ORDER PROCESSING METHOD, ELECTRONIC DEVICE, STORAGE MEDIUM, AND ORDER MANAGEMENT SYSTEM

TECHNICAL FIELD

[0001] This specification relates to the field of Internet technologies, and in particular, to an order processing method, an electronic device, a storage medium, and an order management system.

BACKGROUND

[0002] In some industries, a product or a service purchased by a consumer from a merchant involves processing and manufacturing steps. For example, a catering industry is used as an example. After receiving an order from the consumer, the merchant needs to process dishes in the order, and provide the processed dishes for the consumer. Therefore, a store of the merchant usually includes a front-of-house area and a back-of-house area. The front-of-house area is available for the customer to order and eat. The back-of-house area is an area in which a cook processes dishes. After receiving the order from the consumer in the front-of-house area, the merchant can print, by using a printing device, a ticket that includes dish content of the order, and manually deliver the ticket to a back-of-house area. The cook processes and cooks the dishes based on the dish content in the ticket. In such a manner of manually delivering the receipt, a dish is easily cooked wrongly in a peak period of dining, and efficiency is relatively low. Consequently, dining duration of the consumer increases.

[0003] Content of the background part is merely information learned of by the inventor, and neither means that the information has entered a public domain before an application date of the present disclosure, nor means that the information can become a conventional technology of the present disclosure.

SUMMARY

[0004] This specification provides an order processing method, an electronic device, a storage

medium, and an order management system, to improve order processing efficiency of the merchant and reduce a probability of an error in a dish cooking process.

[0005] According to a first aspect, this specification provides an order processing method, applied to an order management system of a target merchant. The order management system comprises at least one POS device and at least one display device, different display devices are responsible for managing processing processes of different types of products, and the method is performed by any target display device in the at least one display device and comprises: receiving a target order from a target POS device, wherein the target order comprises at least one to-be-processed product, and the target POS device is any one of the at least one POS device; determining, from the target order based on a product type that the target display device is responsible for managing, a target product set that needs to be managed by the target display device; and displaying at least some products in the target product set on a display of the display device based on a current operating mode of the display device, to guide a worker of the target merchant to perform a target operation on the at least some products, wherein the display device comprises a plurality of operating modes, and different operating modes implement guidance on workers of different roles.

[0006] According to a second aspect, this specification further provides an electronic device, applied to an order management system, wherein the order management system comprises at least one POS device and at least one display device, and the electronic device serves as the display device comprises: at least one storage medium, storing at least one instruction set, to manage order data; and at least one processor, communicatively connected to the at least one storage medium. When the electronic device runs, the at least one processor reads the at least one instruction set, and performs the order processing method according to the first aspect based on an indication of the at least one instruction set.

[0007] According to a third aspect, this specification further provides a computer-readable non-transitory storage medium. The computer-readable non-volatile storage medium stores at least one instruction set, and when the at least one instruction set is executed by at least one processor, the order processing method according to the first aspect is implemented.

[0008] According to a fourth aspect, this specification further provides an order management system, configured to provide an order management service to a target merchant. The system comprises at least one POS device and at least one display device. The at least one POS device is

separately configured to: obtain a target order, and send the target order to the at least one display device. The target order comprises at least one to-be-processed product. Each of the at least one display device is configured to: determine, from the target order based on a product type that the display device is responsible for managing, a target product set that needs to be managed by the display device; and display at least some products in the target product set on a display of the display device based on a current operating mode of the display device, to guide a worker of the target merchant to perform a target operation on the at least some products. The display device comprises a plurality of operating modes, and different operating modes implement guidance on workers of different roles.

[0009] Other functions of the order processing method, the electronic device, the storage medium, and the order management system provided in this specification are partially listed in the following descriptions. Creative aspects of the order processing method, the electronic device, the storage medium, and the order management system provided in this specification can be fully explained by practice or by using the methods, apparatuses, and combinations described in the following detailed examples.

BRIEF DESCRIPTION OF DRAWINGS

[0010] To describe the technical solutions in the embodiments of this specification more clearly, the following briefly describes the accompanying drawings needed for describing the embodiments. Clearly, the accompanying drawings in the following descriptions show merely some embodiments of this specification, and a person of ordinary skill in the art can still derive other drawings from these accompanying drawings without creative efforts.

[0011] FIG. 1 is a schematic diagram of an application scenario 100 of an order management system according to an embodiment of this specification;

[0012] FIG. 2 is a diagram of a hardware structure of a computing device 200 according to an embodiment of this specification;

[0013] FIG. 3 is a flowchart of an order processing method according to an embodiment of this specification;

[0014] FIG. 4A is a schematic diagram of an order delivery process according to an embodiment of this specification;

[0015] FIG. 4B is a schematic diagram of another order delivery process according to an embodiment of this specification;

[0016] FIG. 5 is a schematic diagram of order content of a target order according to an embodiment of this specification;

[0017] FIG. 6 is a schematic diagram of an interaction page of a target display device in a first mode according to an embodiment of this specification;

[0018] FIG. 7 is a schematic diagram of another interaction page of a target display device in a first mode according to an embodiment of this specification;

[0019] FIG. 8 is a schematic diagram of an interaction page of a target display device in a second mode according to an embodiment of this specification; and

[0020] FIG. 9 is a schematic diagram of displaying a to-be-processed product and a processed product in a third mode by a target display device according to an embodiment of this specification.

DESCRIPTION OF EMBODIMENTS

[0021] Specific application scenarios and requirements of this specification are provided in the following descriptions, so that a person skilled in the art can manufacture and use content of this specification. For the person skilled in the art, various local modifications to the disclosed embodiments are clear, and the general principles defined herein can be applied to other embodiments and applications without departing from the spirit and scope of this specification. Therefore, this specification is not limited to the shown embodiments, but has a widest scope consistent with that of the claims.

[0022] The terms used herein are only intended to describe a particular example embodiment, but do not impose a limitation. For example, unless otherwise specified in the context, the singular forms "one", "a", and "the" used herein can also include a plural form. When used in this specification, the terms "include", "comprise", and/or "have" indicate/indicates existence of an associated integer, step, operation, element, and/or component, but does not exclude existence of one or more other features, integers, steps, operations, elements, components, and/or groups, or another feature, integer, step, operation, element, component, and/or group can be added to the system/method.

[0023] In consideration of the following descriptions, these and other features of this

specification, operations and functions of related components of the structure, and economy of combination and manufacturing of components can be significantly improved. With reference to the accompanying drawings, all of these form a part of this specification. However, it should be clearly understood that the accompanying drawings are merely used for the purpose of illustration and description, and are not intended to limit the scope of this specification. It should be further understood that the accompanying drawings are not drawn to scale.

[0024] The flowchart used in this specification illustrates operations implemented by a system in some embodiments of this specification. It should be clearly understood that operations in the flowchart can be implemented out of sequence. On the contrary, operations can be implemented reversely or simultaneously. In addition, one or more other operations can be added to the flowchart. One or more operations can be removed from the flowchart.

[0025] Embodiments described in this specification can be applied to an order management scenario of a merchant. The merchant can be merchants that provide various products or services, including but not limited to a catering merchant, a store, a supermarket, a fruit and vegetable store, a flower store, a bookstore, a hotel, a beauty salon, a dry cleaning store, a barber store, etc. The merchant can be a small/micro merchant, a large merchant, a chain store, etc. This is not limited in this specification.

[0026] In some embodiments, the merchant can be a merchant that performs service development on an offline channel (in a real store). In this case, an order of the merchant can include an offline order. In some embodiments, the merchant can alternatively be a merchant that performs service development on an online channel (Internet). In this case, an order of the merchant can include an online order. In some embodiments, the merchant can alternatively be a merchant that support service development on both an online channel and an offline channel. In this case, an order of the merchant can include an offline order and an online order.

[0027] In this specification, the online order is a product or service purchase request submitted by a consumer on the online channel (for example, a website or an application). The offline order is a product or service purchase request submitted by the consumer on the offline channel, for example, a product or service purchase request submitted by the consumer and a cashier in a face-to-face manner.

[0028] When the merchant needs to perform service development on the offline channel, the merchant needs to purchase a point of sale (POS) device, to manage the offline order. The POS

device provides an interaction function, and can display a product or a service sold by the merchant. The cashier of the merchant can help the consumer select the product or service on the POS device and submit an order based on a purchase requirement of the consumer. The order is an offline order.

[0029] When the merchant performs service development on the online channel, the merchant can develop a store mini program, and dispose an access entry (for example, a two-dimensional code) of the store mini program in a store or any other possible location. The consumer accesses the store mini program through the access entry, and submits the order in the store mini program.

