

DESCRIPTION

TITLE OF INVENTION: METHOD OF DETERMINING TARGET ORDER AND
SERVER AND WIRELESS TERMINAL PERFORMING THE SAME

Technical Field

5 The present disclosure relates to a method of determining a target order and a server and a wireless terminal configured to perform the method, and more specifically, a method of determining a delivery order that is the target order according to a relationship of a terminal position of a wireless terminal of a rider performing delivery and a target position set by the rider and displaying it on a display of the wireless terminal.

10 Background Art

 With the growing demands for a delivery service, such as a courier service or food delivery service, the demand for a delivery work management technology or service used for example, to efficiently distribute delivery work to a rider performing delivery, has been actively increasing.

15 Generally, riders make a contract with a branch that manages delivery orders within a certain range including several stores and are managed to perform delivery work according to a delivery order within the range.

 Accordingly, when going to work, the riders may have to move from their homes or garages to the range, and when leaving work, the riders may have to move from around the
20 range to their homes or garages.

 Typically, a server provides a delivery order from a branch to which a rider belongs regardless of the rider going to work or leaving work, which causes the issue that the rider may have to directly determine a delivery order suitable for being processed on their route among several delivery orders.

25 Disclosure of the Invention

Technical Goals

 The present disclosure provides a method of improving delivery efficiency by determining a target order among delivery orders such that a rider may process a delivery order while commuting or moving to a specific place and a server and a wireless terminal.

30 Technical Solutions

 According to an embodiment, a method of determining a target order performed by a server includes receiving a terminal position and a target position from a wireless terminal of a rider performing delivery according to a delivery order, in which the delivery order includes a departure position of the delivery order and an arrival position of the delivery

order, determining the delivery order to be the target order for the target position based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the wireless terminal, and the target position of the wireless terminal, and transmitting the delivery order determined to be the target order to the wireless terminal.

The determining the delivery order to be the target order may include, when the departure position of the delivery order is less than or equal to a pickup distance from the terminal position, determining the delivery order to be the target order for the target position based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the wireless terminal, and the target position of the wireless terminal.

The determining the delivery order to be the target order may further include, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, determining the delivery order to be the target order.

The determining the delivery order to be the target order may further include, when a distance between the target position and the departure position is greater than a distance between the target position and the arrival position, determining the delivery order to be the target order.

According to an embodiment, a method of determining a target order performed by a wireless terminal includes transmitting a target position preset for the wireless terminal to a server, receiving target orders for the target position from the server, in which the target orders include information on departure positions of the target orders and arrival positions of the target orders, and displaying the departure positions of the target orders and the arrival positions of the target orders on a display of the wireless terminal, in which the target orders are determined based on a relationship of a terminal position of the wireless terminal, the departure positions of the target orders, the arrival positions of the target orders, and the target position.

The displaying may include generating a list of the target orders in an order in which the departure positions are close to the terminal position and displaying the list on the display.

In the target orders, a distance between the arrival positions of the target orders and the target position may be less than a distance between the target position and the terminal position.

According to an embodiment, a method of determining a target order performed by

a wireless terminal may include receiving a delivery order from a server, in which the delivery order includes information on a departure position of the delivery order and an arrival position of the delivery order, identifying a target position preset for the wireless terminal, determining the delivery order to be the target order based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, a terminal position of the wireless terminal, and the identified target position, and displaying the delivery order determined to be the target order on a display of the wireless terminal.

The displaying may include generating a list of the target orders in an order in which the departure positions are close to the terminal position and displaying the list on the display.

The determining the delivery order to be the target order may include, when the departure position of the delivery order is less than or equal to a pickup distance from the terminal position, determining the delivery order to be the target order based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the delivery order, and the identified target position.

The determining the delivery order to be the target order may further include, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, determining the delivery order to be the target order.

The determining the delivery order to be the target order may further include, when a distance between the target position and the departure position is greater than a distance between the target position and the arrival position, determining the delivery order to be the target order.

According to an embodiment, a server configured to perform a method of determining a target order includes a processor, in which the processor is configured to receive a terminal position and a target position from a wireless terminal of a rider performing delivery according to the target order, determine a delivery order to be the target order for the target position based on a relationship of a departure position of the delivery order, an arrival position of the delivery order, the terminal position of the wireless terminal, and the target position of the wireless terminal, and transmit the delivery order determined to be the target order to the wireless terminal, in which the delivery order includes information on the departure position of the delivery order and the arrival position of the delivery order.

