

Claims

1. A computer-implemented system for providing delivery assignment, comprising:
 - one or more memory devices storing instructions;
 - one or more processors configured to execute the instructions to perform operations comprising:
 - receiving a request to assign delivery tasks to a group of delivery workers from a user device;
 - accessing a first database storing delivery tasks, each delivery task associated with properties including a delivery location, a volume of parcels, and an assigned volume of parcels; and
 - accessing a second database storing information associated with delivery workers, each delivery worker associated with one or more desired delivery areas, and a desired delivery volume;
 - executing a first scheduling type, the first scheduling type being one of:
 - a delivery task basis for assigning delivery tasks to delivery workers, and
 - a delivery worker basis for assigning delivery workers to delivery tasks;
 - determining, based on assigning the tasks and workers using the first scheduling type, a comparison between the number of unassigned delivery tasks and a predefined threshold;
 - based on the comparison:
 - transmitting the assignments to the user device; or

executing a second scheduling type, the
second scheduling type being different
from the first scheduling type.

2. The system of claim 1, wherein each delivery worker is associated with a status of loyal, new, rolling, and normal and further wherein assigning a first delivery task to a first delivery worker further comprises:
 - determining whether available delivery workers comprise a loyal delivery worker;
 - assigning a loyal delivery worker to the delivery task when it is determined that available delivery workers comprise a loyal delivery worker;
 - determining whether available delivery workers comprise a new delivery worker when it is determined that available delivery workers do not comprise a loyal delivery worker;
 - assigning a new delivery worker to the delivery task when it is determined that available delivery workers comprise a new delivery worker;
 - determining whether available delivery workers comprise a rolling delivery worker when it is determined that available delivery workers do not comprise a new delivery worker;
 - assigning a rolling delivery worker to the delivery task when it is determined that available delivery workers comprise a rolling delivery worker;
 - determining whether available delivery workers comprise a normal delivery worker when it is determined that available delivery workers do not comprise a rolling delivery worker; and
 - assigning a normal delivery worker to the delivery task when it is determined that available delivery workers comprise a normal delivery worker.

3. The system of claim 2, wherein executing the first scheduling type comprises reassigning the delivery task, the reassignment comprising preserving the delivery tasks assigned to the loyal and rolling delivery workers.
4. The system of claim 2, wherein the desired delivery volume of new delivery workers is limited by a predefined volume.
5. The system of claim 1, wherein the desired delivery volume associated with a delivery worker comprises a desired range of delivery volume and wherein the operations further comprise choosing a maximum value or a minimum value of the desired range.
6. The system of claim 5, wherein choosing a maximum value or minimum value of the desired range comprises choosing a maximum value when the total volume of delivery parcels for all delivery tasks is more than the total desired delivery volume of all delivery workers and choosing a minimum value when the total volume of delivery parcels for all delivery tasks is less than the total desired delivery volume of all delivery workers.
7. The system of claim 1, wherein the operations further comprise sorting the delivery tasks in descending order of the volume of parcels to prioritize delivery tasks with greater volumes for delivery assignments.
8. The system of claim 1, wherein executing the first scheduling type comprises prioritizing a delivery worker with limited desired delivery areas for delivery assignments.
9. The system of claim 1, wherein a delivery task is not assigned to a delivery worker associated with a black-list status.

10. The system of claim 1, wherein the delivery worker is removed from the second database when the delivery worker is listed in the second database multiple times.
11. A computer-implemented method for providing delivery assignment, comprising:
 - one or more memory devices storing instructions;
 - one or more processors configured to execute the instructions to perform operations comprising:
 - receiving a request to assign a group of delivery workers to delivery tasks from a user device;
 - accessing a first database storing delivery tasks, each delivery task associated with properties including a delivery location and a volume of parcels; and
 - accessing a second database storing information associated with delivery workers, each delivery worker associated with an assignment status, one or more desired delivery areas, a desired delivery volume, and an assigned volume of parcels;
 - executing a first scheduling type, the first scheduling type being one of:
 - a delivery task basis for assigning delivery tasks to delivery workers, and
 - a delivery worker basis for assigning delivery workers to delivery tasks;
 - determining, based on assigning the tasks and workers using the first scheduling type, a comparison between the number of unassigned delivery tasks and a predefined threshold;
 - based on the comparison:
 - transmitting the assignments to the user device; or

executing the second scheduling type, the
second scheduling type being different
from the first scheduling type.

