve as the target dialogue robot and an associated outcome identifier.

At S1004, target dialogue robot information returned by the server according to the target robot identifier is received, and the target dialogue robot information is sent to each target terminal, where The target terminal is configured to receive and run the target dialogue robot information.

The target terminal refers to a terminal to which the dialogue robot is to be deployed.

Specifically, the terminal receives the target dialogue robot information returned by the server according to the target robot identifier and the outcome identifier of each dialogue branch, and sends the target dialogue robot information and the outcome identifier of each dialogue branch to each target terminal in parallel. Each target terminal receives the sent target dialogue robot information and the outcome identifier of each dialogue branch, runs the dialogue robot information to obtain a dialogue interface. The training of the dialogue may be performed with the dialogue robot in the dialogue interface. In a specific embodiment, the server may acquire an address of each target terminal when finding the associated dialogue robot to serve as the target dialogue robot and the associated outcome identifier, and the target dialogue robot and the associated outcome identifier are sent to each target terminal according to the

address of each target terminal.

In the abovementioned embodiments, the robot deployment instruction is received, the target robot identifier is acquired according to the robot deployment instruction, and the target dialogue robot acquisition request is sent to the server according to the target robot identifier. The target dialogue robot information returned by the server according to the target robot is received, the target dialogue robot information is sent to each target terminal, and the target terminal is configured to receive and run the target dialogue robot information, so that the dialogue robot may be deployed to each target terminal, and each target terminal can perform dialogue training through the dialogue robot, which is convenient to use.

It should be understood that, although various steps in the flowcharts of Figs. 2-10 are shown in order as indicated by the arrows, these steps are not necessarily executed sequentially in the order indicated by the arrows. Unless explicitly stated herein, there is no strict order restriction on the execution of these steps, and these steps may be executed in other orders. In addition, at least part of the steps in Figs. 2-10 may include a plurality of sub-steps or a plurality of stages. These sub-steps or stages are not necessarily completed at the same time, but may be executed at different times. These sub-steps or stages are not necessarily executed in order, instead, may be executed in turn or alternately with other steps or at least part of sub-steps or stages of other steps.

In an embodiment, as shown in Fig. 11, a dialogue robot configuration apparatus 1100 is provided, including: a request sending module 1102, a page display module 1104, a distance calculation module 1106, a component configuration module 1108, and a dialogue robot configuration module 1110.

The request sending module 1102 is configured to receive a dialogue robot configuration instruction, and send a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction.

The page display module 1104 is configured to receive and display a dialogue flow editing page returned by the server. The dialogue flow editing page includes a preset component area and a dialogue flow editing area;

The distance calculation module 1106 is configured to acquire coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculate a distance between the target component and a component existing in

the dialogue flow editing area according to the coordinates.

The component configuration module 1108 is configured to display a target area box in the dialogue flow editing area according to the distance, receive a target component configuration instruction, and display the target component in the target area box and hide the target area box according to the target component configuration instruction.

The dialogue robot configuration module 1110 is configured to return to execute the step that the coordinates of the target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

In an embodiment, the dialogue robot configuration module 1110 further includes: an instruction receiving module and a basic information acquisition module. The instruction receiving module is configured to receive a robot information configuration instruction which carries a robot identifier, and acquires a corresponding information configuration page according to the robot identifier and displays the corresponding information configuration page.

The basic information acquisition module is configured to receive an information configuration completion instruction, acquire basic configuration information according to the information configuration completion instruction, and send the basic configuration information and the robot identifier to the server.

In one of the embodiments, the component configuration module 1108 is further configured to acquire the coordinates of the existing component corresponding to a target distance, calculate target coordinates according to the coordinates of the existing component, acquires a target area according to the target coordinates, and displays the target area box according to the target area.

In an embodiment, the dialogue robot configuration apparatus 1100 further includes a termination interface display module and an outcome identifier configuration module. The termination interface display module is configured to detect a number of branch dialogues of the dialogue robot, acquire a termination component of each branch dialogue, and display a dialogue termination configuration interface according to the termination component of each branch dialogue.

The outcome identifier configuration module is configured to acquire a dialogue outcome identifier corresponding to the termination component through the dialogue

termination configuration interface, and send the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server. The server is configured to associate and save the dialogue robot and a target robot identifier.

In an embodiment, the outcome identifier configuration module further configured to receive a dialogue robot preview instruction, send a dialogue flow QR code acquisition request to the server according to the dialogue robot preview instruction, acquire and display the QR code returned by the server and generated according to the dialogue robot, receive a scanning instruction for the QR code, analyze the QR code to obtain the dialogue robot according to the scanning instruction, and run the dialogue robot to obtain a dialogue interface.