The processor may, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position,

determine the delivery order to be the target order.

According to an embodiment, a wireless terminal configured to perform a method of determining a target order includes a processor, in which the processor is configured to transmit a target position preset for the wireless terminal to a server and display a departure position of the target order and an arrival position of the target order on a display of the wireless terminal, in which the target order includes receiving target orders for the target position from the server, and the target orders include information on departure positions of the target orders and arrival positions of the target orders and is determined based on a relationship of a terminal position of the wireless terminal, the departure position of the target order, the arrival position of the target order, and the target position.

The processor may generate a list of target orders in an order in which the departure position is close to the terminal position and displaying the list on the display.

According to an embodiment, a wireless terminal configured to perform a method of determining a target order includes a processor, in which the processor is configured to receive a delivery order from a server, identify a target position preset for the wireless terminal, determine the delivery order to be the target order based on a relationship of a departure position of the delivery order, an arrival position of the delivery order, a terminal position of the wireless terminal, and the identified target position, and display the delivery order determined to be the target order on a display of the wireless terminal, in which the delivery order includes information on the departure position of the delivery order and the arrival position of the delivery order.

The processor may generate a list of target orders in an order in which the departure position is close to the terminal position and displaying the list on the display.

The processor, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, may determine the delivery order to be the target order.

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Effects

According to an embodiment, delivery efficiency may be improved by determining a target order among delivery orders such that a rider may process a delivery order while commuting or moving to a specific place.

Brief Description of Drawings

FIG. 1 is a diagram illustrating a structure of a server and a wireless terminal according to an embodiment.

FIG. 2 is a diagram illustrating a process of determining a target order when there are a wireless terminal of a rider and a target position, according to an embodiment.

5 FIG. 3 is a diagram illustrating a process of determining a target order when there is an obstacle between a wireless terminal of a rider and a target position, according to an embodiment.

FIG. 4 is a diagram illustrating a target order displayed on a display of a wireless terminal according to an embodiment.

10 FIG. 5 is a flowchart illustrating a method of determining a target order according to an embodiment.

FIG. 6 is a flowchart illustrating a method of determining a target order according to another embodiment.

Best Mode for Carrying Out the Invention

15 Hereinafter, examples will be described in detail with reference to the accompanying drawings. However, various alterations and modifications may be made to the embodiments. Here, the embodiments are not construed as limited to the disclosure. The embodiments should be understood to include all changes, equivalents, and replacements within the idea and the technical scope of the disclosure.

20 The terminology used herein is for the purpose of describing particular embodiments only and is not to be limiting of the embodiments. The singular forms "a", "an", and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises/comprising" and/or "includes/including" when used herein, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition
25 of one or more other features, integers, steps, operations, elements, components and/or groups thereof.

Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to
30 which embodiments belong. It will be further understood that terms, such as those defined in commonly-used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and will not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

When describing the embodiments with reference to the accompanying drawings,

like reference numerals refer to like constituent elements and a repeated description related thereto will be omitted. In the description of embodiments, detailed description of well-known related structures or functions will be omitted when it is deemed that such description will cause ambiguous interpretation of the present disclosure.

5 FIG. 1 is a diagram illustrating a structure of a server and a wireless terminal according to an embodiment.

 The present disclosure relates to a method of determining target orders 108 and 109 and a server 104 and a wireless terminal 101 configured to perform the method, and more specifically, a method of determining delivery orders 105 to 107 that are the target orders
10 108 and 109 according to a relationship of a terminal position of the wireless terminal 101 of a rider performing delivery and a target position set by the rider and displaying it on a display 103 of the wireless terminal 101. The server 104 and the wireless terminal 101 may respectively include processors 102 and 110, and each of the processors 102 and 110 may perform a method of providing a return order of the present disclosure.

15 FIG. 1 (a) is a diagram illustrating a process of determining the target orders 108 and 109 among the delivery orders 105 to 107 received by the wireless terminal 101, and FIG. 1 (b) is a diagram illustrating a process of determining the target orders 108 and 109 among the delivery orders 105 to 107 received by the server 104.