12. The method of claim 11, wherein each delivery worker is associated with a status of loyal, new, rolling, or normal and further wherein assigning a first delivery task to a first delivery worker further comprises:

determining whether available delivery workers comprise a loyal delivery worker;
assigning a loyal delivery worker to the delivery task when it is determined that available delivery workers comprise a loyal delivery worker;
determining whether available delivery workers comprise a new delivery worker when it is determined that available delivery workers do not comprise a loyal delivery worker;
assigning a new delivery worker to the delivery task when it is determined that available delivery workers comprise a new delivery worker;
determining whether available delivery workers comprise a rolling delivery worker when it is determined that available delivery workers do not comprise a new delivery worker;
assigning a rolling delivery worker to the delivery task when it is determined that available delivery workers comprise a rolling delivery worker;
determining whether available delivery workers comprise a normal delivery worker when it is determined that available delivery workers do not comprise a rolling delivery worker; and
assigning a normal delivery worker to the delivery task when it is determined that available delivery workers comprise a normal delivery worker.

13. The method of claim 12, wherein the desired delivery volume of new delivery worker is limited by a predefined volume.

14. The method of claim 11, wherein the desired delivery volume associated with a delivery worker comprises a desired range of delivery volume and wherein the operations further comprise choosing a maximum value or a minimum value of the desired range.
15. The method of claim 14, wherein choosing a maximum value or minimum value of the desired range comprises choosing a maximum value when the total volume of delivery parcels for all delivery tasks is more than the total desired delivery volume of all delivery workers and choosing a minimum value when the total volume of delivery parcels for all delivery tasks is less than the total desired delivery volume of all delivery workers.
16. The method of claim 11, wherein the operations further comprise sorting the retrieved delivery tasks in descending order of the volume of parcels to prioritize delivery tasks with higher volumes for delivery assignments.
17. The method of claim 11, wherein a delivery worker with limited desired delivery areas is prioritized for delivery assignments.
18. A computer-implemented system for providing delivery assignment, comprising:
 - one or more memory devices storing instructions;
 - one or more processors configured to execute the instructions to perform operations comprising:
 - receiving a request to assign delivery tasks to a group of delivery workers from a user device;
 - accessing a first database storing delivery tasks, each delivery task associated with properties including a delivery location, a volume of parcels, and an assigned volume of parcels, wherein the delivery

location includes one or more neighboring destinations; and

accessing a second database storing information associated with delivery workers, each delivery worker associated with an assignment status, one or more desired delivery areas, and a desired delivery volume;

executing the first scheduling type, the first scheduling type being one of:

- a delivery task basis for assigning delivery tasks to delivery workers, and
- a delivery worker basis for assigning delivery workers to delivery tasks;

determining, based on assigning the tasks and workers using the first scheduling type, a comparison between the number of unassigned delivery tasks and a predefined threshold;

based on the comparison:

- transmitting the assignments to the user device; or
- executing a second scheduling type, the second scheduling type being different from the first scheduling type,

wherein each delivery worker is associated with a status of loyal, new, rolling, or normal and further wherein assigning the first delivery task to a first delivery worker further comprises:

- determining whether available delivery workers comprise a loyal delivery worker;
- assigning the loyal delivery worker to the delivery task when it is determined that

the available delivery workers comprise the loyal delivery worker;

determining whether the available delivery workers comprise a new delivery worker when it is determined that the available delivery workers do not comprise the loyal delivery worker;

assigning the new delivery worker to the delivery task when it is determined that the available delivery workers comprise the new delivery worker;

determining whether the available delivery workers comprise a rolling delivery worker when it is determined that the available delivery workers do not comprise the new delivery worker;

assigning the rolling delivery worker to the delivery task when it is determined that the available delivery workers comprise the rolling delivery worker;

determining whether the available delivery workers comprise a normal delivery worker when it is determined that the available delivery workers do not comprise the rolling delivery worker; and

assigning the normal delivery worker to the delivery task when it is determined that the available delivery workers comprise the normal delivery worker.