[0030] When the merchant performs service development on the online channel, the merchant can further cooperate with different network platforms. The network platform can include but is not limited to a delivery platform, a wallet platform, a social platform, etc. The merchant may be interconnected to different network platforms in different manners. For example, when cooperating with some platforms (for example, a delivery platform), the merchant can apply for opening an online store on these platforms, and place a product or a service of the merchant in the online store, so that a consumer places an order in the online store. For another example, when the merchant cooperates with some other platforms (for example, the wallet platform or the social platform), the store mini program can be placed on these platforms, so that the consumer places an order in the store mini program.

[0031] In an online service development scenario, the merchant usually needs to cooperate with a plurality of network platforms, to attract more consumers. Therefore, an interconnection between the merchant and the network platform needs to take a lot of effort. In particular, in some geographical areas, each network platform covers a small quantity of consumers, and there are a large quantity of network platforms, for example, there may be hundreds or even thousands of network platforms. In such geographical areas, a quantity of network platforms that need to be interconnected to the merchant is huge, and it needs to take huge effort.

[0032] A POS device used by the merchant for offline service development can only process receiving of an offline order, and cannot receive an online order. To normally accept an order on the network platform, the merchant needs to purchase a dedicated order acceptance device from the network platform. Sometimes, a plurality of network platforms are active in the market, but no network platform is in a market monopoly position. In other words, the plurality of network platforms cover different consumer groups. In this case, if the merchant wants to operate normally, the merchant is forced to cooperate with each of the plurality of network platforms. When the

merchant cooperates with the plurality of network platforms, the merchant needs to purchase the order acceptance device from the plurality of network platforms. Consequently, purchase costs are relatively high. In particular, the purchase costs of the merchant are huge when a relatively large quantity of network platforms are interconnected. In addition, a counter of the merchant is crowded if these order acceptance devices are placed on the counter. In addition, in the face of so many order acceptance devices, the merchant tends to be distracted, and does not process an order in a timely manner. Consequently, experience of the consumer is affected.

[0033] Further, when the merchant cooperates with the plurality of network platforms, the merchant has a relatively large quantity of order sources. Orders generated on different network platforms are stored in servers corresponding to the network platforms. When the merchant manages the online order, the merchant needs to visit serving ends of different network platforms to perform order management (for example, an order query or order summary). The merchant cannot perform unified management of all orders. In addition, different network platforms may have different operation manners for order management. The merchant needs to be familiar with operation manners of different network platforms. Due to the above-mentioned factors, an order management workload of the merchant is relatively large, and order management efficiency is relatively low.

[0034] Based on at least one of the technical problems described above, this specification provides an order management system. The order management system can help a merchant implement one-stop order management. To help a reader better understand one-stop order management, the following describes the order management system with reference to FIG. 1.

[0035] FIG. 1 is a schematic diagram of an application scenario 100 of an order management system according to an embodiment of this specification. For ease of understanding, an example in which a catering scenario is taken for description in FIG. 1. As shown in FIG. 1, the order management system can include a point of sale (POS) device 110 (or referred to as a POS end or a front-end device) and a service device 120 (or referred to as a serving end, a server, or a back-end device).

[0036] The POS device 110 is a multi-functional terminal. The POS device 110 can be considered as a client of the order management system. In some embodiments, the POS device 110 can be a mobile device, for example, a handheld device. The POS device 110 can be carried by a worker of a merchant to different locations in a store for operation, and there is relatively high

convenience. In some embodiments, POS device 110 can be a non-mobile device. In this case, the POS device 110 is usually placed on a checkout counter in an offline store of the merchant.

[0037] In this specification, the POS device 110 can receive an offline order and an online order of the merchant. The POS device 110 can further perform cash collection processing for the offline order. The POS device 110 can also be referred to as a cash collection device or a sales device, or referred to as an all-in-one POS device.

[0038] The POS device 110 is an electronic device with a specific computing capability. In some embodiments, the POS device 110 can include a hardware device with a data processing function and a necessary program needed for driving the hardware device to work. The POS device 110 can manage an order by driving the hardware device to execute the program. For example, the POS device 110 can be installed with order management software (or an order management program). The POS device 110 can manage the order by running the order management software. The order management software can correspond to an operating system installed in the POS device 110, or can correspond to an application (APP) or an instruction set installed in the POS device 110. The order management software can be software preset in the hardware device of the POS device 110 (for example, software built in the POS device 110 when the POS device 110 is delivered from a factory), or can be software that is later installed in the POS device 110 by the worker of the merchant. This is not limited in this specification.

[0039] In some embodiments, the POS device 110 can have a display, or the POS device 110 can be externally connected to a display. The POS device 110 can provide an interaction capability through the display. For example, the POS device 110 displays, on the display, a product or a service sold by the merchant, and generates an offline order based on a product or a service selected by an operator (the worker of the merchant or a consumer). The POS device 110 can further display a cash collection entry on the display, so that an operator performs a cash collection operation for the offline order.

[0040] When cash collection is performed for the order, the POS device 110 supports a plurality of payment manners, including but not limited to cash payment, card scanning payment, code scanning payment, biological recognition (for example, facial recognition) based payment, near field communication (NFC) based payment, etc.

[0041] In some embodiments, when the POS device 110 supports cash payment, the POS device 110 can be provided with a cash box to store cash.

[0042] In some embodiments, a card reading apparatus 111 can be built in or externally connected to the POS device 110 when the POS device 110 supports card scanning payment. When a built-in manner is used, the card reading apparatus 111 can be disposed at any possible location of the POS device 110. This is not limited in this specification. When an externally connected manner is used, the POS device 110 can be connected to the card reading apparatus 111 in a wired or wireless manner. This is not limited in this specification. A wired connection manner can include but is not limited to a universal serial bus (USB) connection, an Ethernet connection, an optical fiber connection, etc. A wireless connection manner can include but is not limited to a Wi-Fi connection, a Bluetooth connection, etc.

[0043] The card reading apparatus 111 is an apparatus that can read card information of a payment card (for example, a debit card or a credit card) of the consumer according to a preset payment specification. When the consumer selects card scanning payment, the POS device 110 can control the card reading apparatus 111 to enter a card reading mode. The card reading apparatus 111 can read the card information of the payment card according to the preset payment specification in response to that the consumer places the payment card close to, attaches the payment card to, or inserts the payment card into the card reading apparatus.

[0044] In some embodiments, a code scanning apparatus 112 can be built in or externally connected to the POS device 110 when the POS device 110 supports code scanning payment. When a built-in manner is used, the code scanning apparatus 112 can be disposed at any possible location of the POS device 110. This is not limited in this specification. When an externally connected manner is used, the POS device 110 can be connected to the code scanning apparatus 112 in a wired or wireless manner. This is not limited in this specification. The code scanning apparatus 112 is an apparatus with a code scanning capability. For example, the code scanning apparatus 112 can include a camera module. When the consumer chooses to pay the offline order by using a payment code, the POS device 110 can control the code scanning apparatus 112 to enter a scanning mode. In response to that the consumer aligns the payment code with the code scanning apparatus 112, the code scanning apparatus 112 scans code information of the payment code by using the camera module.

[0045] In some embodiments, a photographing apparatus (not shown in FIG. 1) can be built in or externally connected to the POS device 110 when the POS device 110 supports biological recognition based payment. When a built-in manner is used, the photographing apparatus can be

disposed at any possible location of the POS device 110. This is not limited in this specification. When an externally connected manner is used, the POS device 110 can be connected to the photographing apparatus in a wired or wireless manner. This is not limited in this specification. For example, when the consumer chooses to use facial scanning payment, the POS device 110 can control the photographing apparatus to enter a photographing mode. In response to that the consumer aligns a face with the photographing apparatus, the photographing apparatus photographs a face image of the consumer.

[0046] In some embodiments, a near field communication apparatus (not shown in FIG. 1) can be built in or externally connected to the POS device 110 when the POS device 110 supports near field communication based payment. The near field communication apparatus can be disposed at any possible location of the POS device 110. This is not limited in this specification. When the consumer selects near field communication based payment, the POS device 110 can control the near field communication apparatus to enter a communication mode. When the consumer places a terminal device with a near field communication component close to the near field communication apparatus, the near field communication apparatus communicates with the near field communication component in the terminal, to obtain payment information of the order.