In an embodiment, the dialogue robot configuration apparatus 1100 is further configured to: receive an editing instruction for the target component, acquire the editing interface corresponding to the target component according to the editing instruction, display the editing interface, acquire the edited dialogue information through the editing interface, and write the dialogue information into the target component.

In an embodiment, the dialogue robot configuration apparatus 1100 further includes a deployment request sending module and a deployment module. The deployment request sending module is configured to receive a robot deployment instruction, acquire the target robot identifier according to the robot deployment instruction, and send a target dialogue robot acquisition request to the server according to the target robot identifier.

The deployment module is configured to receive target dialogue robot information returned by the server according to the target robot identifier, and send the target dialogue robot information to each target terminal. The target terminal is configured to receive and run the target dialogue robot information.

Specific definition of dialogue robot configuration apparatus may refer to the definition of the dialogue robot configuration method hereinabove, which will not be elaborated herein. Various modules in the abovementioned dialogue robot configuration apparatus may be implemented in whole or in part by software, hardware, and combinations thereof. Each of the above modules may be embedded in or independent of a processor in a computer device, or may be stored in a memory in the computer device in a software form, so that the processor invokes operations

corresponding to the above modules.

In an embodiment, a computer device is provided. The computer device may be a terminal, and an internal structure diagram thereof may be as shown in Fig. 12. The computer device includes a processor, a memory, a network interface, a display screen and an input device connected by a system bus. The processor of the computer device is configured to provide calculation and control capabilities. The memory of the computer device includes a non-volatile storage medium and an internal memory. The non-volatile storage medium stores an operating system and a computer program. The internal memory provides an environment for operation of the operating system and the computer program in the non-volatile storage medium. The network interface of the computer device is configured to communicate with an external terminal via a network connection. The computer program is executed by the processor to implement a dialogue robot configuration method. The display screen of the computer device may be a liquid crystal display screen or an electronic ink display screen, and the input device of the computer device may be a touch layer covered on the display screen, or a button, a trackball or a touchpad provided on a housing of the computer device, or may be an external keyboard, a touchpad, a mouse, or the like.

It will be understood by those skilled in the art that the structure shown in Fig. 12 is only a block diagram of a part of the structure related to the solution of the present application, and does not constitute a limitation of the computer device to which the solution of the present application is applied. The specific computer device may include more or fewer components than those shown in the figures, or combine some components, or have different component arrangements.

In an embodiment, a computer device is provided, including a memory and a processor. The memory stores a computer program. The processor, when executing the computer program, implements steps of the dialogue robot configuration method in any abovementioned embodiment.

In an embodiment, a computer-readable storage medium stores a computer program thereon. The computer program, when being executed by the processor, implements steps of the dialogue robot configuration method in any of the abovementioned embodiments.

Those skilled in the art can understand that all or part of the processes in the above method embodiments may be implemented by a computer program to instruct related hardware, and the computer program may be stored in a computer-readable

storage medium. The computer-readable storage medium may be nonvolatile or volatile. The computer program, when being executed, may include flowcharts of the embodiments of the methods described above. Any reference to a memory, storage, database, or other media used in various embodiments provided by the present application may include nonvolatile and/or volatile memories. The nonvolatile memory may include a Read Only Memory (ROM), a Programmable ROM (PROM), an Electrically Programmable ROM (EPROM), an Electrically Erasable Programmable ROM (EEPROM), or a flash memory. The volatile memory may include a Random Access Memory (RAM) or an external cache memory. As an illustration rather than a limitation, the RAM is available in various forms, such as a Static RAM (SRAM), a Dynamic RAM (DRAM), a Synchronous DRAM (SDRAM), a Dual Data Rate SDRAM (DDRSDRAM), an Enhanced SDRAM (ESDRAM), a Synchlink DRAM (SLDRAM), a Rambus Direct RAM (RDRAM), a Direct Memory Bus Dynamic RAM (DRDRAM), a Memory Bus Dynamic RAM (RDRAM), etc.

The foregoing descriptions are merely specific implementations of this application, but are not intended to limit the protection scope of this application. Any variation or replacement readily figured out by a person skilled in the art within the technical scope disclosed in this application shall fall within the protection scope of this application. Therefore, the scope of protection of the present application shall be subject to the scope of protection of the claims.

