

DESCRIPTION

TITLE OF INVENTION: METHOD FOR PROVIDING DIRECT ORDER, AND
SERVER AND WIRELESS TERMINAL FOR PERFORMING SAME

Technical Field

5 The present disclosure relates to a method and apparatus for providing a direct order, and more specifically, to technology that, when a direct order is received, efficiently provides the direct order to a wireless terminal of a rider by providing the direct order to a wireless terminal to which a direct order is not assigned.

Background Art

10 As the demand for delivery services rapidly increases recently, technologies for efficiently processing delivery orders have been required. Since the number of riders is limited, one rider may process multiple delivery orders simultaneously at the time when delivery orders suddenly increase.

15 In this case, the average delivery time for all the delivery orders may decrease, but the service quality of some delivery orders may be degraded. For example, when the times delivery orders assigned to one rider occur are similar, the service quality of delivery orders of lower priority may be degraded while the rider processes the delivery orders in a random order.

20 To prevent this, recently, a service that provides a "direct order" in which a rider processes one delivery order rather than multiple delivery orders at a time has emerged. However, in order for such a delivery service to be completely implemented, the number of riders may have to increase as the number of users of delivery services increases. That is, as the number of users increases, it may be almost impossible to process all delivery orders as direct orders.

25 Thus, technology capable of managing delivery orders to allow processing multiple delivery orders at a time and processing direct orders is required.

Disclosure of the Invention

Technical Goals

30 The present disclosure provides a method of efficiently processing a direct order by preventing other delivery orders from being assigned to a wireless terminal to which the direct order is assigned, and a server and a wireless terminal performing the method.

Technical Solutions

A method of providing a direct order performed by a server according to an embodiment includes identifying delivery orders including information on a departure location and a delivery location, extracting, from among wireless terminals registered in the server, wireless terminals to which a direct order is not assigned, determining a wireless terminal to receive a direct order among the delivery orders from among the extracted wireless terminals, based on terminal positions of the extracted wireless terminals, and a departure location and a delivery location of the direct order, and providing the direct order to the determined wireless terminal.

The determining of the wireless terminal to receive the direct order may include determining the wireless terminal to receive the direct order, based on a distance between the departure location and the terminal positions of the extracted wireless terminals.

The determining of the wireless terminal to receive the direct order may include determining the wireless terminal to receive the direct order, based on a number of delivery orders assigned to the extracted wireless terminals and a limit of delivery orders of each of the extracted wireless terminals.

A method of providing a direct order performed by a server according to another embodiment includes identifying delivery orders including information on a departure location and a delivery location, transmitting a list including the delivery orders to wireless terminals registered in the server, receiving, from one wireless terminal among the wireless terminals, a direct order included in the list and information on the wireless terminal, and providing the direct order to the wireless terminal.

The information on the wireless terminal may include i) a terminal position of the wireless terminal, ii) a number of delivery orders assigned to the wireless terminal, iii) a terminal identification (ID) of the wireless terminal, and iv) a limit of delivery orders of the wireless terminal.

The providing of the direct order may include providing the direct order to the wireless terminal when the number of delivery orders assigned to the wireless terminal is equal to or less than a reference number.

A method of providing a direct order performed by a wireless terminal of a rider according to an embodiment includes transmitting information on the wireless terminal to a server, receiving a direct order including information on a departure location and a delivery location from the server, displaying the departure location and the delivery location of the

direct order on a display of the wireless terminal, and locking a delivery list of the wireless terminal until the direct order is processed.

The information on the wireless terminal may include a terminal ID of the wireless terminal and a terminal position of the wireless terminal.

5 The locking of the delivery list may include, when at least one general order is pre-assigned to the wireless terminal, locking the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

10 A method of providing a direct order performed by a wireless terminal of a rider according to an embodiment includes receiving a list including delivery orders including information on a departure location and a delivery location from a server, displaying the list on a display of the wireless terminal, transmitting a delivery order that is a direct order among the delivery orders included in the list, and a terminal position of the wireless terminal to the server, and locking a delivery list of the wireless terminal until the direct order is processed.

15 The locking of the delivery list may include, when at least one general order is pre-assigned to the wireless terminal, locking the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

20 A server for performing a method of providing a direct order according to an embodiment includes a processor configured to identify delivery orders including information on a departure location and a delivery location, extract, from among wireless terminals registered in the server, wireless terminals to which a direct order is not assigned, determine a wireless terminal to receive a direct order among the delivery orders from among the extracted wireless terminals, based on terminal positions of the extracted wireless terminals, and a departure location and a delivery location of the direct order, and provide
25 the direct order to the determined wireless terminal.

The processor may be configured to determine the wireless terminal to receive the direct order based on a distance between the departure location and the terminal positions of the extracted wireless terminals.