[0047] In some embodiments, a printing apparatus 113 can be built in or externally connected to the POS device 110. When a built-in manner is used, the printing apparatus 113 can be disposed at any possible location of the POS device 110. This is not limited in this specification. When an externally connected manner is used, the POS device 110 can be connected to the printing apparatus 113 in a wired or wireless manner. This is not limited in this specification. A printing paper or a label paper can be disposed in the printing apparatus 113. After the consumer successfully pays an order, the POS device 110 can control the printing apparatus 113 to print a receipt or an order label that is of the consumer and that corresponds to the order.

[0048] In some embodiments, the POS device 110 can further include an audio output apparatus (not shown in FIG. 1). The audio output apparatus can be, for example, a speaker. For example, when receiving an online order, the POS device 110 can output voice information by using the audio output apparatus, to remind the worker of the merchant to process the order in a timely manner. For another example, after the consumer performs a payment operation for an offline order by using the POS device 110, in response to that the POS device 110 receives a payment result of the order, the POS device 110 can output voice information by using the audio

output apparatus, to indicate that the order is successfully paid or unsuccessfully paid.

[0049] Still as shown in FIG. 1, the service device 120 is a computing system with a specific computing capability. The service device 120 is communicatively connected to the POS device 110, and provides an order management service to the POS device 110. The service device 120 can correspond to a single computing device, or can correspond to a computing cluster including a plurality of computing devices. The service device 120 can be deployed locally, or can be deployed remotely. For example, the service device 120 can be a cloud server. In some embodiments, the service device 120 can include a hardware device with a data processing function and a necessary program needed for driving the hardware device to work. The service device 120 can provide the order management service to the POS device by driving the hardware device to execute the program. In some embodiments, the service device 120 can provide the order management service to the POS device in a software as a service (SaaS) mode.

[0050] In some embodiments, when the service device 120 is deployed remotely, the service device 120 can be connected to POS devices 110 of a plurality of merchants, and provide the order management service to the POS devices 110 of the plurality of merchants. In this case, the service device 120 can perform isolated management on orders of different merchants by using various isolation technologies, to avoid mutual interference between order data of the different merchants, and improve security of the order data. A person skilled in the art can understand that content of the order management service provided by the service device 120 to the POS devices 110 of the different merchants is similar. In the descriptions of this specification, only an example in which the service device 120 provides the order management service to a POS device 110 of one merchant is taken for description.

[0051] A service provided by the service device 120 to the POS device 110 can include an order management service for an offline order, and can further include an order management service for an online order.

[0052] The following describes a working process of the order management system by using a catering scenario as an example.

[0053] With reference to FIG. 1, a catering store can include a front-of-house area and a back-of-house area. The front-of-house area is used to receive a consumer and is used by the consumer for dining. The front-of-house area can also be referred to as a reception area. The back-of-house area is an area in which a cook cooks dishes. The back-of-house area can also be referred to as a

preparation area. The POS device 110 is usually located in the front-of-house area. The service device 120 can be located in the front-of-house area, or can be in a cloud.

[0054] A process in which the order management system processes the offline order is follows: As shown in FIG. 1, a consumer A goes to a store to have a dinner. The consumer A notifies a cashier of a required dish. The cashier selects a corresponding dish on the POS device 110, and places an order. The POS device 110 generates an offline order in response to an order placing operation of the cashier. The POS device 110 sends the offline order to the service device 120, so that the service device 120 stores the offline order. The POS device 110 can perform cash collection processing for the offline order based on a payment manner selected by the consumer.

[0055] The order management system can receive online orders from a plurality of online channels. The following provides descriptions by using three cases as examples.

[0056] Case 1: As shown in FIG. 1, the service device 120 can be deployed with a store mini program. A two-dimensional code of the store mini program is disposed on a dining table (or another location) of the store. A consumer B can scan the two-dimensional code by using a terminal device, to view a page of the store mini program. The consumer B selects a desired dish on the page of the mini program, and completes online payment. In this case, the service device 120 generates an online order, stores the online order, and then sends the online order to the POS device 110. Therefore, the POS device 110 receives the online order.

[0057] Case 2: As shown in FIG. 1, the merchant can place the store mini program on a network platform. The following provides descriptions by using an example in which the store mini program is placed on a wallet platform. When a consumer C uses the wallet platform, the consumer C accesses the store mini program on the wallet platform, selects a desired dish on the page of the mini program, and completes online payment. In this case, the wallet platform generates an online order, and sends the online order to the service device 120. After storing the online order, the service device 120 sends the online order to the POS device 110. Therefore, the POS device 110 receives the online order.

[0058] Case 3: As shown in FIG. 1, the merchant can open an online store on a network platform. The following provides descriptions by using an example in which the online store is opened on a delivery platform. When a consumer D uses the delivery platform, the consumer D accesses the online store of the merchant on the delivery platform, selects a required dish, and completes online payment. In this case, the delivery platform generates an online order, and sends

the online order to the service device 120. After storing the online order, the service device 120 sends the online order to the POS device 110. Therefore, the POS device 110 receives the online order.

[0059] It can be learned from the above-mentioned descriptions that an offline order received by the merchant and online orders from all channels are stored in the service device 120. Therefore, the merchant can implement unified management of all orders on the service device 120. Compared with a manner in which the merchant respectively manages orders on different channels, the order management system provided in this specification can improve convenience of order management of the merchant and improve order management efficiency.

[0060] Based on the order management system in FIG. 1, the merchant can implement one-stop order management by using the order management system provided in this specification. The one-stop order management is embodied in at least the following aspects: (1) The merchant can use one POS device 110 to implement processing of the offline order or implement processing of the online orders from the plurality of online channels. The merchant does not need to be interconnected to each of the plurality of online channels, thereby avoiding energy and time costs required for work docking. In addition, the merchant does not need to purchase an order acceptance device from each of the plurality of online channels, to reduce purchase costs of the merchant. (2) All orders received by the merchant are stored in the service device 120, and the merchant can implement unified management such as order query or summary on all the orders on the service device 120. The merchant does not need to perform decentralized management on the orders on different network platforms, to improve order management efficiency.

[0061] In some scenarios, a product or a service purchased by a consumer from a merchant involves processing and manufacturing steps. For example, a catering industry is used as an example. After receiving an order from the consumer, the merchant needs to process dishes in the order, and provide the processed dishes for the consumer. Therefore, a store of the merchant usually includes a front-of-house area and a back-of-house area. The front-of-house area is available for the customer to order and eat. The back-of-house area is an area in which a cook processes dishes. After the merchant receives the order (including an offline order and an online order) of the consumer in the front-of-house area by using the POS device 110, the POS device 110 can control the printing apparatus to print a kitchen order ticket that includes dish content of the order, and the kitchen order ticket is manually delivered to a back-of-house area. The cook

cooks a dish based on the dish content in the kitchen order ticket. In such a manner of manually delivering the kitchen order ticket, a dish is easily cooked wrongly in a peak period of dining, and efficiency is relatively low. Consequently, dining duration of the consumer increases.

[0062] Therefore, in some embodiments of this specification, as shown in FIG. 1, the order management system can further include one or more display devices 130. For example, in the catering scenario, the display device 130 can also be referred to as a kitchen display system (KDS). The display device 130 is disposed in the back-of-house area, and is configured to display dishes in the order to the cook, to guide the cook to process and cook the displayed dishes. An order can include different types of products such as hot dishes, cold dishes, staple food, and drinks. In actual application, a store usually includes a plurality of processing areas, and different processing areas are used to process different types of products. For example, the store includes a cold dish processing area, a hot dish processing area, a staple food processing area, and a beverage processing area. One display device 130 can be disposed in each processing area, to manage product processing processes in different processing areas.

[0063] Different display devices 130 are responsible for managing processing processes of different types of products. Therefore, in some embodiments, after receiving an order, the POS device 110 can first send the order to the service device 120. The service device 120 splits products in the order based on types, combines products of the same type into a sub-order, and further distributes the sub-order to a corresponding display device 130 based on a product type. After receiving the sub-order, the display device 130 displays the product in the sub-order to guide the cook to process and cook the displayed product.

[0064] However, when a relatively large quantity of POS devices and display devices are deployed in a merchant, the service device 120 needs to split and combine a large quantity of orders. This can involve very complex processing logic, implementation complexity is high, and flexible application is difficult. In addition, the service device 120 is usually deployed in a remote manner, and network coverage in the back-of-house area in which the display device 130 is located is usually poor. Consequently, a communication link between the service device 120 and the display device 130 is unstable. Therefore, the display device 130 may receive no sub-order or have a relatively large delay in receiving a sub-order. This seriously affects cooking dishes by the cook.