 Referring to FIG. 1 (a), the wireless terminal 101 may receive the delivery orders
20 105 to 107 from the server 104. Specifically, the processor 102 of the wireless terminal 101 may receive the delivery orders 105 to 107 from the server 104, determine the target orders 108 and 109 among the delivery orders 105 to 107, and display them on the display 103.

 Referring to FIG. 1 (b), the server 104 may receive the delivery orders 105 to 107
25 and provide the received delivery orders 105 to 107 to several wireless terminals 101. When receiving a target position or a time of starting to move to the target position and a terminal position from the specific wireless terminal 101, the server 104 may determine the delivery orders 105 to 107 for the target position among the delivery orders 105 to 107 to be the target orders 108 and 109 and provide the target orders 108 and 109 to the specific
30 wireless terminal 101.

 In this case, the delivery orders 105 to 107 relate to orders requesting the delivery of a product and include information on a departure position and an arrival position. For example, the departure position of the delivery orders 105 to 107 may correspond to a position of a store providing a product, and the arrival position may refer to a position of a

customer who has ordered the product.

The target orders 108 and 109 may refer to the delivery orders 105 to 107 related to the target position and be determined based on a relationship of the terminal position of the wireless terminal 101, a departure position of the target orders 108 and 109, an arrival
 5 position of the target orders 108 and 109, and the target position. For example, the delivery orders 105 to 107 corresponding to a commuting route may be determined to be the target orders 108 and 109 such that a rider may perform the delivery orders 105 to 107 while commuting.

Alternatively, even when a rider is outside a region determined by a branch to which
 10 the rider belongs while performing delivery, the rider may set the target position to be the region or a return position in the region and receive the delivery orders 105 to 107 corresponding to a route returning to the region as the target orders 108 and 109. The return position may be a position related to a service range of a branch that manages a rider, which may be randomly set by the rider and may be determined to be a specific position in a region
 15 by the branch to which the rider belongs.

In other words, when a rider is outside a region of a branch to which the rider belongs during delivery, the server 104 or the wireless terminal 101 of the rider may set a return position of the branch to be the target position and may determine the delivery orders 105 to 107 related to the return position to be the target orders 108 and 109. Accordingly, the
 20 target orders 108 and 109 related to the return position may be displayed on the display 103 of the wireless terminal 101 of the rider.

In this case, a detailed method of determining the delivery orders 105 to 107 related to the return position to be the target orders 108 and 109 is described in detail below with reference to FIGS. 2 and 3. Accordingly, since the rider may process the delivery orders
 25 105 to 107 while moving to the target position of various purposes, delivery tasks may be efficiently processed.

The target position relates to a position to which a rider intends to move, and the wireless terminal 101 may store a plurality of candidate positions that may be determined to be the target position. The rider may directly input the target position and designate any
 30 one of the candidate positions as the target position.

The candidate positions may be input to the wireless terminal 101 by the rider in advance and may be determined according to a branch to which the rider belongs. For example, the target position may be a position corresponding to a home of the rider, a garage of the rider, a place to go for work of the rider, or a place to leave after work of the rider, or

a return position in the branch to which the rider belongs. When the target position is the place to go for work or the place to leave after work, the server 104 may process a record of the rider going to work or leaving work when the wireless terminal 101 of the rider is within a certain distance from the target position.

5 Referring to FIG. 1 (a), when the rider designates the target position, the wireless terminal 101 of the rider may determine the delivery orders 105 to 107 related to the target position designated among the delivery orders 105 to 107 received from the server 104 to be the target orders 108 and 109 and display them on the display 103 of the wireless terminal 101.

10 Likewise, referring to FIG. 1 (b), when the rider designates the target position or performs an input of a time of starting to move to the target position, the target position or the time of starting to move to the target position may be transmitted to the server 104, and the server 104 may determine the delivery orders 105 to 107 related to the target position designated among the delivery orders 105 to 107 for the wireless terminal 101 of the rider
15 to be the target orders 108 and 109 and provide the target orders 108 and 109 to the wireless terminal 101.

FIG. 2 is a diagram illustrating a process of determining a target order when there are a wireless terminal of a rider and a target position, according to an embodiment.

A terminal position of the wireless terminal 201, a departure position of a delivery order, an arrival position of the delivery order, and information on a target position 202 are
20 required to determine a target order by a processor of the wireless terminal 201 or a processor of a server. Hereinafter, the processor may refer to the processor of the wireless terminal 201 or the processor of the server.