30 The processor may be configured to determine the wireless terminal to receive the direct order, based on a number of delivery orders assigned to the extracted wireless terminals and a limit of delivery orders of each of the extracted wireless terminals.

A server for performing a method of providing a direct order according to an embodiment includes a processor configured to identify delivery orders including

information on a departure location and a delivery location, transmit a list including the delivery orders to wireless terminals registered in the server, receive, from one wireless terminal among the wireless terminals, a direct order included in the list and information on the wireless terminal, and provide the direct order to the wireless terminal.

5 The information on the wireless terminal may include i) a terminal position of the wireless terminal, ii) a number of delivery orders assigned to the wireless terminal, iii) a terminal ID of the wireless terminal, and iv) a limit of delivery orders of the wireless terminal.

 The processor may be configured to provide the direct order to the wireless terminal when the number of delivery orders assigned to the wireless terminal is equal to or less than
10 a reference number.

 A wireless terminal of a rider for performing a method of providing a direct order according to an embodiment includes a processor configured to transmit information on the wireless terminal to a server, receive a direct order including information on a departure location and a delivery location from the server, display the departure location and the
15 delivery location of the direct order on a display of the wireless terminal, and lock a delivery list of the wireless terminal until the direct order is processed.

 The information on the wireless terminal may include a terminal ID of the wireless terminal and a terminal position of the wireless terminal.

 The processor may be configured to, when at least one general order is pre-assigned
20 to the wireless terminal, lock the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

 A wireless terminal of a rider for performing a method of providing a direct order according to an embodiment includes a processor configured to receive a list including delivery orders including information on a departure location and a delivery location from a
25 server, display the list on a display of the wireless terminal, transmit a delivery order that is a direct order among the delivery orders included in the list, and a terminal position of the wireless terminal to the server, and lock a delivery list of the wireless terminal until the direct order is processed.

 The processor may be configured to, when at least one general order is pre-assigned
30 to the wireless terminal, lock the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

Effects

 According to an embodiment of the present disclosure, a direct order may be

efficiently processed by preventing other delivery orders from being assigned to a wireless terminal to which the direct order is assigned.

Brief Description of Drawings

FIG. 1 is a diagram illustrating a server and wireless terminals according to an embodiment.

FIGS. 2A and 2B are diagrams illustrating displays of a wireless terminal in the case that the wireless terminal, to which general orders are assigned, receives a direct order according to an embodiment.

FIGS. 3A and 3B are diagrams illustrating displays of a wireless terminal in the case that the wireless terminal, to which a general order is not assigned, receives a direct order according to an embodiment.

FIG. 4 is a flowchart illustrating a method of providing a direct order by determining a wireless terminal that is capable of performing the direct order according to an embodiment.

FIG. 5 is a flowchart illustrating a method of providing a direct order when the direct order is assigned by a rider, according to an embodiment.

Best Mode for Carrying Out the Invention

Hereinafter, examples will be described in detail with reference to the accompanying drawings. However, various modifications may be made to the examples and thus the scope of rights of a patent application is not limited by the examples. It should be understood that all modifications, equivalents, and alternatives are also covered within the scope of the claims.

The terms used in the examples are merely meant for descriptive purposes and should not be construed as limiting. As used herein, the singular forms "a," "an," and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. As used herein, the terms "include," "comprise," and "have" specify the presence of stated features, numbers, operations, elements, components, and/or combinations thereof, but do not preclude the presence or addition of one or more other features, numbers, operations, elements, components, and/or combinations thereof.

Unless otherwise defined, all terms used herein including technical or scientific terms have the same meanings as those generally understood by one of ordinary skill in the art. Terms, such as those defined in commonly used dictionaries, should be construed to have meanings matching with contextual meanings in the relevant art and the present disclosure, and are not to be construed as an ideal or excessively formal meaning unless

otherwise defined herein.

In addition, when describing the examples with reference to the accompanying drawings, like reference numerals refer to like components and a repeated description related thereto will be omitted. When describing the examples, if it is determined that a detailed description of a related known art may unnecessarily obscure the gist of the examples, the detailed description will be omitted.

FIG. 1 is a diagram illustrating a server and wireless terminals according to an embodiment.

The present disclosure relates to a method of providing a direct order 105 performed by a server 101 or wireless terminals 102 to 104 to process the direct order 105 as efficiently as general orders 106 and 107. Each of the server 101 and the wireless terminals 102 to 104 may include a processor, and the processor included in the server 101 or the wireless terminals 102 to 104 may perform the method of providing the direct order 105 of the present disclosure.