[0065] To resolve the above-mentioned problem, in the order management system provided in this specification, the display device 130 can be a display device having a specific computing

capability, and the display device 130 can be communicatively connected to the POS device 110. The display device 130 and the POS device 110 can be connected over a local area network, or can be connected over a global area network. After the POS device 110 receives the target order (which can be an online order or an offline order), the POS device 110 sends the target order to the display device 130. Because the display device 130 has a specific computing capability, the display device 130 can determine, from the target order based on a product type that the display device 130 is responsible for managing, a target product set that needs to be managed by the display device 130, and further display at least some products in the target product set on a display, to guide the worker of the merchant to perform a target operation on a displayed product.

[0066] Compared with a manner of manually delivering a ticket, the display device 130 is used to display a product in an order, to guide the cook to process and cook the product, thereby improving cooking efficiency of the cook, and reducing a probability of an error in cooking by the cook. Further, the display device 130 can independently select, from the target order, a product that needs to be displayed by the display device 130, and the service device 120 does not need to perform an order splitting and combination operation on the order, thereby reducing implementation complexity of the service device 120. Still further, because both the POS device 110 and the display device 130 are deployed in the store, in an area in which network coverage is poor, the POS device 110 and the display device 130 can perform direct communication over a local area network, and the service device 120 does not need to perform forwarding. In this way, working of the display device 130 no longer depends on stability of the global area network, to avoid a problem of a sub-order loss or a receiving delay due to instability of an external network, thereby further improving cooking efficiency.

[0067] In addition, the display device 130 further has a plurality of operating modes. In different operating modes, the display device 130 can display different content to guide workers of different roles of the target merchant, so that the display device 130 has a plurality of guidance uses. The display device 130 can guide workers of different roles to improve efficiency of the workers of different roles, thereby improving overall order processing efficiency of the merchant.

[0068] In some embodiments, after a dish is cooked, the cook can further send a dish cooking completion notification to the POS device 110 by using the display device 130, so that the POS device 110 knows an order processing progress.

[0069] In stores of some merchants, the back-of-house area include a plurality of ports.

Different ports are equipped with different cooks who are responsible for cooking different types of dishes. With reference to FIG. 1, an example in which the back-of-house area includes a cold dish port and a hot dish port is used. A cook X1 is responsible for cooking a cold dish and a cook X2 is responsible for cooking a hot dish. In this case, one display device 130 can be disposed in the cold dish port, and is configured to display, to the cook X1, a cold dish that needs to be cooked. One display device 130 can be disposed in the hot dish port, and is configured to display, to the cook X2, a hot dish that needs to be cooked. In this way, dish cooking in different ports does not interfere with each other, to further improve cooking efficiency.

[0070] It should be noted that the catering scenario is used as an example in FIG. 1. It can be understood by a person skilled in the art that when the order management system provided in this specification is applied to another scenario, an implementation solution and a technical effect of the order management system are similar to those of the catering scenario, and details are not described for another scenario in this specification.

[0071] FIG. 2 is a diagram of a hardware structure of an electronic device 200 according to an embodiment of this specification. The electronic device 200 can serve as the display device 130 in FIG. 1, to perform an order processing method described in this specification.

[0072] As shown in FIG. 2, the electronic device 200 can include at least one storage medium 230 and at least one processor 220. In some embodiments, the electronic device 200 can further include a communication port 250 and an internal communication bus 210. The electronic device 200 can further include an I/O component 260.

[0073] The internal communication bus 210 can be connected to different system components. For example, the internal communication bus 210 can be connected to the storage medium 230, the processor 220, the communication port 250, and the I/O component 260.

[0074] The I/O component 260 supports an input/output between the electronic device 200 and another component.

[0075] The communication port 250 is used for data communication between the electronic device 200 and the outside. For example, the communication port 250 can be used for data communication between the electronic device 200 and a network. The communication port 250 can be a wired communication port, or can be a wireless communication port.

[0076] The storage medium 230 can include a data storage apparatus. The data storage apparatus can be a non-transitory storage medium, or can be a transitory storage medium. For

example, the data storage apparatus can include one or more of a disk 232, a read-only storage medium (ROM) 234, or a random access storage medium (RAM) 235. The storage medium 230 further includes at least one instruction set stored in the data storage apparatus. The instruction set can include computer program code. The computer program code can include a program, a routine, an object, a component, a data structure, a process, a module, etc.

[0077] The at least one processor 220 can be communicatively connected to the at least one storage medium 230. When the electronic device 200 runs, the at least one processor 220 reads the at least one instruction set, and performs, based on an indication of the at least one instruction set, the order processing method provided in this specification. The processor 220 can perform steps included in the order processing method. The processor 220 can be in a form of one or more processors. In some embodiments, the processor 220 can include one or more hardware processors, for example, a microcontroller, a microprocessor, a reduced instruction set computer (RISC), an application-specific integrated circuit (ASIC), an application-specific instruction set processor (ASIP), a central processing unit (CPU), a graphics processing unit (GPU), a physical processing unit (PPU), a microcontroller unit, a digital signal processor (DSP), a field programmable gate array (FPGA), an advanced RISC machine (ARM), a programmable logic device (PLD), any circuit or processor that can perform one or more functions, or any combination thereof.

[0078] To merely describe a problem, only one processor 220 is shown in the electronic device 200 in the accompanying drawings. However, it should be noted that the electronic device 200 in this specification can further include a plurality of processors. Therefore, the operations and/or method steps disclosed in this specification can be performed by one processor or can be jointly performed by a plurality of processors. For example, if the processor 220 in the electronic device 200 described in this specification performs step A and step B, it should be understood as that step A and step B can be jointly or separately performed by two different processors 220 (for example, a first processor performs step A, and a second processor performs step B, or a first processor and a second processor jointly perform step A and step B).

[0079] FIG. 3 is a flowchart of an order processing method according to an embodiment of this specification. The order processing method is applied to the order management system shown in FIG. 1, and is performed by the POS device 110 and the display device 130 in the order management system through interaction. When the order management system includes a plurality of display devices 130, different display devices are responsible for managing processing

processes of different types of products.

[0080] As shown in FIG. 3, the order processing method can include S310 to S340.

[0081] S310: The POS device obtains a target order, where the target order includes at least one to-be-processed product.

[0082] The order management system can include one or more POS devices. When the order management system includes a plurality of POS devices, the POS device in the S310 can be any one of the plurality of POS devices.

[0083] In some embodiments, the target order can be an offline order. In this case, the POS device can generate the target order based on an order placing operation performed by an operator in an interaction interface. In some embodiments, the target order can be an online order. In this case, the POS device can receive the target order from the service device 120.

[0084] S320: The POS device sends the target order to a target display device.

[0085] The target display device can be any display device in the order management system.

[0086] In some embodiments, when the order management system includes a plurality of display devices, the POS device can send the target order to each of the plurality of display devices. FIG. 4A is a schematic diagram of an order delivery process according to an embodiment of this specification. As shown in FIG. 4A, a catering scenario is used as an example. An order management system of a target merchant includes one POS device 110 and two display devices. The two display devices are denoted as a display device 130-1 and a display device 130-2. The POS device 100 can be arranged in a front-of-house area (namely, a reception area), and the two display devices are arranged in a back-of-house area (namely, a processing area). As shown in FIG. 4A, after obtaining the target order, the POS device 110 sends the target order to the display device 130-1 and the display device 130-2.

[0087] In some embodiments, when the order management system includes a plurality of display devices, the plurality of display devices can include one primary display device and at least one secondary display device. In this case, a manner in which the POS device sends the target order to the plurality of display devices can be as follows: The POS device sends the target order to the primary display device. After the primary display device receives the target order, the primary display device sends the target order to the at least one secondary display device.

[0088] In some embodiments, each display device in the plurality of display devices can be configured as a primary display device or a secondary display device. For example, when any

display device is configured as a primary display device, the primary display device can scan and obtain another connected display device in a local area network, and configure the another display device as a secondary display device.

[0089] In some embodiments, when only one display device exists in the local area network, the display device is configured as a primary display device by default.

[0090] FIG. 4B is a schematic diagram of another order delivery process according to an embodiment of this specification. As shown in FIG. 4B, a catering scenario is used as an example. An order management system of a target merchant includes a POS device 110 and two display devices. The two display devices are denoted as a display device 130-1 and a display device 130-2. The display device 130-1 is a primary display device, and the display device 130-2 is a secondary display device. The POS device 110 can be arranged in a front-of-house area (namely, a reception area), and the two display devices are arranged in a back-of-house area (namely, a processing area). As shown in FIG. 4B, after obtaining the target order, the POS device 110 sends the target order to the display device 130-1. After receiving the target order, the display device 130-1 forwards a first order to the display device 130-2.