The processor may determine a delivery order to be the target order when a distance
25 between the arrival position of the delivery order and the target position 202 is less than a distance between the target position 202 and the terminal position. In this case, the distance may be a lineal distance between positions. That is, when a rider performs the target order, the target position 202 may be closer after performing delivery than a current position of the rider.

30 Alternatively, the processor may determine a delivery order to be the target order when the distance between the target position 202 and the terminal position is greater than a distance between the arrival position of the delivery order and the target position 202, and a distance between the target position 202 and the departure position of the delivery order is greater than a distance between the arrival position of the delivery order and the target

position 202.

Alternatively, the processor may determine a delivery order to be the target order when the distance between the target position 202 and the terminal position is greater than a distance between the arrival position of the delivery order and the target position 202, and a
 5 distance between the terminal position and the departure position of the delivery order is less than a distance between the terminal position and the target position 202.

In addition, the processor may determine a delivery order among delivery orders, in which a distance between the departure position of the delivery orders and the terminal position is less than or equal to a pickup distance 203, to be the target order. That is, when
 10 the departure position of a delivery order is outside the pickup distance 203 from the wireless terminal 201, the delivery order may not be determined to be the target order. The pickup distance 203 may be preset by the rider or by the server. For example, the pickup distance 203 may be determined to be 5 km.

In addition, the processor may not determine a delivery order to be the target order
 15 when a distance between the departure position of the delivery order and the arrival position of the delivery order is greater than a distance between the wireless terminal 201 and the target position 202 even if a distance between the arrival position of the delivery order and the target position 202 is less than the distance between the target position 202 and the terminal position.

That is, the processor may determine a delivery order to be the target order when a
 20 distance between the arrival position of the delivery order and the target position 202 is less than the distance between the target position 202 and the terminal position, and a distance between the departure position of the delivery order and the arrival position of the delivery order is less than the distance between the wireless terminal 201 and the target position 202.

Referring to FIG. 2, arrows (a) to (e) illustrated in FIG. 2 may be a delivery order, a
 25 starting point of an arrow may be the departure position of the delivery order, and an end point of the arrow may be the arrival position of the delivery order.

For example, referring to FIG. 2, a delivery order (e.g., (a) of FIG. 2) may be
 30 determined to be the target order by the processor because a distance between the arrival position of the delivery order and the target position 202 is less than the distance between the wireless terminal 201 and the target position 202, and the departure position of the delivery order is less than or equal to the pickup distance 203 from the wireless terminal 201.

In addition, a delivery order (e.g., (b) of FIG. 2) may be determined to be the target order by the processor because a distance between the arrival position of the delivery order

and the target position 202 is less than the distance between the wireless terminal 201 and the target position 202 but may not be determined to be the target order because the departure position of the delivery order is greater than or equal to the pickup distance 203 from the wireless terminal 201.

5 In addition, a delivery order (e.g., (c) of FIG. 2) may be determined to be the target order by the processor because a distance between the arrival position of the delivery order and the target position 202 is less than the distance between the wireless terminal 201 and the target position 202 but may not be determined to be the target order because a distance between the departure position of the delivery order and the target position 202 is less than
10 the distance between the arrival position of the delivery order and the target position 202, and a distance between the departure position of the delivery order and the terminal position is greater than the distance between the target position 202 and the terminal position.

 In addition, a delivery order (e.g., (d) or (e) of FIG. 2) may not be determined to be the target order by the processor because a distance between the arrival position of the
15 delivery order and the target position 202 is greater than the distance between the wireless terminal 201 and the target position 202.

 In addition, a delivery order (e.g., (f) of FIG. 2) may be determined to be the target order by the processor because a distance between the arrival position of the delivery order and the target position 202 is less than the distance between the wireless terminal 201 and
20 the target position 202 but may not be determined to be the target order because a distance between the departure position of the delivery order and the arrival position of the delivery order is greater than the distance between the wireless terminal 201 and the target position 202.

 FIG. 3 is a diagram illustrating a process of determining a target order when there is
25 an obstacle between a wireless terminal of a rider and a target position, according to an embodiment.

 As illustrated in FIG. 3, there may be an obstacle 300 (e.g., a river or a building) that may not be moved between a wireless terminal 301 and a target position 302. In this case, even when a lineal distance between an arrival position of a delivery order and the
30 target position 302 is less than a lineal distance between a terminal position and the target position 302, an actual route may require more time due to the obstacle 300.

