CLAIMS

1. A server for processing on-demand services, the server comprising:

a memory for storing instructions; and

a processor for executing the stored instructions and configured to:

receive a plurality of requests for an item delivery service, wherein each of the plurality of requests includes information about at least one selected item and a delivery location for the item delivery service;

segment the requests into one or more batches based on time relating to each of the requests;

for each of the batches, segment the requests into one or more geographical area groups based on the delivery location for each of the requests; and

assign one or more vehicles capable of preparing the selected item to the one or more geographical area groups, so that the assigned vehicle prepares the selected item for the item delivery service while the assigned vehicle moves along a travel route in a geographical area corresponding to the geographical area group that the vehicle is assigned,

wherein the processor is further configured to:

for each of the geographical area groups, select a delivery service provider from one or more delivery service providers based on at least one of a geographical location of the delivery service provider, the geographical location of the assigned vehicle and the delivery location; and

request the selected delivery service provider to pick up the selected item at a centre location on the assigned vehicle’s travel route and deliver the selected item to the delivery location, and

wherein the processor is further configured to:

determine the centre location on the travel route of the assigned vehicle, based on delivery locations for each of the requests belonging to the geographical area group; and

update the centre location based on the geographical location of the selected delivery service provider and the geographical location of the assigned vehicle that are changed in real-time.

2. The server according to claim 1, wherein the processor is further configured to, for each of the geographical area groups, segment the requests into one or more clusters based on the selected item for each of the requests.

3. The server according to claim 2, wherein the processor is further configured to, for each of the geographical area groups, assign the one or more vehicles to the one or more clusters based on the vehicles' capabilities of preparing the selected item.

4. The server according to any one of claims 1 to 3, wherein the processor is further configured to segment the requests into the one or more batches based on a predetermined time slot to which the time relating to each of the requests belongs.

5. The server according to claim 4, wherein the processor is further configured to determine the predetermined time slot based on historical data about the requests for the item delivery service.

6. The server according to claim 5, wherein the processor is further configured to, after the requests belonging to a first batch are processed, update the predetermined time slot based on a number of the requests and the vehicles' performance of preparing the selected item.

7. The server according to any one of claims 1 to 6, wherein the processor is further configured to, after a predetermined time for processing the requests belonging to a previous batch, check if the previous batch includes at least one request which is not processed; and

include the request which is not processed in the previous batch into a next batch of the requests.

8. A method for processing on-demand services, the method comprising:

receiving a plurality of requests for an item delivery service, wherein each of the plurality of requests includes information about at least one selected item and a delivery location for the item delivery service;

segmenting the requests into one or more batches based on time relating to each of the requests;

for each of the batches, segmenting the requests into one or more geographical area groups based on the delivery location for each of the requests; and

assigning one or more vehicles capable of preparing the selected item to the one or more geographical area groups, so that the assigned vehicle prepares the selected item for the item delivery service while the assigned vehicle moves along a travel route in a geographical area corresponding to the corresponding geographical area group that the vehicle is assigned,

wherein the method further comprises:

for each of the geographical area groups, selecting a delivery service provider from one or more delivery service providers based on at least one of a geographical location of the delivery service provider, the geographical location of the assigned vehicle and the delivery location; and

requesting the selected delivery service provider to pick up the selected item at a centre location on the assigned vehicle's travel route and deliver the selected item to the delivery location, and

wherein the method further comprises:

determining the centre location on the travel route of the assigned vehicle, based on delivery locations for each of the requests belonging to the geographical area group; and

updating the centre location based on the geographical location of the selected delivery service provider and the geographical location of the assigned vehicle that are changed in real-time.

9. The method according to claim 8 further comprising, for each of the geographical area groups, segmenting the requests into one or more clusters based on the selected item for each of the requests.

10. The method according to claim 9 further comprising, for each of the geographical area groups, assigning the one or more vehicles to the one or more clusters based on the vehicles' capabilities of preparing the selected item.

11. The method according to any one of claims 8 to 10 further comprising segmenting the requests into the one or more batches based on a predetermined time slot to which the time relating to each of the requests belongs.

12. The method according to claim 11 further comprising determining the predetermined time slot based on historical data about the requests for the item delivery service.

13. The method according to claim 12 further comprising, after the requests belonging to a first batch are processed, updating the predetermined time slot based on a number of the requests and the vehicles' performance of preparing the selected item.

14. The method according to any one of claims 8 to 13 further comprising, after a predetermined time for processing the requests belonging to a previous batch, checking if the previous batch includes at least one request which is not processed; and

including the request which is not processed in the previous batch into a next batch of the requests.

15. A data processing apparatus configured to perform the method of any one of claims 8 to 14.

16. A computer-readable medium comprising program instructions, which, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 8 to 14.