[0091] In some embodiments, the POS device can be connected to the display device over a local area network. That is, in the order delivery processes shown in FIG. 4A and FIG. 4B, delivery is performed over the local area network. That is, the POS device 110 sends the target order to each of the display device 130-1 and the display device 130- 2 over the local area network. Alternatively, the POS device 110 sends the target order to the display device 130-1 over the local area network, and the display device 130-1 sends the target order to the display device 130-2 over the local area network. In this way, communication between the POS device and the display device is not affected by stability of an external global area network, and even a merchant in a geographical area with poor network coverage can use the order management system provided in this specification.

[0092] For ease of understanding, FIG. 5 is a schematic diagram of order content of a target order according to an embodiment of this specification. As shown in FIG. 5, a catering scenario is used as an example. The target order can include names of a plurality of products such as a product 1, a product 2, a product 3, and a product 4. For example, the product 1 can be "scrambled eggs with tomatoes", the product 2 can be "steamed fish", product 3 can be "Asian cucumber salad", and the product 4 can be "rice". In some embodiments, the target order can further include a

personalized demand of a consumer for each product, for example, "no green onion", "less salt", "less oil", or "no spicy". In some embodiments, the target order can further include a delivery location corresponding to the order, for example, a table number, to guide a worker to deliver a processed product to an accurate location.

[0093] In the following description, when an example is involved, the order content shown in FIG. 5 is used as an example for description.

[0094] After receiving the target order, the target display device performs S330 and S340. A person skilled in the art can understand that when the order management system includes a plurality of display devices, each display device can receive the target order based on a communication manner shown in FIG. 4A or FIG. 4B. After receiving the target order, each display device performs S330 and S340. For brevity of description, only a processing process of one display device (namely, the target display device) is used as an example for description in this specification.

[0095] S330: The target display device determines, from the target order based on a product type that the target display device is responsible for managing, a target product set that needs to be managed by the target display device.

[0096] In some embodiments, the product type can categorize products from a processing dimension. For example, in the catering scenario, if the target merchant is a Chinese restaurant, the product type can include types such as "hot dish", "cold dish", "soup", and "staple food"; if the target merchant is a hot pot restaurant, the product type can include types such as "soup base", "dipping sauce", "cooked food", and "raw food"; and if the target merchant is a beverage point, the product type can include types such as "cold drink", "hot drink", and "dessert".

[0097] According to a product processing dimension, the processing area of the store usually includes a plurality of ports (for example, a hot dish port and a cold dish port). Different ports are responsible for processing and cooking different types of products. In some embodiments, one display device can be disposed at one port, and the display device can be responsible for managing a processing process of a corresponding type of product. For example, with reference to the catering scenarios shown in FIG. 4A and FIG. 4B, the display device 130-1 can be disposed at the hot dish port. In this case, a product type that the display device 130-1 is responsible for managing includes "hot dish". The display device 130-2 can be disposed in the cold dish port. In this case, a product type that the display device 130-2 is responsible for managing includes "cold dish".

[0098] In some embodiments, the plurality of gateways can further share one display device. In this case, the display device can be responsible for managing product processing processes corresponding to the plurality of ports. For example, with reference to the catering scenarios shown in FIG. 4A and FIG. 4B, the display device 130-2 can be disposed between the cold dish port and a staple food port. In this case, a product type that the display device 130-2 is responsible for managing can include "cold dish" and "staple food".

[0099] In some embodiments, the target display device stores first configuration information, and the first configuration information can be used to indicate a product type that the target display device is responsible for managing. In an example, the configuration information can be recorded by using a JavaScript object notation (json) file. For example, the product type can be recorded by using a key in a key-value pair in the json file, and whether the target display device is responsible for managing the product type is recorded by using a value corresponding to the key (for example, if a value is 1, it indicates that the target display device is responsible for managing the product type, and if a value is 0, it indicates that the target display device is not responsible for managing the product type).

[0100] In some embodiments, each product name corresponds to one product type. In an example, each display device can store second configuration information. The second configuration information is used to indicate a correspondence between different product names and product types. For example, the correspondence can be stored in a form of a json file. For example, the json file includes a plurality of key-value pairs, a key in each key-value pair represents a product name, and a value represents a product type corresponding to the product name.

[0101] In some embodiments, with reference to the above-mentioned example, after receiving the target order, the target display device can first determine a type corresponding to each product based on the product name in the target order. Then, the target display device can obtain, from the target order based on the product type that the target display device is responsible for managing, a product corresponding to the product type that the target display device is responsible for managing, to obtain the target product set.

[0102] In an example, it is assumed that the target display device receives the target order shown in FIG. 5. The target display device can query the second configuration information, to obtain a product type corresponding to each product in the target order. For example, as shown in

FIG. 5, in the catering scenario, the product 1 is "scrambled eggs with tomatoes", and a product type corresponding to the product 1 is "hot dish"; the product 2 is "steamed fish", and a product type corresponding to the product 2 is "hot dish"; the product 3 is "Asian cucumber salad", and a product type corresponding to the product 3 is "cold dish"; the product 4 is "rice", and a product type corresponding to the product 4 is "staple food".

[0103] If the first configuration information indicates that the product type that the target display device is responsible for managing includes "hot dish", the target product set obtained by the target display device from the target order includes "product 1" and "product 2". If the first configuration information indicates that the product type that the target display device is responsible for managing includes "cold dish" and "staple food", the target product set obtained by the target display device from the target order includes "product 3" and "product 4".

[0104] S340: The target display device displays at least some products in the target product set on a display of the target display device based on a current operating mode, to guide a worker of the target merchant to perform a target operation on the at least some products, wherein the target display device comprises a plurality of operating modes, and different operating modes implement guidance on workers of different roles.

[0105] In some embodiments, the operating modes of the target display device include a first mode, a second mode, and a third mode. The first mode can also be referred to as a kitchen mode. In the first mode, the target display device is configured to display a to-be-processed product, to guide a processing person (for example, a cook X1 and a cook X2) of the target merchant to process the to-be-processed product. The second mode can also be referred to as a delivery mode. In the second mode, the target display device is configured to display a processed product, to guide a delivery person (for example, a server or a food runner) of the target merchant to deliver the processed product to a target location (for example, a dining table 1, a dining table 2, a dining table 3, or a dining table 4). The third mode can be referred to as a hybrid mode (or a kitchen mode+a delivery mode). In the third mode, the target display device is configured to simultaneously display a to-be-processed product and a processed product, to guide a processing person (for example, a cook X1 or a cook X2) of the target merchant to process the to-be-processed product, and guide a delivery person (for example, a server or a food runner) of the target merchant to deliver the processed product to a target location (for example, a dining table 1, a dining table 2, a dining table 3, or a dining table 4).

[0106] In some embodiments, the target display device can be configured to operate in any operating mode. For example, the target display device can switch the current operating mode of the target display device in response to that the operator performs a mode switching operation on the target display device. That is, the target display device that originally runs in the first mode can be switched to the second mode for running in response to the mode switching operation. The target display device is configured with the plurality of operating modes, and supports switching between different operating modes, so that the merchant can more flexibly use the order management system according to an actual production requirement, thereby increasing application flexibility of the order management system.

[0107] In some embodiments, the target display device can display the to-be-processed product in the target product set on the display when the current operating mode is the first mode, to guide the processing person of the target merchant to process the to-be-processed product.

[0108] In some embodiments, when the target display device needs to display the to-be-processed product in the target product set, the target display device can obtain a to-be-processed product queue currently displayed by the target display device. The to-be-processed product queue is a queue that comprises a product that the target display device is responsible for managing and whose processing is not completed in a historical order. Further, the target display device can add a product in the target product set to the to-be-processed product queue, and display an updated to-be-processed product queue on the display.

[0109] In some embodiments, the to-be-processed product queue includes at least one historical product, and each historical product corresponds to a quantity of to-be-processed products. In this case, for each current product in the target product set, the target display device can determine whether a target historical product exists in the to-be-processed product queue. The target historical product and the current product are a same product. If the target historical product exists in the to-be-processed product queue, a quantity of to-be-processed products corresponding to the target historical product in the to-be-processed product queue is increased by 1; or if the target historical product does not exist in the to-be-processed product queue, the current product is added to the to-be-processed product queue, and a quantity of to-be-processed products corresponding to the current product is set to 1.

[0110] FIG. 6 is a schematic diagram of an interaction page of a target display device in a first mode according to an embodiment of this specification.

[0111] As shown in FIG. 6, it is assumed that the product type that the target display device is responsible for managing includes "hot dish". Before receiving the target order, the to-be-processed product queue currently displayed by the target display device includes three historical products: a product 1, a product 5, and a product 6. A quantity of to-be-processed products of the product 1 is 2, and both a quantity of to-be-processed products of the product 5 and a quantity of to-be-processed products of the product 6 are 1.