The server 101 and the wireless terminals 102 to 104 may refer to an apparatus that includes a processor and is capable of performing wired or wireless communication, such as a smartphone, a personal computer (PC), a tablet, and the like. Referring to FIG. 1, the server 101 may receive the direct order 105 or the general orders 106 and 107 and provide the received orders to the wireless terminals 102 to 104.

Here, the direct order 105 and the general orders 106 and 107 are all types of delivery orders 105 to 107. The delivery orders 105 to 107 may include information on a departure location and a delivery location. For example, the departure location may be a location of a store to pick up a shipment and the delivery location may be a location of a place to receive a shipment.

When the delivery orders 105 to 107 occur, it may be determined whether the delivery order is the direct order 105 or the general orders 106 and 107. For example, when a user requesting the delivery orders 105 to 107 has paid an additional fee, or when a user requesting the delivery orders 105 to 107 has signed up for a membership system to use the direct order 105, the delivery orders 105 to 107 occurred by the user may be determined as the direct order 105.

In addition, the general orders 106 and 107 may be the delivery orders 105 to 107 other than the direct order 105 among the delivery orders 105 to 107, and a rider may take and process at least one of the general orders 106 and 107. That is, a plurality of general

orders 106 and 107 may be assigned to the wireless terminals 102 to 104 of the rider.

However, when one direct order 105 is assigned to the wireless terminals 102 to 104 of the rider, the server 101 or the wireless terminals 102 to 104 may perform the method of providing a direct order of the present disclosure so that new delivery orders 105 to 107 may not be assigned to the wireless terminals 102 to 104 until the assigned direct order 105 is processed.

In addition, according to the present disclosure, a new direct order 105 may also be assigned to the wireless terminals 102 to 104 to which the general orders 106 and 107 are assigned. However, when the new direct order 105 is assigned to the wireless terminals 102 to 104 to which the general orders 106 and 107 are assigned, the server 101 or the wireless terminals 102 to 104 may process the delivery orders 105 to 107 so that the new delivery orders 105 to 107 may not be assigned to the wireless terminals 102 to 104 until all of the assigned delivery orders 105 to 107 are processed.

Specifically, to provide the direct order 105, the server 101 may provide the delivery orders 105 to 107 to the wireless terminals 102 to 104 considering the number or type of the delivery orders 105 to 107 assigned to the wireless terminals 102 to 104. For example, the server 101 may provide the direct order 105 to the wireless terminals 102 to 104 to which the direct order 105 is not assigned. The wireless terminals 102 to 104 may, when the direct order 105 is assigned, lock a delivery list so that additional delivery orders 105 to 107 may not be assigned.

Through this, the present disclosure may allow the general orders 106 and 107 and the direct order 105 to be efficiently provided to the wireless terminals 102 to 104 of a rider.

In the present disclosure, a rider may refer to a person who processes the delivery orders 105 to 107, and a rider may be contracted to process delivery tasks occurring at stores included in a branch to which the rider belongs. A rider may select and process one of the delivery tasks provided by the server 101 through the wireless terminals 102 to 104 and may process a delivery task automatically assigned by the server 101.

Referring to FIG. 1, the wireless terminals 102 to 104 may be the wireless terminals 102 to 104 of different riders, and the general orders 106 and 107 may include departure locations or delivery locations different from each other.

According to an embodiment of the present disclosure, the server 101 may provide the delivery orders 105 to 107 to the wireless terminals 102 to 104 based on a terminal position of the wireless terminals 102 to 104, the number and type of delivery orders 105 to

107 that are assigned to the wireless terminals 102 to 104, the departure location and delivery location of the delivery orders 105 to 107, and the like.

According to another embodiment, the server 101 may provide a list including the delivery orders 105 to 107 to each of the wireless terminals 102 to 104 and may provide or
5 assign the delivery orders 105 to 107 that riders have selected from the list to the wireless terminals 102 to 104.

FIGS. 2A and 2B are diagrams illustrating displays of a wireless terminal in the case that the wireless terminal, to which general orders are assigned, receives a direct order according to an embodiment.

10 FIG. 2A is a diagram illustrating a display of the wireless terminal to which a plurality of general orders 202 to 204 including information on different departure locations and delivery locations are assigned. FIG. 2B is a diagram illustrating a display of the wireless terminal when a direct order 205 is additionally assigned from a server to the wireless terminal to which the plurality of general orders 202 to 204 are assigned.

15 Referring to FIG. 2A, the wireless terminal may display a delivery list 201 of assigned delivery orders on the display. The assigned delivery orders may be delivery orders that are automatically assigned from the server or that a rider selected from the list of delivery orders. In addition, when the assigned delivery order is processed, the delivery order may be deleted from the delivery list 201.