 For example, referring to FIG. 3, when a time required for a route (A) is less than a time required for a route (B) of the routes (A) and (B) through which a rider reaches the target position 302, a time when the rider reaches the target position 302 after processing a

delivery order (e.g., (e) of FIG. 3) may increase than before processing the delivery order.

That is, a lineal distance between the arrival position of the delivery order (e.g., (e) of FIG. 3) and the target position 302 may be less than the lineal distance between the terminal position and the target position 302, but a time required to reach the target position 302 through an actual route may increase due to the obstacle 300.

Accordingly, to prevent such a case, a processor may search for a route from the terminal position to the target position 302 and determine a delivery order to be the target order when a time required for a route from the arrival position of the delivery order to the target position 302 is less than a time required for the route from the terminal position to the target position 302.

In this case, the route may vary depending on the means of transportation determined by the rider. For example, when the means of transportation are determined to be a two-wheeled vehicle, the processor may search for a route to the target position 302 based on the two-wheeled vehicle.

In addition, as described with reference to FIG. 2, the processor may determine a delivery order among delivery orders, in which a distance between the departure position of the delivery orders and the terminal position is less than or equal to a pickup distance, to be the target order.

In addition, the processor may determine a delivery order to be the target order when a time required for a route from the departure position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302, and a time required for a route from the departure position of the delivery order to the arrival position of the delivery order is less than a time required for a route from the wireless terminal 301 to the target position 302.

In addition, the processor may determine a delivery order to be the target order when a time required for a route from the arrival position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302, and a time required for a route from the departure position of the delivery order to the arrival position of the delivery order is less than the time required for the route from the wireless terminal 301 to the target position 302, and a time required for a route from the departure position of the delivery order to the target position 302 is greater than the time required for the route from the arrival position of the delivery order to the target position 302.

Referring to FIG. 3, arrows (a) to (e) illustrated in FIG. 3 may be a delivery order, a

starting point of an arrow may be the departure position of the delivery order, and an end point of the arrow may be the arrival position of the delivery order. In addition, referring to FIG. 3, the time required for the route (A) is assumed to be less than the time required for the route (B) of the routes (A) and (B) through which the rider reaches the target position 302.

In this case, a delivery order (e.g., (a) of FIG. 3) may be determined to be the target order because a time required for a route from the arrival position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302.

In addition, a delivery order (e.g., (b) of FIG. 3) may be determined to be the target order because a time required for a route from the arrival position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302.

However, the wireless terminal 301 of the rider may display the delivery order (e.g., (a) of FIG. 3) of which the departure position is close to the terminal position prior to the delivery order (e.g., (b) of FIG. 3) of the delivery orders (e.g., (a) and (b) of FIG. 3) on a display.

A delivery order (e.g., (c) of FIG. 3) may be determined to be the target order because a time required for a route from the arrival position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302.

However, a delivery order (e.g., (d) of FIG. 3) may be determined to be the target order because a time required for a route from the arrival position of the delivery order to the target position 302 is less than the time required for the route from the terminal position to the target position 302 but may not be determined to be the target order because a time required for a route from the departure position of the delivery order to the target position 302 is less than the time required for the route from the arrival position of the delivery order to the target position 302.

In addition, as described above, the delivery order (e.g., (e) of FIG. 3) may not be determined to be the target order because the lineal distance between the arrival position of the delivery order and the target position 302 is less than the lineal distance between the terminal position and the target position 302, but a time required for a route from the arrival position of the delivery order to the target position 302 is greater than the time required for the route from the terminal position to the target position 302.

FIG. 4 is a diagram illustrating a target order displayed on a display of a wireless terminal according to an embodiment.

(a) of FIG. 4 and (b) of FIG. 4 may display a display 401 included by a wireless terminal 400 of a rider according to whether the rider moves to a target position 405. Specifically, (a) of FIG. 4 may be a display before the rider starts to move to the target position 405. (b) of FIG. 4 may be a display after the rider starts to move to the target position 405.

Referring to (a) of FIG. 4, a list of delivery orders 403 and 404 received from a server regardless of the target position 405 may be displayed on the display before the rider starts to move to the target position 405. In addition, referring to (a) of FIG. 4, a button 402 for receiving the target order may be displayed on the display.