[0112] As shown in FIG. 6, it is assumed that the target display device receives the target order shown in FIG. 5. The target product set obtained by the target display device from the target order includes the product 1 and the product 2. Because the to-be-processed product queue currently displayed by the target display device includes the product 1, the target display device directly changes the quantity of to-be-processed products of the product 1 in the to-be-processed product queue from 2 to 3. Because the to-be-processed product queue currently displayed by the target display device does not include the product 2, the target display device adds the product 2 to an end of the to-be-processed product queue, and sets a quantity of to-be-processed products corresponding to the product 2 to 1.

[0113] In some embodiments, the target display device can delete a first product in the target product set from the to-be-processed product queue in response to detecting that processing of the first product is completed, and display an updated to-be-processed product queue on the display. The first product can be any product in the target product set.

[0114] In an example, each product in the target product set can further include a corresponding progress label. The progress label is used to represent a product processing progress. For example, the processing progress can include one of "to-be-processed", "in-process", and "completed". That the target display device can respond to detecting that processing of the first product in the target product set is completed can be detecting that a progress label corresponding to the first product is "completed".

[0115] In some embodiments, when adding each product in the target product set to the to-be-processed product queue, the target display device can set the progress label corresponding to the product to "to-be-processed". After determining that the processing person starts to process a product (namely, the first product) in a to-be-processed product queue, the target display device can update a progress label corresponding to the product to "in-process". After determining that the processing person completes processing of the first product, the target display device can

update the progress label corresponding to the first product to "completed".

[0116] In some embodiments, the target display device can receive a progress change operation related to the first product, and determine a processing progress of the first product based on the received progress change operation. For example, the progress change operation can include: The target display device detects, based on a touchscreen, a tap operation performed on a first target area or a second target area. The first target area is used to display an icon of "Start processing" corresponding to the first product, and the second target area is used to display an icon of "Processing is completed" corresponding to the first product. When the progress change operation is a tap operation performed on the first target area, the target display device can determine that the processing progress of the first product is "in process". When the progress change operation is a tap operation performed on the second target area, the target display device can determine that the processing progress of the first product is "completed".

[0117] In some embodiments, each product in the target product set corresponds to an identification code, and the target display device can further be connected to a printing apparatus and a scanning apparatus. The target display device can scan an identification code of the first product in response to the scanning apparatus, to determine the processing progress of the first product.

[0118] For example, after the target display device determines the target product set, the printing apparatus can print an identification code corresponding to each product in the target product set or display the identification code of each product in the to-be-processed product queue. The target display device determines the processing progress of the first product in response to a quantity of times that the scanning apparatus scans the identification code corresponding to the first product. For example, when the target display device detects, for the first time, that the scanning device scans the identification code corresponding to the first product, it can be determined that the processing progress of the first product is "in process". When the target display device detects, for the second time, that the scanning device scans the identification code corresponding to the first product, it can be determined that the processing progress of the first product is "completed".

[0119] In this embodiment, the target display device determines the processing progress of the first product based on a scanning status of the identification code corresponding to the first product by the scanning apparatus, to reduce a quantity of operations performed by the processing person

on the display of the target display device, thereby reducing a probability that the display is contaminated, increasing a device life, and reducing cleaning difficulty. In addition, the scanning apparatus can be located near the processing person, so that the scanning apparatus is readily available to the processing person. In this way, the processing person does not need to walk to the target display device to touch the display, thereby simplifying an operation of the processing person, and improving processing efficiency of the processing person. Further, the identification code of the product is displayed on the target display device, without using the printing apparatus to print a paper identification code, so that the order management system can be paperless, thereby saving papers and reducing costs.

[0120] In some embodiments, after determining that the processing progress of the first product is completed, the target display device can send a processing progress message corresponding to the target order to the target POS device. The processing progress message indicates that processing of the first product is completed. After receiving the processing progress message, the POS device can display prompt information, and notify the worker to deliver the first product to the target location.

[0121] In this embodiment, the target display device obtains the processing progress of the first product, and delivers a processing completion message of the first product to the POS device, so that after processing of the first product is completed, the worker is reminded to deliver the first product to the target location, to reduce waiting time of a customer, and improve overall working efficiency.

[0122] In some embodiments, the target display device is responsible for managing more than one product type. For example, the target display device can be responsible for managing K product types. K is an integer greater than 1. In this case, the target product set comprises K product subsets in a one-to-one correspondence with the K product types.

[0123] In some embodiments, the display of the target display device can be divided into K display areas. That the target display device displays the to-be-processed product in the target product set on the display comprises: respectively displaying, in the K display areas, to-be-processed products in the K product subsets.

[0124] FIG. 7 is a schematic diagram of another interaction page of a target display device in a first mode according to an embodiment of this specification.

[0125] In some embodiments, it is assumed that K is equal to 2, and the target display device

is responsible for processing processes of two types of products (for example, "cold dish" and "staple food"). The target order shown in FIG. 5 is still used as an example. In this case, that the target display device obtains the target product set from the target order includes: a product subset corresponding to a cold dish type and a product subset corresponding to a staple food type. The product subset corresponding to the cold dish type includes "dish 3", and the product subset corresponding to the staple food type includes "dish 4".

[0126] In this case, as shown in FIG. 7, the display of the target display device can be divided into two display areas, which are a display area 710 and a display area 720. The display area 710 is configured to display a to-be-processed product (for example, the dish 3) corresponding to the cold dish type, and the display area 720 is configured to display a to-be-processed product (for example, the dish 4) corresponding to the staple food type.

[0127] It should be noted that a manner of obtaining display areas corresponding to the display through division in this embodiment of this specification is not limited. The display areas can be displayed in up/down split screen, can be displayed in left/right split screen, or can be displayed in another split screen manner.

[0128] In some embodiments, the target display device can display an acceleration flag for a second product on the display in response to receiving an acceleration instruction for the second product from the target POS device. The second product is any product in the target product set.

[0129] For example, if the consumer does not receive a processed product within a period of time after ordering, the consumer may urge the worker. In this case, the worker can send, to the target display device by using the target POS device, the acceleration instruction for a product (the second product) ordered by the consumer. After receiving the acceleration instruction for the second product, the target display device can add a highlight to a product name of the second product on the display, add a preset background image, add a preset icon around a product name, etc., to highlight the product name of the second product, so that the acceleration flag is displayed for the second product on the display. Alternatively, the target display device can further configure a speaker, and play an acceleration prompt for the second product by using the speaker.

[0130] In some embodiments, the target display device can display the processed product in the target product set on the display when the current operating mode is a second mode, to guide the delivery person of the target merchant to deliver the processed product to a target location.

[0131] In some embodiments, that the target display device displays the processed product in

the target product set on the display includes: in response to detecting that processing of a first product in the target product set is completed, obtaining a processed product queue currently displayed by the target display device, wherein the processed product queue is a queue that the target display device is responsible for managing and whose processing is completed in a historical order; and adding the first product to the processed product queue, and displaying an updated processed product queue on the display.

[0132] In some embodiments, a manner in which the target display device responds to detecting completion of processing of the first product in the target product set is the same as that in the above-mentioned example, and details are not described herein again.

[0133] FIG. 8 is a schematic diagram of an interaction page of a target display device in a second mode according to an embodiment of this specification.

[0134] As shown in FIG. 8, it is assumed that the target display device is responsible for a processing process of a product of a hot dish type. Currently processed hot dish products include the product 1, the product 5, and the product 6. In this case, the target display device can display a name of the processed product on the display. In some embodiments, the target display device can further display, on the display, a quantity and a target location that correspond to each processed product. For example, a quantity of products 1 is 2, one needs to be delivered to the dining table 1 and the other needs to be delivered to the dining table 4; a quantity of products 5 is one, and the product 5 needs to be delivered to the dining table 2; and a quantity of products 6 is one, and the product 6 needs to be delivered to the dining table 3.

[0135] In some embodiments, if the target display device detects that processing of the first product is completed, the target display device can add the first product to the processed product queue, and display an updated processed product queue on the display. It should be noted that a manner in which the target display device updates the processed product queue is similar to a manner in which the to-be-processed product queue is updated. Details are not described in this specification.

[0136] In some embodiments, the target display device can further detect whether a product in the processed product queue is delivered, update the processed product queue after detecting that the product has been delivered, and remove the delivered product from the processed product queue. In addition, the target display device can further add the delivered product to the delivered product queue, and display the delivered product queue on the display.