What is claimed is:

1. A dialogue robot configuration method, comprising:

receiving a dialogue robot configuration instruction, and sending a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction;

receiving and displaying the dialogue flow editing page returned by the server, wherein the dialogue flow editing page comprises a preset component area and a dialogue flow editing area;

acquiring coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculating a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates;

displaying a target area box in the dialogue flow editing area according to the distance, receiving a target component configuration instruction, and displaying the target component in the target area box and hiding the target area box according to the target component configuration instruction; and

returning to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

2. The method as claimed in claim 1, before receiving a dialogue robot configuration instruction, and sending a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction, further comprising:

receiving a robot information configuration instruction which carries a robot identifier, acquiring a corresponding information configuration page acquired according to the robot identifier, displaying the corresponding information configuration page; and

receiving an information configuration completion instruction, acquiring basic configuration information according to the information configuration completion instruction, and sending the basic configuration information and the robot identifier to the server.

3. The method as claimed in claim 1, wherein displaying a target area box in the dialogue flow editing area according to the distance comprises:

acquiring coordinates of an existing component corresponding to the target distance, calculating target coordinates according to the coordinates of the existing component, acquiring a target area according to the target coordinates, and displaying the target area box according to the target area.

4. The method as claimed in claim 1, after returning to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot, further comprising:

detecting a number of branch dialogues of the dialogue robot, acquiring a termination component of each branch dialogue, and displaying a dialogue termination configuration interface according to the termination component of each branch dialogue; and

acquiring a dialogue outcome identifier corresponding to the termination component through the dialogue termination configuration interface, and sending the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server, wherein the server is configured to associate and save the dialogue robot and a target robot identifier.

5. The method as claimed in claim 4, after acquiring the dialogue outcome identifier corresponding to the termination component through the dialogue termination configuration interface, and sending the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server, wherein the server is configured to associate and save the dialogue robot and the target robot identifier, the method further comprises:

receiving a dialogue robot preview instruction, and sending a dialogue flow Quick Response (QR) code acquisition request to the server according to the dialogue robot preview instruction;

acquiring and displaying the QR code returned by the server and generated according to the dialogue robot;

receiving a scanning instruction for the QR code, and analyzing the QR code to obtain the dialogue robot according to the scanning instruction; and

running the dialogue robot to obtain a dialogue interface.

6. The method as claimed in claim 1, wherein the displaying the target component in the target area box and hiding the target area box according to the target component

configuration instruction comprises:

receiving an editing instruction of the target component, and acquiring an editing interface corresponding to the target component according to the editing instruction and displaying the editing interface; and

acquiring edited dialogue information through the editing interface, and writing the dialogue information into the target component.

7. The method as claimed in claim 1, after returning to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot, further comprising:

receiving a robot deployment instruction, acquiring the target robot identifier according to the robot deployment instruction, and sending a target dialogue robot acquisition request to the server according to the target robot identifier; and

receiving target dialogue robot information returned by the server according to the target robot identifier, and sending the target dialogue robot information to each target terminal, wherein the target terminal is configured to receive and run the target dialogue robot information.

8. A dialogue robot configuration apparatus, comprising:

a request sending module, configured to receive a dialogue robot configuration instruction, and send a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction;

a page display module, configured to receive and display a dialogue flow editing page returned by the server, wherein the dialogue flow editing page includes a preset component area and a dialogue flow editing area;

a distance calculation module, configured to acquire coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculate a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates;

a component configuration module, configured to display a target area box in the dialogue flow editing area according to the distance, receive a target component configuration instruction, and display the target component in the target area box and hide the target area box according to the target component configuration instruction;

and

a dialogue robot configuration module, configured to return to execute the step that the coordinates of the target component in the dialogue flow editing area is acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

9. A computer device, comprising a memory and a processor, wherein the memory stores a computer program, and the processor is configured to the execute program instructions of the memory:

receiving a dialogue robot configuration instruction, and sending a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction;

receiving and displaying the dialogue flow editing page returned by the server, wherein the dialogue flow editing page comprises a preset component area and a dialogue flow editing area;

acquiring coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculating a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates;

displaying a target area box in the dialogue flow editing area according to the distance, receiving a target component configuration instruction, and displaying the target component in the target area box and hiding the target area box according to the target component configuration instruction; and

returning to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured dialogue robot.

10. The computer device as claimed in claim 9, wherein the processor is configured to:

receive a robot information configuration instruction which carries a robot identifier, acquire a corresponding information configuration page acquired according to the robot identifier, and display the corresponding information configuration page; and

receive an information configuration completion instruction, acquire basic configuration information according to the information configuration completion instruction, and send the basic configuration information and the robot identifier to the server.

11. The computer device as claimed in claim 9, wherein the processor is configured to:

acquire coordinates of an existing component corresponding to the target distance, calculate target coordinates according to the coordinates of the existing component, acquire a target area according to the target coordinates, and display the target area box according to the target area.