20 The wireless terminal may display the type of assigned delivery orders, the departure location and delivery location, the time the delivery order occurred, priority, and the like through the display. For example, in each delivery order of FIG. 2A, #1, #2, and #3 may represent priority. The wireless terminal may change the priority of the delivery orders according to dragging by the rider.

25 Referring to FIG. 2B, when the direct order 205 is assigned to the wireless terminal, the direct order 205 may be set to the highest priority. The rider may need to process the direct order 205 before other general orders 202 to 204. Thus, in the present disclosure, when the direct order 205 is provided along with the general orders 202 to 204, the server or the wireless terminal may perform the method of providing a direct order of the present
30 disclosure so that the direct order 205 may be processed first.

In the case of FIG. 2B, the server may automatically provide the direct order 205 to the wireless terminal based on terminal positions of wireless terminals, the number and type of delivery orders that are assigned to the wireless terminals, the departure location and

delivery location of the direct order 205, and the like.

When the direct order 205 is assigned to the wireless terminal, other general orders 202 to 204 may not be processed until the rider processes the direct order 205. In addition, when the direct order 205 is assigned to the wireless terminal, a new delivery order may not
 5 be assigned until all delivery orders assigned to the wireless terminal are processed.

Specifically, the server may, based on the type and number of delivery orders assigned to wireless terminals, provide a delivery order or a list of delivery orders to the wireless terminals having "0" assigned delivery order or having the general orders 202 to 204 as the type of assigned delivery orders.

10 The wireless terminal to which the direct order 205 is assigned may lock the delivery list 201. Specifically, the wireless terminal to which the direct order 205 is assigned may lock the delivery list 201 so that a new delivery order may not be added until all assigned delivery orders are processed and deleted.

When the delivery list 201 is locked, a new delivery order may not be assigned to
 15 the wireless terminal until the lock is released. In addition, when all delivery orders on the delivery list 201 are processed, the wireless terminal may release the lock of the delivery list 201.

FIGS. 3A and 3B are diagrams illustrating displays of a wireless terminal in the case that the wireless terminal, to which a general order is not assigned, receives a direct order
 20 according to an embodiment.

FIG. 3A is a diagram illustrating a display of the wireless terminal when a delivery order is not assigned to the wireless terminal. FIG. 3B is a diagram illustrating a display of the wireless terminal when a direct order 302 is assigned to the wireless terminal to which a delivery order is not assigned.

25 Referring to FIG. 3A, a delivery list 301 displayed on the display of the wireless terminal may not display a separate delivery order. Referring to FIG. 3B, a direct order 302 displayed on the display of the wireless terminal may be i) automatically assigned from a server or ii) assigned according to a rider's selection.

When the direct order 302 is assigned to the wireless terminal as in FIG. 3B, a new
 30 delivery order may not be assigned until the direct order 302 assigned to the wireless terminal is processed. To this end, as described above, the server may, based on the type and number of delivery orders assigned to wireless terminals, provide a delivery order or a list of delivery orders to the wireless terminals having "0" assigned delivery order or having general orders

as the type of assigned delivery orders.

In addition, the wireless terminal may lock the delivery list 301 so that a new delivery order may not be added until all assigned delivery orders are processed and deleted. When the delivery list 301 is locked, a new delivery order may not be assigned to the wireless terminal until the lock is released. In addition, when the direct order 302 on the delivery list 301 is processed, the wireless terminal may release the lock of the delivery list 301.

FIG. 4 is a flowchart illustrating a method of providing a direct order by determining a wireless terminal that is capable of performing the direct order according to an embodiment.

In operation 401, a server may receive delivery orders from a store. Alternatively, the server may receive delivery orders from another server that manages delivery orders. Each of the received delivery orders may be one of a general order and a direct order. In operation 402, in order to provide a direct order, the server may extract wireless terminals to which a direct order is not assigned from among wireless terminals registered in the server.

Specifically, wireless terminals of contracted riders may be registered in the server in advance. For example, information on a wireless terminal and a rider such as a means of transportation used by the rider, a terminal identification (ID) of the wireless terminal, and the like may be registered in the database of the server in advance.

In addition, information on a delivery order such as the time a delivery order occurred, a departure location and delivery location, and the like, and the number and type of delivery orders that are assigned to the wireless terminal and whether the delivery order is processed may be stored in the database. Thus, the server may extract wireless terminals to which a direct order is not assigned from among the wireless terminals registered in the server at the point of providing the delivery order.

To this end, the wireless terminal may transmit information on the wireless terminal to the server before operation 402. The information on the wireless terminal may include the means of transportation used by the rider, the terminal ID and terminal position of the wireless terminal, and the like. The server may store the information on the wireless terminal in the database and may store the number of assigned delivery orders that are assigned to the wireless terminal, the type of delivery orders, a limit of delivery orders, and the like in the database by mapping the above to the wireless terminal.