[0137] For example, when receiving a product delivery completion message, the target display device can determine that completion of delivery of a product corresponding to the product delivery completion message is detected. The product delivery completed message can be sent by the worker (for example, a food runner) by using any POS device or any display device.

[0138] In an example, when displaying the delivered product queue on the display, the target display device can display only recently received several delivered products. For example, the target display device can display recently delivered three products.

[0139] FIG. 9 is a schematic diagram of another interaction page of a target display device in a second mode according to an embodiment of this specification.

[0140] For example, as shown in FIG. 9, after detecting that the product 1 is delivered to the dining table 1, the target display device can remove the product 1 corresponding to the table 1 from the processed product queue, that is, change a quantity of products 1 in the updated processed product queue to 1. The target location is the dining table 4. Then, the target display device can add the product 1 to the delivered product queue, and display "The product 1 of the dining table 1 is delivered" at the bottom of a screen through scrolling, by using a banner, etc.

[0141] In this embodiment, after detecting that the product is delivered, the target display device updates the processed product queue in a timely manner, and displays the delivered product. When there are a plurality of products, the same product can be prevented from being repeatedly delivered to the same target location, to reduce a probability of an error during product delivery, and improve product delivery efficiency.

[0142] In some embodiments, when the current operating mode is a third mode, the target display device can display a to-be-processed product in the target product set in a first display area of the display, to guide a processing person of the target merchant to process the to-be-processed product; and display a processed product in the target product set in a second display area of the display, to guide a delivery person of the target merchant to deliver the processed product to a target location.

[0143] FIG. 10 is a schematic diagram of displaying a to-be-processed product and a processed product in a third mode by a target display device according to an embodiment of this specification. As shown in FIG. 10, the display of the target display device includes a first display area 1010 and a second display area 1020. The first display area 1010 is configured to display the to-be-processed product queue, and the second display area 1020 is configured to display the processed product

queue. As shown in FIG. 10, the to-be-processed product queue displayed in the first display area 1010 is similar to that in the example in FIG. 6, and the to-be-processed product queue displayed in the second display area 1020 is similar to that in the example in FIG. 8. Details are not described herein again. It should be noted that this specification sets no limitation on a manner of obtaining the first display area 1010 and the second display area 1020 through division. The display areas can be displayed in up/down split screen, can be displayed in left/right split screen, or can be displayed in another split screen manner.

[0144] In this embodiment, the display of the display device separately displays the to-be-processed product queue, or separately displays the processed product queue, or simultaneously displays the to-be-processed product queue and the processed product queue, to provide a more flexible configuration manner for the display device, so that the display device can have more application scenarios, thereby expanding an application scenario of the order management system.

[0145] In some embodiments, after determining that the processing progress of the first product is "completed", the target display device can further synchronize the processing progress of the first product to another display device.

[0146] If the operating mode of the target display device is the second mode or the third mode, when detecting a processed first product from another device, the target display device can add the first product of the another device to the processed product queue of the target display device, and display an updated processed product queue on the display.

[0147] For example, the product type that the display device 130-1 is responsible for managing includes "hot dish"; and the product type that the display device 130-2 is responsible for managing includes "cold dish". When the display device 130-1 serves as the target display device, if it is detected that a processing progress of the product 1 (hot dish) is "completed", the processing progress of the product 1 can be synchronized to the display device 130-2. If the operating mode of the display device 130-2 is the third mode, the display device 130-2 can add the product 1 to the processed product queue, and display the product 1 on the display.

[0148] In this embodiment, a processed product is synchronized between display devices, so that the display device can display a processed product in another display device, so that more application scenarios are expanded, and an application scenario of the order management system is further expanded.

[0149] In conclusion, according to the order processing method, the electronic device, the

storage medium, and the order management system provided in this specification, after obtaining the target order, the POS device sends the target order to the display device, and the display device determines, from the target order based on the product type that the display device is responsible for managing, the target product set that needs to be managed by the display device. Further, the display device displays at least some products in the target product set on the display based on the current operating mode, to guide the worker of the target merchant. In the above-mentioned solution, the service device does not need to execute logic of splitting orders, but allocates the logic of splitting order to each display device. Each display device selects a target product set from the target order based on a product type that each display device is responsible for managing, and displays the target product set, so that complexity of the logic of splitting orders are greatly reduced, thereby ensuring that the order management system can run more stably and reducing a probability of a problem. In the above-mentioned solution, the display device directly obtains the target order from the POS device without a need to communicate with the service device, so that the display device and the POS device can communicate based on the local area network. In this way, working of the display device 130 no longer depends on stability of the global area network, to avoid a problem of a sub-order loss or a receiving delay due to instability of an external network, thereby further improving cooking efficiency. Further, in different operating modes, the display device 130 can guide workers of different roles to improve efficiency of the workers of different roles, thereby improving overall order processing efficiency of the merchant.

[0150] Another aspect of this specification provides a computer-readable non-transitory storage medium, storing at least one instruction set, to perform order processing. When the at least one instruction set is executed by a processor, the at least one instruction set instructs the processor to implement the steps the order processing method in this specification. In some possible implementations, aspects of this specification can further be implemented in a form of a program product, including program code. When the program product runs on an electronic device 200, the program code is used to enable the electronic device 200 to perform the steps the order processing method described in this specification. The program product configured to implement the above-mentioned method can be a portable compact disc read-only memory (CD-ROM) that includes program code, and can run on the electronic device 200. However, the program product in this specification is not limited thereto. In this specification, a readable storage medium can be any tangible medium that includes or stores a program, and the program can be used by or in

combination with an instruction execution system. The program product can be any combination of one or more readable media. The readable medium can be a readable signal medium or a readable storage medium. The readable storage medium can be, for example, an electrical system, apparatus, or device, a magnetic system, apparatus, or device, an optical system, apparatus, or device, an electromagnetic system, apparatus, or device, an infrared system, apparatus, or device, or a semiconductor system, apparatus, or device, or any combination thereof. More specific examples of the readable storage medium include: an electrical connection including one or more conducting wires, a portable disk, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or flash memory), an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage component, a magnetic storage component, or any proper combination thereof. The computer-readable storage medium can include a data signal propagated in a baseband or as part of a carrier, and carries readable program code. The propagated data signal can be in a plurality of forms, and includes but is not limited to an electromagnetic signal, an optical signal, or any proper combination thereof. The readable storage medium can further be any readable medium other than the readable storage medium, and the readable medium can be used to send, propagate, or transmit a program used by or in combination with an instruction execution system, apparatus, or component. The program code included in the readable storage medium can be transmitted in any proper medium, including but not limited to a wireless medium, a wired medium, optical cable, an RF medium, or any proper combination thereof. Program code for performing an operation of this specification can be written in any combination of one or more program design languages. The program design language includes an object-oriented program design language, for example, Java or C++, and further includes a conventional procedural program design language, for example, "C" language, or a similar program design language. The program code can be completely executed on the electronic device 200, partially executed on the electronic device 200, executed as an independent software package, partially executed on the electronic device 200 and partially executed on a remote computing device, or completely executed on a remote computing device.

[0151] Specific embodiments of this specification are described above. Other embodiments fall within the scope of the appended claims. In some cases, the actions or steps described in the claims can be performed in an order different from that in the embodiments, and the desired results can still be achieved. In addition, the process depicted in the accompanying drawings does not

necessarily need a particular order or consecutive order to achieve the desired results. In some implementations, multitasking and parallel processing are possible or may be advantageous.

[0152] In conclusion, after reading the detailed disclosure, a person skilled in the art can understand that the detailed disclosure can be presented only in an example manner, and can impose no limitation. Although it is not explicitly stated here, a person skilled in the art can understand that the requirements of this specification include various proper changes, improvements, and modifications to the embodiments. These changes, improvements, and modifications are intended to be presented in this specification, and fall within the spirit and scope of the example embodiments of this specification.

[0153] In addition, some terms in this specification are used to describe the embodiments of this specification. For example, "one embodiment", "an embodiment", and/or "some embodiments" mean that particular features, structures, or characteristics described with reference to the embodiments can be included in at least one embodiment of this specification. Therefore, it can be emphasized and understood that two or more of "an embodiment", "one embodiment", or "alternative embodiments" referred in parts of this specification do not necessarily indicate the same embodiment. In addition, particular features, structures, or characteristics can be properly combined in one or more embodiments of this specification.