In this case, a button for setting or changing the target position 405 may be also displayed on the display. When there is an input to the button 402 for receiving the target order, the target position 405 and a terminal position may be transmitted to the server from the wireless terminal 400. The display may display a list of target orders 406 and 407 as illustrated in (b) of FIG. 4.

Alternatively, the target orders 406 and 407 may be displayed on a map not the list. Specifically, the display may display the terminal position of the rider and a map including the target position, and the departure and arrival positions of each target order may be displayed together on the map. That is, the wireless terminal may display the map on the display and display the terminal position, the target position, and the departure and arrival positions of each target order on the map.

In addition, the number of target orders displayed on the display may be predetermined by the rider.

In (b) of FIG. 4, a processor of the wireless terminal 400 may arrange the target order 406, of which a time required for a route from the terminal position to the departure position is less, of the target orders 406 and 407 higher on the list. That is, the list of the target orders 406 and 407 may be arranged in an order of a close distance between the departure position to the terminal position such that as many delivery orders as possible may be processed on the route to the target position.

Alternatively, a target order that is determined to be urgently processed of the target orders 406 and 407 by the server or target orders that a certain time has passed after being received may be arranged higher on the list. Alternatively, a target order from a store that is predetermined to be a preferential store of the target orders 406 and 407 may be arranged

higher on the list.

Alternatively, the processor of the wireless terminal 400 may determine a priority of the target orders 406 and 407 to be displayed on the display by comparing a time required for a route from the terminal position to the departure position of the target orders 406 and 407 and a time required for a route from the arrival position of the target orders 406 and 407 to the target position when the target orders 406 and 407 are plural.

For example, the processor of the wireless terminal 400 may group the plurality of target orders 406 and 407 according to the time required for the route from the terminal position to the departure position of the target orders 406 and 407 and assign a higher priority to a target order, as a time required for a route from the arrival position of the target order to the target position is less, among the grouped target orders 406 and 407.

As another example, the processor of the wireless terminal 400 may set a first weight according to the time required for the route from the terminal position to the departure position of the target orders 406 and 407, set a second weight according to the time required for the route from the arrival position of the target orders 406 and 407 to the target position, and determine a priority according to a sum of the first weight and the second weight.

For example, a higher first weight may be set for a target order as a time required for a route from the terminal position to the departure position of the target order decreases, and a higher second weight may be set for a target order as a time required for a route from the arrival position of the target order to the target position decreases. In addition, as the sum of the first weight and the second weight increases, a priority may increase.

In addition, for the purpose of the rider, the first weight and the second weight may have different sizes. That is, when intending to reach the target position as soon as possible, the rider may determine the size of the second weight to be greater than the size of the first weight, and target orders of which the arrival position is closer to the target position may be first displayed among target orders.

Likewise, when intending to process as many delivery tasks as possible while heading to the target position, the rider may determine the size of the first weight to be greater than the size of the second weight, and target orders of which the departure position is closer to the terminal position may be first displayed among target orders.

FIG. 5 is a flowchart illustrating a method of determining a target order according to an embodiment.

FIG. 5 is a flowchart illustrating a method of determining a target position among delivery orders by a processor of a wireless terminal. Specifically, in operation 501, the

wireless terminal may receive a delivery order from a server. The delivery order may include information on a departure position of the delivery order and information on an arrival position of the delivery order.

In operation 502, the processor of the wireless terminal may identify a preset target position. Prior to operation 502, a time of starting to move to the target position may be input. For example, the inputting of the time of starting to move to the target position may be a button displayed on a display of the wireless terminal being clicked. In addition, the target position may be directly input by a rider or determined by selecting any one from among candidate positions.

In operation 503, the processor of the wireless terminal may determine the delivery order to be the target order based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, a terminal position of the wireless terminal, and the identified target position.

The processor of the wireless terminal may determine a delivery order to be the target order when a distance between the arrival position of the delivery order and the target position is less than a distance between the target position and the terminal position, and a distance between the departure position of the delivery order and the arrival position of the delivery order is less than a distance between the wireless terminal and the target position.

Alternatively, the processor of the wireless terminal may determine a delivery order to be the target order when the distance between the target position and the terminal position is greater than a distance between the arrival position of the delivery order and the target position, and a distance between the terminal position and the departure position of the delivery order is less than the distance between the terminal position and the target position.