In operation 403, the server may determine a wireless terminal to receive a direct order among delivery orders from among the extracted wireless terminals, based on terminal positions of the extracted wireless terminals, and the departure location and the delivery

location of the direct order.

For example, the server may determine a wireless terminal to receive the direct order based on the distance between the departure location of the direct order and the terminal positions of the extracted wireless terminals. For example, the server may determine a wireless terminal having the shortest distance between the terminal position and the departure location of the direct order from among the extracted wireless terminals as a wireless terminal to receive the direct order.

Alternatively, the server may determine a wireless terminal having the shortest required time for a route to the departure location of the direct order from among the extracted wireless terminals as a wireless terminal to receive the direct order. Here, the required time for the route may be determined according to the means of transportation of the rider and traffic conditions.

In another example, the server may determine a wireless terminal to receive the direct order based on the number of delivery orders assigned to the extracted wireless terminals and a limit of delivery orders of each of the extracted wireless terminals.

Here, the limit of delivery orders may mean the maximum number of delivery orders that may be assigned to each wireless terminal. The limit of delivery orders may be determined according to the skill of the rider carrying the wireless terminal. For example, since a rider with more experience may process multiple delivery orders more efficiently, the number of delivery orders that may be assigned may also increase.

In addition, the limit of delivery orders may be determined based on the number of delivery orders occurring in a branch and the number of riders in that branch. For example, when the number of delivery orders is greater than the number of riders by a predetermined ratio, the server may determine the limit of delivery orders of the wireless terminal of that point higher than before.

In addition, the limit of delivery orders may be determined according to the means of transportation of the rider. For example, the limit of delivery orders when the means of transportation of the rider is a two-wheeled vehicle may be determined to be higher than the limit of delivery orders when the means of transportation of the rider is a bike.

The server may determine a wireless terminal to receive the direct order from among wireless terminals with less number of delivery orders assigned to those wireless terminals than the limit of delivery orders of those wireless terminals. For example, the server may determine a wireless terminal having the shortest distance between the terminal position and

the departure location of the direct order from among the wireless terminals with less number of delivery orders assigned to those wireless terminals than the limit of delivery orders of those wireless terminals as a wireless terminal to receive the direct order.

That is, when the number of delivery orders assigned to a wireless terminal having
5 the shortest distance between the departure location of the direct order and the terminal position is equal to or greater than the limit of delivery orders of that wireless terminal, the direct order may not be assigned to that wireless terminal.

Alternatively, the server may determine a wireless terminal to receive the direct order from among wireless terminals having the number of delivery orders assigned to those
10 wireless terminals equal to or less than a reference number. For example, when the reference number is "N," the server may determine a wireless terminal having the shortest distance between the terminal position and the departure location of the direct order from among wireless terminals having the number of assigned delivery orders equal to or less than "N" as a wireless terminal to receive the direct order. "N" may be a random natural number.

15 The server may determine a wireless terminal to receive the direct order from among wireless terminals registered in the server other than the wireless terminals that are set not to be automatically assigned a delivery order.

In addition, in another example, the server may determine a wireless terminal to receive the direct order based on the delay time of pre-assigned general orders due to the
20 direct order. That is, since service quality may be degraded when the pre-assigned general orders are delayed due to the direct order, the server may determine a wireless terminal to receive the direct order considering the above, before providing the direct order.

For example, when general orders are pre-assigned to a wireless terminal, the server may determine a first required time for the direct order to be processed, based on the terminal
25 position of that wireless terminal and the departure location and delivery location of the direct order. In addition, the server may determine a second required time for the general orders to be processed, based on the delivery location of the direct order and the departure location and delivery location of the pre-assigned general orders.

The server may determine a third required time for all general orders to be processed,
30 based on the terminal position of the wireless terminal and the departure location and delivery location of the pre-assigned general order. The server may determine the difference between the third required time and the sum of the first required time and the second required time as a delay time.

Here, the sum of the first required time and the second required time may mean the time taken to process all delivery orders assigned to a wireless terminal when a direct order is assigned to that wireless terminal. The third required time may mean the time taken to process all general orders assigned to a wireless terminal when a direct order is not assigned to that wireless terminal. That is, the delay time may mean, when a direct order is assigned, the time delayed due to the direct order.

Specifically, the server may predict the travel time from the terminal position to the departure location of the direct order based on i) the distance between the terminal position and the departure location of the direct order and ii) the means of transportation of the rider.

Similarly, the server may predict the travel time from the departure location to the delivery location of a direct order based on the distance between the departure location and the delivery location of the direct order. The server may determine the first required time according to the predicted time and, in a similar manner, may determine the second required time and the third required time.