12. The computer device as claimed in claim 9, wherein the processor is configured to:

detect a number of branch dialogues of the dialogue robot, acquire a termination component of each branch dialogue, and display a dialogue termination configuration interface according to the termination component of each branch dialogue; and

acquire a dialogue outcome identifier corresponding to the termination component through the dialogue termination configuration interface, and send the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server, wherein the server is configured to associate and save the dialogue robot and a target robot identifier.

13. The computer device as claimed in claim 12, wherein the processor is configured to:

receive a dialogue robot preview instruction, and send a dialogue flow QR code acquisition request to the server according to the dialogue robot preview instruction;

acquire and display the QR code returned by the server and generated according to the dialogue robot;

receive a scanning instruction for the QR code, and analyze the QR code to obtain the dialogue robot according to the scanning instruction; and

run the dialogue robot to obtain a dialogue interface.

14. The computer device as claimed in claim 9, wherein the processor is configured to:

receive an editing instruction of the target component, and acquire an editing interface corresponding to the target component according to the editing instruction and display the editing interface; and

acquire edited dialogue information through the editing interface, and write the dialogue information into the target component.

15. The computer device as claimed in claim 9, wherein the processor is configured to:

receive a robot deployment instruction, acquire the target robot identifier according to the robot deployment instruction, and send a target dialogue robot acquisition request to the server according to the target robot identifier; and

receive target dialogue robot information returned by the server according to the target robot identifier, and send the target dialogue robot information to each target terminal, wherein the target terminal is configured to receive and run the target dialogue robot information.

16. A computer-readable storage medium, which stores a computer program thereon, wherein the computer program comprises a program instruction; and the program instruction, when being executed by a processor, is used to implement the following steps:

receiving a dialogue robot configuration instruction, and sending a dialogue flow editing page acquisition request to a server according to the dialogue robot configuration instruction;

receiving and displaying the dialogue flow editing page returned by the server, wherein the dialogue flow editing page comprises a preset component area and a dialogue flow editing area;

acquiring coordinates of a target component in the dialogue flow editing area when it is detected that the target component in the preset component area is moved into the dialogue flow editing area, and calculating a distance between the target component and a component existing in the dialogue flow editing area according to the coordinates;

displaying a target area box in the dialogue flow editing area according to the distance, receiving a target component configuration instruction, and displaying the target component in the target area box and hiding the target area box according to the target component configuration instruction; and

returning to execute the step that coordinates of the target component in the dialogue flow editing area are acquired when it is detected that the target component in the preset component area is moved into the dialogue flow editing area until a dialogue flow editing completion instruction is received, so as to obtain a configured

dialogue robot.

17. The computer-readable storage medium as claimed in claim 16, wherein the program instruction, when being executed by a processor, is further used to implement the following steps:

receiving a robot information configuration instruction which carries a robot identifier, acquiring a corresponding information configuration page acquired according to the robot identifier, and displaying the corresponding information configuration page; and

receiving an information configuration completion instruction, acquiring basic configuration information according to the information configuration completion instruction, and sending the basic configuration information and the robot identifier to the server.

18. The computer-readable storage medium as claimed in claim 16, wherein the program instruction, when being executed by a processor, is further used to implement the following steps:

acquiring coordinates of an existing component corresponding to the target distance, calculating target coordinates according to the coordinates of the existing component, acquiring a target area according to the target coordinates, and displaying the target area box according to the target area.

19. The computer-readable storage medium as claimed in claim 16, wherein the program instruction, when being executed by a processor, is further used to implement the following steps:

detecting a number of branch dialogues of the dialogue robot, acquiring a termination component of each branch dialogue, and displaying a dialogue termination configuration interface according to the termination component of each branch dialogue; and

acquiring a dialogue outcome identifier corresponding to the termination component through the dialogue termination configuration interface, and sending the dialogue outcome identifier corresponding to the termination component and the dialogue robot to the server, wherein the server is configured to associate and save the dialogue robot and a target robot identifier.

20. The computer-readable storage medium as claimed in claim 19, wherein the program instruction, when being executed by a processor, is further used to implement the following steps:

receiving a dialogue robot preview instruction, and sending a dialogue flow QR code acquisition request to the server according to the dialogue robot preview instruction;

acquiring and displaying the QR code returned by the server and generated according to the dialogue robot;

receiving a scanning instruction for the QR code, and analyzing the QR code to obtain the dialogue robot according to the scanning instruction; and

running the dialogue robot to obtain a dialogue interface.