[0154] It should be understood that in the above-mentioned descriptions of the embodiments of this specification, to help understand a feature, for the purpose of simplifying this specification, various features are combined in a single embodiment, accompanying drawing, or description thereof in this specification. However, this does not mean that the combination of these features is necessary. It is entirely possible for a person skilled in the art to mark some devices and understand the devices as separate embodiments when reading this specification. In other words, the embodiments in this specification can also be understood as an integration of a plurality of secondary embodiments. Content of each secondary embodiment is also true when features are less than all features in one of the above-mentioned disclosed embodiments.

[0155] Each patent, patent application, publication of a patent application, and other materials, for example, articles, books, instructions, publications, documents, and products, that are cited in this specification and that are other than any document that is inconsistent or conflict with this document or that imposes limiting impact on the widest scope of the claims can be incorporated herein by reference and used for all purposes now or later associated with this document. In

addition, the term in this document shall prevail when there is any inconsistency or conflict between the description, definition and/or use of a related term in any material and the description, definition and/or use of a related term in this document.

[0156] Finally, it should be understood that the principles of the implementation solutions of this specification are described in the implementation solutions of the application disclosed in this specification. Other modified embodiments also fall within the scope of this specification. Therefore, the embodiments disclosed in this specification are merely examples and not limitations. A person skilled in the art can use an alternative configuration according to the embodiments of this specification to implement the application in this specification. Therefore, the embodiments of this specification are not limited to the embodiments accurately described in the application.

CLAIMS

What is claimed is:

1. An order processing method, applied to an order management system of a target merchant, wherein the order management system comprises at least one POS device and at least one display device, different display devices are responsible for managing processing processes of different types of products, and the method is performed by any target display device in the at least one display device and comprises:

receiving a target order from a target POS device, wherein the target order comprises at least one to-be-processed product, and the target POS device is any one of the at least one POS device;

determining, from the target order based on a product type that the target display device is responsible for managing, a target product set that needs to be managed by the target display device; and

displaying at least some products in the target product set on a display of the target display device based on a current operating mode of the target display device, to guide a worker of the target merchant to perform a target operation on the at least some products, wherein the target display device comprises a plurality of operating modes, and different operating modes implement guidance on workers of different roles.

2. The method according to claim 1, wherein the displaying at least some products in the target product set on a display of the target display device based on a current operating mode of the target display device, to guide a worker of the target merchant to perform a target operation on the at least some products comprises:

displaying a to-be-processed product in the target product set on the display when the current operating mode is a first mode, to guide a processing person of the target merchant to process the to-be-processed product.

3. The method according to claim 2, wherein the displaying a to-be-processed product in the target product set on the display comprises:

obtaining a to-be-processed product queue currently displayed by the target display device, wherein the to-be-processed product queue is a queue that comprises a product that the target display device is responsible for managing and whose processing is not completed in a historical order; and

adding a product in the target product set to the to-be-processed product queue, and displaying an updated to-be-processed product queue on the display.

4. The method according to claim 3, wherein the to-be-processed product queue comprises at least one historical product, each historical product corresponds to a quantity of to-be-processed products, and the adding a product in the target product set to the to-be-processed product queue comprises:

for each current product in the target product set, determining whether a target historical product exists in the to-be-processed product queue, wherein the target historical product and the current product are a same product; and

if the target historical product exists in the to-be-processed product queue, increasing a quantity of to-be-processed products corresponding to the target historical product in the to-be-processed product queue by 1; or

if the target historical product does not exist in the to-be-processed product queue, adding the current product to the to-be-processed product queue, and setting a quantity of to-be-processed products corresponding to the current product to 1.

5. The method according to claim 3, wherein the method further comprises:

deleting a first product in the target product set from the to-be-processed product queue in response to detecting that processing of the first product is completed, and displaying an updated to-be-processed product queue on the display.

6. The method according to claim 2, wherein the target display device is responsible for managing K product types, and K is an integer greater than 1;

the target product set comprises K product subsets in a one-to-one correspondence with the K product types; and

the display is divided into K display areas, and the displaying a to-be-processed product in the target product set on the display comprises: respectively displaying, in the K display areas, to-be-processed products in the K product subsets.

7. The method according to claim 2, wherein the method further comprises:

displaying an acceleration flag for a second product on the display in response to receiving an acceleration instruction for the second product from the target POS device, wherein the second product is any product in the target product set.

8. The method according to claim 1, wherein the displaying at least some products in the

target product set on a display of the target display device based on a current operating mode of the target display device, to guide a worker of the target merchant to perform a target operation on the at least some products comprises:

displaying a processed product in the target product set on the display when the current operating mode is a second mode, to guide a delivery person of the target merchant to deliver the processed product to a target location.

9. The method according to claim 8, wherein the displaying a processed product in the target product set on the display comprises:

in response to detecting that processing of a first product in the target product set is completed, obtaining a processed product queue currently displayed by the target display device, wherein the processed product queue is a queue that the target display device is responsible for managing and whose processing is completed in a historical order; and

adding the first product to the processed product queue, and displaying an updated processed product queue on the display.

10. The method according to claim 1, wherein the displaying at least some products in the target product set on a display of the target display device based on a current operating mode of the target display device, to guide a worker of the target merchant to perform a target operation on the at least some products comprises:

when the current operating mode is a third mode,

displaying a to-be-processed product in the target product set in a first display area of the display, to guide a processing person of the target merchant to process the to-be-processed product; and

displaying a processed product in the target product set in a second display area of the display, to guide a delivery person of the target merchant to deliver the processed product to a target location.

11. The method according to claim 1, wherein the method further comprises:

switching the current operating mode of the target display device in response to that an operator performs a mode switching operation on the target display device.

12. The method according to claim 1, wherein each product in the target product set corresponds to an identification code, and the method further comprises:

in response to that a scanning device scans the identification code of a first product,

determining that a processing progress of the first product is completed, wherein the first product is any product in the target product set; and

sending a processing progress message corresponding to the target order to the target POS device, wherein the processing progress message indicates that processing of the first product is completed.

13. The method according to claim 1, wherein the at least one display device comprises one primary display device and at least one secondary display device;

when the target display device is any one of the at least one secondary display device, the receiving a target order from a target POS device comprises: receiving the target order from the primary display device, wherein the target order is received by the primary display device from the target display device and then forwarded to the target display device; and

when the target display device is the primary display device, the receiving a target order from a target POS device comprises: receiving the target order from the target POS device.

14. The method according to claim 1, wherein the at least one POS device and at least one display device are connected over a local area network; and

the receiving a target order from a target POS device comprises: receiving the target order from the target POS device over the local area network.

15. An electronic device, applied to an order management system, wherein the order management system comprises at least one POS device and at least one display device, and the electronic device serves as the display device comprises:

at least one storage medium, storing at least one instruction set, to manage order data; and

at least one processor, communicatively connected to the at least one storage medium, wherein when the electronic device runs, the at least one processor reads the at least one instruction set, and performs the method according to any one of claims 1 to 14 based on an indication of the at least one instruction set.

16. A computer-readable non-transitory storage medium, wherein the computer-readable non-volatile storage medium stores at least one instruction set, and when the at least one instruction set is executed by at least one processor, the method according to any one of claims 1 to 14 is implemented.

17. An order management system, configured to provide an order management service to a target merchant, wherein the system comprises at least one POS device and at least one display

device;

the at least one POS device is separately configured to: obtain a target order, and send the target order to the at least one display device, wherein the target order comprises at least one to-be-processed product; and

each of the at least one display device is configured to:

determine, from the target order based on a product type that the display device is responsible for managing, a target product set that needs to be managed by the display device; and

display at least some products in the target product set on a display of the display device based on a current operating mode of the display device, to guide a worker of the target merchant to perform a target operation on the at least some products, wherein the display device comprises a plurality of operating modes, and different operating modes implement guidance on workers of different roles.

18. The system according to claim 17, wherein each of the at least one display device is specifically configured to perform at least one of the following:

displaying a to-be-processed product in the target product set on the display when the current operating mode is a first mode, to guide a processing person of the target merchant to process the to-be-processed product;

displaying a processed product in the target product set on the display when the current operating mode is a second mode, to guide a delivery person of the target merchant to deliver the processed product to a target location; and

when the current operating mode is a third mode, displaying a to-be-processed product in the target product set in a first display area of the display, to guide a processing person of the target merchant to process the to-be-processed product; and displaying a processed product in the target product set in a second display area of the display, to guide a delivery person of the target merchant to deliver the processed product to a target location.

19. The system according to claim 17, wherein each of the at least one display device is further configured to switch the current operating mode of the display device in response to that an operator performs a mode switching operation on the display device.

20. The system according to claim 17, wherein the at least one display device is located in a reception area of the target merchant, the at least one display device is located in a processing area of the target merchant, and the at least one display device is connected to the at least one POS

device over a local area network.