The server may determine a wireless terminal to receive a direct order from among i) wireless terminals to which a general order is not assigned and ii) wireless terminals having the delay time that is the same as or shorter than a reference time due to the direct order. The reference time may be randomly determined.

Alternatively, the server may determine a wireless terminal having the shortest distance between the terminal position and the departure location of a direct order from among i) wireless terminals to which a general order is not assigned and ii) wireless terminals having the delay time that is the same as or shorter than the reference time due to the direct order as the wireless terminal to receive the direct order.

Alternatively, the server may determine a wireless terminal to receive a direct order from among i) wireless terminals to which a general order is not assigned and ii) wireless terminals having the sum of the first required time and the second required time equal to or less than a limit time. The limit time may be randomly determined for service quality.

Alternatively, the server may determine a wireless terminal having the shortest distance between the terminal position and the departure location of a direct order from among i) wireless terminals to which a general order is not assigned and ii) wireless terminals having the sum of the first required time and the second required time equal to or less than a limit time as the wireless terminal to receive the direct order.

The reference time and the limit time may be determined according to the ratio of

the number of delivery orders and the number of riders. For example, when the number of delivery orders is greater than the number of riders by a reference multiple, the reference time and the limit time may increase.

In operation 404, the server may provide a direct order to the determined wireless terminal. In operation 405, the server may update the database. Specifically, the server may update information on a wireless terminal to which the direct order is assigned. For example, the number of delivery orders assigned to the wireless terminal, the type of delivery orders, the time when a delivery order is assigned, and the like may be updated.

A wireless terminal may receive a direct order including information on the departure location and delivery location. In addition, the wireless terminal may display the departure location and delivery location of the direct order on the display of the wireless terminal.

In operation 406, the wireless terminal may lock a delivery list of the wireless terminal until the direct order is processed. When general orders are pre-assigned to the wireless terminal, the wireless terminal may lock the delivery list of the wireless terminal until all delivery orders are processed. The delivery list may include the delivery orders assigned to the wireless terminal. A processed delivery order may be deleted from the delivery list by a user's input or automatically.

In other words, the wireless terminal may set so that a new delivery order may not be assigned to the wireless terminal until all delivery orders are processed.

FIG. 5 is a flowchart illustrating a method of providing a direct order when the direct order is assigned by a rider, according to an embodiment.

In operation 501, a server may receive delivery orders from a store. Alternatively, the server may receive delivery orders from another server that manages delivery orders. Each of the received delivery orders may be one of a general order and a direct order.

In operation 502, the server may transmit a list that includes delivery orders including a direct order to wireless terminals that are registered in the server. Here, the server may transmit the list to wireless terminals to which a direct order is not assigned among the wireless terminals registered in the server.

The wireless terminal may receive the list that includes the delivery orders including information on a departure location and a delivery location and display the list on a display of the wireless terminal. The wireless terminal may receive an input of one direct order from the list from the rider through the display.

In operation 503, the wireless terminal may transmit the direct order that is input from the rider and a terminal position of the wireless terminal to the server. That is, the wireless terminal may transmit the direct order and information on the wireless terminal input from the rider to the server. Here, the information on the wireless terminal that is transmitted to the server may include a terminal ID and terminal position of the wireless terminal.

The server may receive, from one wireless terminal among the wireless terminals, the direct order included in the list and the information of the wireless terminal.

In operation 504, the server may provide the direct order received from the wireless terminal to the wireless terminal. That is, the server may assign the direct order received from the wireless terminal to the wireless terminal and, in operation 505, may update a database so that the direct order may not be selected from other wireless terminals.

That is, the server may update the database to reflect that the direct order received from the wireless terminal has been assigned. Specifically, the server may update information on the wireless terminal to which the direct order is assigned. For example, the number of delivery orders assigned to the wireless terminal, the type of delivery orders, the time when the delivery order is assigned, and the like may be updated.

In operation 506, the wireless terminal may lock a delivery list of the wireless terminal until the direct order is processed. When general orders are pre-assigned to the wireless terminal, the wireless terminal may lock the delivery list of the wireless terminal until all delivery orders are processed. The delivery list may include the delivery orders assigned to the wireless terminal. A processed delivery order may be deleted from the delivery list by a user's input or automatically.

In other words, the wireless terminal may set so that a new delivery order may not be assigned to the wireless terminal until all delivery orders are processed.

The method according to embodiments may be written in a computer-executable program and may be implemented as various recording media such as magnetic storage media, optical reading media, or digital storage media.