In addition, the processor of the wireless terminal may determine a delivery order among delivery orders, in which a distance between the departure position of the delivery orders and the terminal position is less than or equal to a pickup distance, to be the target order.

In operation 504, the processor of the wireless terminal may display the delivery order that is determined to be the target order on the display of the wireless terminal. A target order of which a time required for a route from the terminal position to the departure position of the target order is less among target orders may be arranged higher on a list of the target orders by the processor of the wireless terminal.

FIG. 6 is a flowchart illustrating a method of determining a target order according to another embodiment.

FIG. 6 is a flowchart illustrating a method of determining a target position among delivery orders by a processor of a server. In operation 601, the server may receive the target position and a terminal position from the wireless terminal. Prior to operation 601, a time of starting to move to the target position may be input in the wireless terminal.

5 In operation 602, the processor of the server may identify the terminal position of the wireless terminal and the target position of the wireless terminal. In addition, in operation 603, the server may determine a delivery order to be the target order for the target position, based on a relationship of a departure position of the delivery order, an arrival position of the delivery order, the terminal position of the wireless terminal, and the target
10 position of the wireless terminal.

Specifically, the processor of the server may determine a delivery order to be the target order when a distance between the arrival position of the delivery order and the target position is less than a distance between the target position and the terminal position, and a distance between the departure position of the delivery order and the arrival position of the
15 delivery order is less than a distance between the wireless terminal and the target position.

Alternatively, the processor of the server may determine a delivery order to be the target order when the distance between the target position and the terminal position is greater than a distance between the arrival position of the delivery order and the target position, and a distance between the terminal position and the departure position of the delivery order is
20 less than the distance between the terminal position and the target position.

In addition, the processor of the server may determine a delivery order among delivery orders, in which a distance between the departure position of the delivery orders and the terminal position is less than or equal to a pickup distance, to be the target order. In operation 604, the server may transmit a delivery order that is determined to be the target
25 order to the wireless terminal.

In operation 605, the wireless terminal may display the departure and arrival positions of the target order on a display of the wireless terminal. In this case, a target order of which a time required for a route from the terminal position to the departure position of the target order is less among target orders may be arranged higher on a list of the target
30 orders by the processor of the wireless terminal.

The method according to the present disclosure 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 implementations may be achieved 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 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 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 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) 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 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 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
5 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 modification of the sub-combination.

Likewise, although operations are depicted in a specific order in the drawings, it
10 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 specific cases, multitasking and parallel processing may be 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
15 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 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
20 apparent to one of ordinary skill 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

[Claim1] A method of determining a target order performed by a server, the method comprising:

receiving a terminal position and a target position from a wireless terminal of a rider
5 performing delivery according to a delivery order, wherein the delivery order comprises a departure position of the delivery order and an arrival position of the delivery order;

determining the delivery order to be the target order for the target position based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the wireless terminal, and the target position of the
10 wireless terminal; and

transmitting the delivery order determined to be the target order to the wireless terminal.

[Claim 2] The method of claim 1, wherein
15 the determining the delivery order to be the target order comprises:

when the departure position of the delivery order is less than or equal to a pickup distance from the terminal position, determining the delivery order to be the target order for the target position based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the wireless terminal, and the
20 target position of the wireless terminal.

[Claim 3] The method of claim 1, wherein
the determining the delivery order to be the target order further comprises:
when a distance between the target position and the terminal position is greater than
25 a distance between the arrival position and the target position, determining the delivery order to be the target order.

[Claim 4] The method of claim 1, wherein
the determining the delivery order to be the target order further comprises:
30 when a distance between the target position and the departure position is greater than a distance between the target position and the arrival position, determining the delivery order to be the target order.

[Claim 5] A method of determining a target order performed by a wireless

terminal, the method comprising:

transmitting a target position preset for the wireless terminal to a server;

receiving target orders for the target position from the server, wherein the target orders comprise information on departure positions of the target orders and arrival positions of the target orders; and

displaying the departure positions of the target orders and the arrival positions of the target orders on a display of the wireless terminal, wherein

the target orders are determined based on a relationship of a terminal position of the wireless terminal, the departure positions of the target orders, the arrival positions of the target orders, and the target position.

[Claim 6] The method of claim 5, wherein

the displaying comprises generating a list of the target orders in an order in which the departure positions are close to the terminal position and displaying the list on the display.

