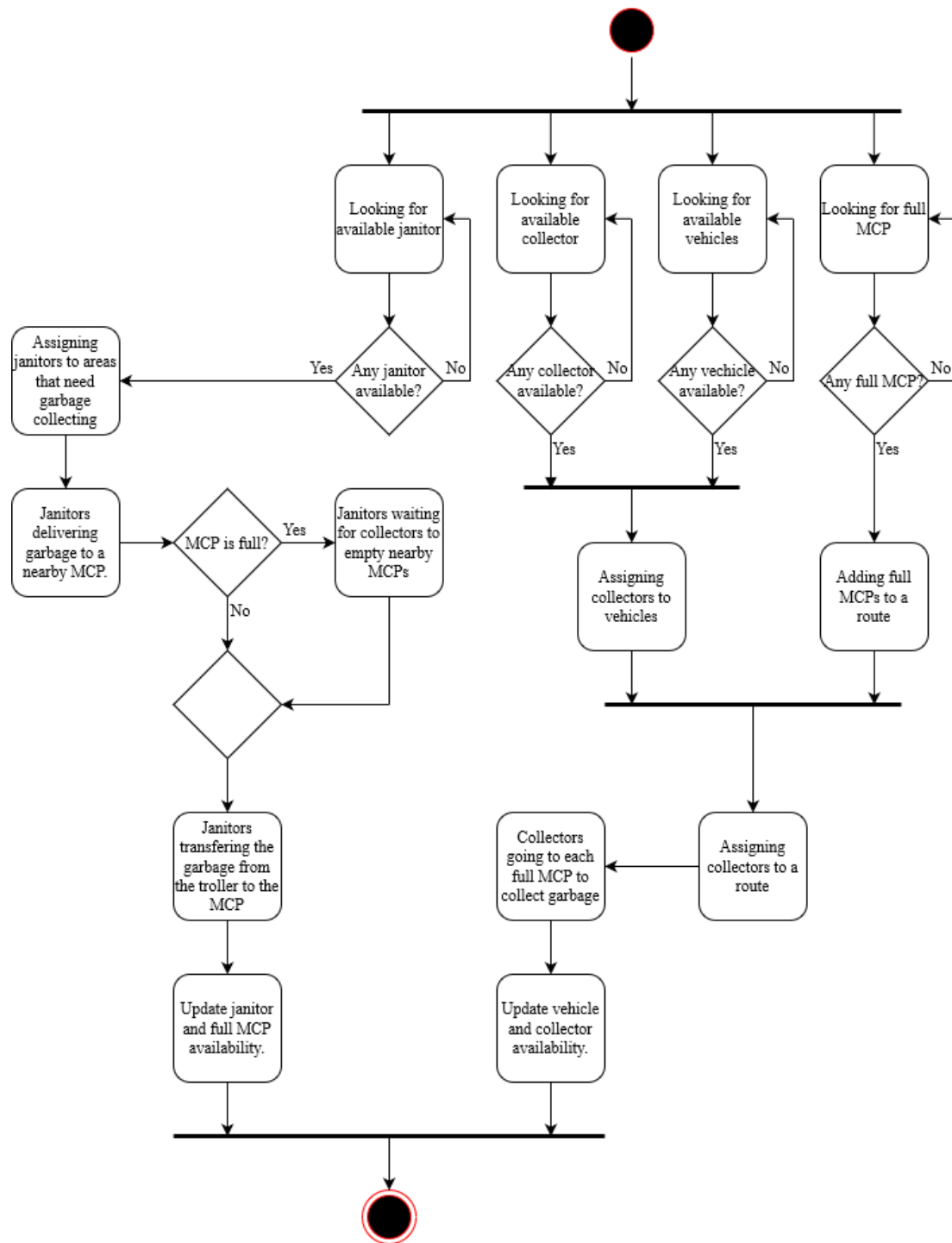


## Task 2

2.1



## 2.2

### Objectives

- Minimize the number of vehicles.
- Minimize travel time.
- Balance workload among the vehicles.