Various techniques described herein may be implemented in digital electronic circuitry, computer hardware, firmware, software, or combinations thereof. The techniques may be implemented as a computer program product, i.e., a computer program tangibly embodied in an information carrier, e.g., in a machine-readable storage device (for example, a computer-readable medium) or in a propagated signal, for processing by, or to control an

operation of, a data processing apparatus, e.g., a programmable processor, a computer, or multiple computers. A computer program, such as the computer program(s) described above, may be written in any form of a programming language, including compiled or interpreted languages, and may be deployed in any form, including as a stand-alone program
5 or as a module, a component, a subroutine, or other units suitable for use in a computing environment. A computer program may be deployed to be processed on one computer or multiple computers at one site or distributed across multiple sites and interconnected by a communication network.

Processors suitable for processing of a computer program include, by way of
10 example, both general and special purpose microprocessors, and any one or more processors of any kind of digital computer. Generally, a processor will receive instructions and data from a read-only memory or a random-access memory, or both. Elements of a computer may include at least one processor for executing instructions and one or more memory devices for storing instructions and data. Generally, a computer also may include, or be
15 operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto-optical disks, or optical disks. Examples of information carriers suitable for embodying computer program instructions and data include semiconductor memory devices, e.g., magnetic media such as hard disks, floppy disks, and magnetic tape, optical media such as compact disk read only memory (CD-ROM)
20 or digital video disks (DVDs), magneto-optical media such as floptical disks, read-only memory (ROM), random-access memory (RAM), flash memory, erasable programmable ROM (EPROM), or electrically erasable programmable ROM (EEPROM). The processor and the memory may be supplemented by, or incorporated in special purpose logic circuitry.

In addition, non-transitory computer-readable media may be any available media
25 that may be accessed by a computer and may include both computer storage media and transmission media.

Although the present specification includes details of a plurality of specific embodiments, the details should not be construed as limiting any invention or a scope that can be claimed, but rather should be construed as being descriptions of features that may be
30 peculiar to specific embodiments of specific inventions. Specific features described in the present specification in the context of individual embodiments may be combined and implemented in a single embodiment. On the contrary, various features described in the context of a single embodiment may be implemented in a plurality of embodiments

individually or in any appropriate sub-combination. Furthermore, although features may operate in a specific combination and may be initially depicted as being claimed, one or more features of a claimed combination may be excluded from the combination in some cases, and the claimed combination may be changed into a sub-combination or a
5 modification of the sub-combination.

Likewise, although operations are depicted in a specific order in the drawings, it should not be understood that the operations must be performed in the depicted specific order or sequential order or all the shown operations must be performed in order to obtain a preferred result. In a specific case, multitasking and parallel processing may be
10 advantageous. In addition, it should not be understood that the separation of various device components of the aforementioned embodiments is required for all the embodiments, and it should be understood that the aforementioned program components and apparatuses may be integrated into a single software product or packaged into multiple software products.

The embodiments disclosed in the present specification and the drawings are
15 intended merely to present specific examples in order to aid in understanding of the present disclosure, but are not intended to limit the scope of the present disclosure. It will be apparent to those skilled in the art that various modifications based on the technical spirit of the present disclosure, as well as the disclosed embodiments, can be made.

CLAIMS

[Claim 1] A method of providing a direct order performed by a server, the method comprising:

identifying delivery orders comprising information on a departure location and a
5 delivery location;

extracting, from among wireless terminals registered in the server, wireless terminals to which a direct order is not assigned;

determining a wireless terminal to receive a direct order among the delivery orders from among the extracted wireless terminals, based on terminal positions of the extracted
10 wireless terminals, and a departure location and a delivery location of the direct order; and providing the direct order to the determined wireless terminal.

[Claim 2] The method of claim 1, wherein the determining of the wireless terminal to receive the direct order comprises determining the wireless terminal to receive
15 the direct order, based on a distance between the departure location and the terminal positions of the extracted wireless terminals.

[Claim 3] The method of claim 1, wherein the determining of the wireless terminal to receive the direct order comprises determining the wireless terminal to receive
20 the direct order, based on a number of delivery orders assigned to the extracted wireless terminals and a limit of delivery orders of each of the extracted wireless terminals.

[Claim 4] A method of providing a direct order performed by a server, the method comprising:

25 identifying delivery orders comprising information on a departure location and a delivery location;

transmitting a list comprising the delivery orders to wireless terminals registered in the server;

receiving, from one wireless terminal among the wireless terminals, a direct order
30 included in the list and information on the wireless terminal; and providing the direct order to the wireless terminal.

[Claim 5] The method of claim 4, wherein the information on the wireless

terminal comprises i) a terminal position of the wireless terminal, ii) a number of delivery orders assigned to the wireless terminal, iii) a terminal identification (ID) of the wireless terminal, and iv) a limit of delivery orders of the wireless terminal.