[Claim 7] The method of claim 5, wherein,

in the target orders, a distance between the arrival positions of the target orders and the target position is less than a distance between the target position and the terminal position.

[Claim 8] A method of determining a target order performed by a wireless terminal, the method comprising:

receiving a delivery order from a server, wherein the delivery order comprises information on a departure position of the delivery order and an arrival position of the delivery order;

identifying a target position preset for the wireless terminal;

determining the delivery order to be the target order based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, a terminal position of the wireless terminal, and the identified target position; and

displaying the delivery order determined to be the target order on a display of the wireless terminal.

[Claim 9] The method of claim 8, wherein

the displaying comprises generating a list of target orders in an order in which the departure position is close to the terminal position and displaying the list on the display.

[Claim 10] The method of claim 8, wherein

the displaying further comprises displaying the departure position of each of target orders and the arrival position of each of the target orders on a map displaying the terminal position and the target position.

[Claim 11] The method of claim 8, wherein

the determining the delivery order to be the target order comprises:

when the departure position of the delivery order is less than or equal to a pickup distance from the terminal position, determining the delivery order to be the target order based on a relationship of the departure position of the delivery order, the arrival position of the delivery order, the terminal position of the delivery order, and the identified target position.

[Claim 12] The method of claim 8, wherein

the determining the delivery order to be the target order further comprises:

when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, determining the delivery order to be the target order.

[Claim 13] The method of claim 8, wherein

the determining the delivery order to be the target order further comprises:

when a distance between the target position and the departure position is greater than a distance between the target position and the arrival position, determining the delivery order to be the target order.

[Claim 14] A server configured to perform a method of determining a target order, the server comprising:

a processor, wherein the processor is configured to

receive a terminal position and a target position from a wireless terminal of a rider performing delivery according to the target order, determine a delivery order to be the target order for the target position based on a relationship of a departure position of the delivery order, an arrival position of the delivery order, the terminal position of the wireless terminal, and the target position of the wireless terminal, and transmit the delivery order determined

to be the target order to the wireless terminal, wherein

the delivery order comprises information on the departure position of the delivery order and the arrival position of the delivery order.

5 [Claim 15] The server of claim 14, wherein

the processor is further configured to, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, determine the delivery order to be the target order.

10 [Claim 16] A wireless terminal configured to perform a method of determining a target order, the wireless terminal comprising:

a processor, wherein the processor is configured to

transmit a target position preset for the wireless terminal to a server, and display a departure position of the target order and an arrival position of the target order on a display
15 of the wireless terminal, wherein

the target order comprises receiving target orders for the target position from the server, wherein

the target orders comprise information on departure positions of the target orders and arrival positions of the target orders and is determined based on a relationship of a terminal position of the wireless terminal, the departure position of the target order, the
20 arrival position of the target order, and the target position.

[Claim 17] The wireless terminal of claim 16, wherein

the processor is further configured to generate a list of target orders in an order in
25 which the departure position is close to the terminal position and displaying the list on the display.

[Claim 18] A wireless terminal configured to perform a method of determining a target order, the wireless terminal comprising:

30 a processor, wherein the processor is configured to

receive a delivery order from a server, identify a target position preset for the wireless terminal, determine the delivery order to be the target order based on a relationship of a departure position of the delivery order, an arrival position of the delivery order, a terminal position of the wireless terminal, and the identified target position, and display the

delivery order determined to be the target order on a display of the wireless terminal, wherein the delivery order comprises information on the departure position of the delivery order and the arrival position of the delivery order.

5 [Claim 19] The wireless terminal of claim 18, wherein
the processor is further configured to generate a list of target orders in an order in which the departure position is close to the terminal position and displaying the list on the display.

10 [Claim 20] The wireless terminal of claim 18, wherein
the processor is further configured to display the departure position of each of target orders and the arrival position of each of the target orders on a map displaying the terminal position and the target position.

15 [Claim 21] The wireless terminal of claim 18, wherein
the processor is further configured to, when a distance between the target position and the terminal position is greater than a distance between the arrival position and the target position, determine the delivery order to be the target order.

20 [Claim 22] The wireless terminal of claim 18, wherein
the processor is further configured to, when a distance between the target position and the arrival position is greater than a distance between the target position and the arrival position, determine the delivery order to be the target order.