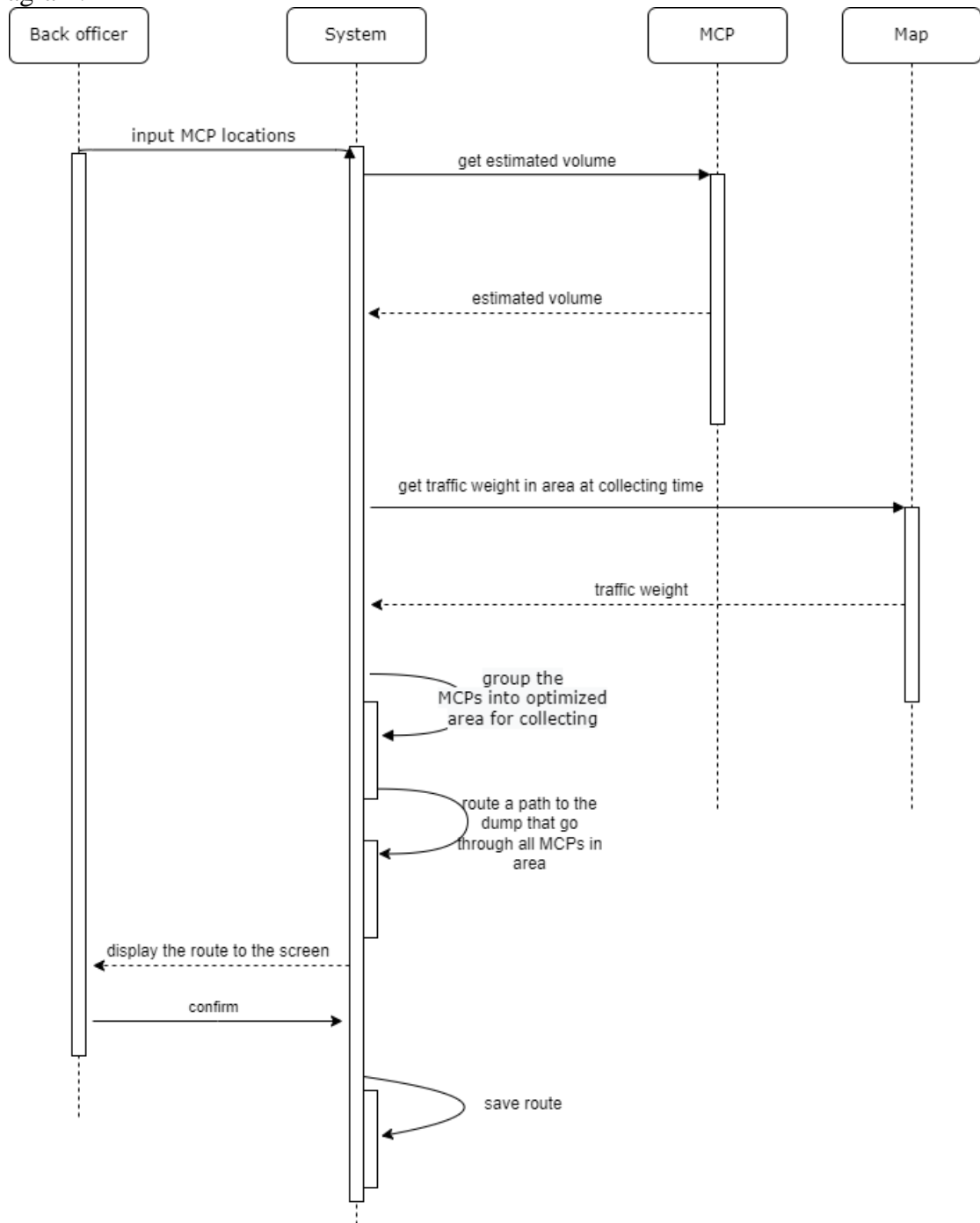
### Constraints

- Vehicle capacity (volume, weight).
- Route capacity (maximum number of MCPs, volume, and weight a vehicle can handle per day).
- Routing time limit per vehicle.
- Disposal trips (when a vehicle is full, it must go to a disposal facility).
- 

### Conceptual solution:

- Based on the MCPs location, the system divides the map into the collecting area with approximately equal work load (with maximum vehicle capacity and equal fuel consumption).
- Route an optimal path from depart location to the nearest dump in the area that go through all the MCPs in area with least fuel consumption (shortest time travel with shortest path)
-

Diagram:



## 2.3