5 [Claim 6] The method of claim 5, wherein the providing of the direct order comprises providing the direct order to the wireless terminal when the number of delivery orders assigned to the wireless terminal is equal to or less than a reference number.

10 [Claim 7] A method of providing a direct order performed by a wireless terminal of a rider, the method comprising:
 transmitting information on the wireless terminal to a server;
 receiving a direct order comprising information on a departure location and a delivery location from the server;
 displaying the departure location and the delivery location of the direct order on a
15 display of the wireless terminal; and
 locking a delivery list of the wireless terminal until the direct order is processed.

20 [Claim 8] The method of claim 7, wherein the information on the wireless terminal comprises a terminal identification (ID) of the wireless terminal and a terminal position of the wireless terminal.

25 [Claim 9] The method of claim 7, wherein the locking of the delivery list comprises, when at least one general order is pre-assigned to the wireless terminal, locking the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

30 [Claim 10] A method of providing a direct order performed by a wireless terminal of a rider, the method comprising:
 receiving a list comprising delivery orders comprising information on a departure location and a delivery location from a server;
 displaying the list on a display of the wireless terminal;
 transmitting a delivery order that is a direct order among the delivery orders included in the list, and a terminal position of the wireless terminal to the server; and

locking a delivery list of the wireless terminal until the direct order is processed.

[Claim 11] The method of claim 10, wherein the locking of the delivery list comprises, when at least one general order is pre-assigned to the wireless terminal, locking
5 the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

[Claim 12] A non-transitory computer-readable storage medium storing instructions that, when executed by a processor, cause the processor to perform the method
10 of one of claims 1 to 11.

[Claim 13] A server for performing a method of providing a direct order, the server comprising:

a processor configured to identify delivery orders comprising information on a
15 departure location and a delivery location, extract, from among wireless terminals registered in the server, wireless terminals to which a direct order is not assigned, determine a wireless terminal to receive a direct order among the delivery orders from among the extracted wireless terminals, based on terminal positions of the extracted wireless terminals, and a departure location and a delivery location of the direct order, and provide the direct order
20 to the determined wireless terminal.

[Claim 14] The server of claim 13, wherein the processor is configured to determine the wireless terminal to receive the direct order based on a distance between the departure location and the terminal positions of the extracted wireless terminals.
25

[Claim 15] The server of claim 13, wherein the processor is configured to determine the wireless terminal to receive the direct order, based on a number of delivery orders assigned to the extracted wireless terminals and a limit of delivery orders of each of the extracted wireless terminals.
30

[Claim 16] A server for performing a method of providing a direct order, the server comprising:

a processor configured to identify delivery orders comprising information on a

departure location and a delivery location, transmit a list comprising the delivery orders to wireless terminals registered in the server, receive, from one wireless terminal among the wireless terminals, a direct order included in the list and information on the wireless terminal, and provide the direct order to the wireless terminal.

5

[Claim 17] The server of claim 16, wherein the information on the wireless terminal comprises i) a terminal position of the wireless terminal, ii) a number of delivery orders assigned to the wireless terminal, iii) a terminal identification (ID) of the wireless terminal, and iv) a limit of delivery orders of the wireless terminal.

10

[Claim 18] The server of claim 17, wherein the processor is configured to provide the direct order to the wireless terminal when the number of delivery orders assigned to the wireless terminal is equal to or less than a reference number.

15

[Claim 19] A wireless terminal of a rider for performing a method of providing a direct order, the wireless terminal comprising:

a processor configured to transmit information on the wireless terminal to a server, receive a direct order comprising information on a departure location and a delivery location from the server, display the departure location and the delivery location of the direct order on a display of the wireless terminal, and lock a delivery list of the wireless terminal until the direct order is processed.

20

[Claim 20] The wireless terminal of claim 19, wherein the information on the wireless terminal comprises a terminal identification (ID) of the wireless terminal and a terminal position of the wireless terminal.

25

[Claim 21] The wireless terminal of claim 19, wherein the processor is configured to, when at least one general order is pre-assigned to the wireless terminal, lock the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.

30

[Claim 22] A wireless terminal of a rider for performing a method of providing a direct order, the wireless terminal comprising:

a processor configured to receive a list comprising delivery orders comprising information on a departure location and a delivery location from a server, display the list on a display of the wireless terminal, transmit a delivery order that is a direct order among the delivery orders included in the list, and a terminal position of the wireless terminal to the server, and lock a delivery list of the wireless terminal until the direct order is processed.

[Claim 23] The wireless terminal of claim 22, wherein the processor is configured to, when at least one general order is pre-assigned to the wireless terminal, lock the delivery list of the wireless terminal until the direct order and the pre-assigned general order are processed.