CSE-341 PROGRAMMING LANGUAGES
HOMEWORK 4

REPORT

Onur Atasever

210104004087

PART-1

In this program we are expected to write a program which can manage delivery process. There are mainly three deliver person and five objects to deliver (deliver person and objects can be added as many as wanted). The goal of this program is checking specified object if it is on delivery. If it is on delivery, deliver person is printed. If it is not on delivery, each deliver person are checked to determine if they are available for this delivery process.

Determining if a deliver person is available, mainly checks three features. The weight of object, time and if the deliver person on delivery. If the deliver person is already on delivery, can not deliver specified object. If the weight of object is more than deliver person's carry, deliver person can not deliver object. And also each deliver person has work hours to work in a day (all of them are 4 and multiple 4). For this delivery process first of all deliver must go pick up place and then deliver specified object to specified drop off location. Each time program finds shortest path to find minimum time. If this total minimum time is more than work hours that deliver person can work, deliver person can not deliver specified object. If these conditions are satisfied, deliver person can deliver specified object.

Each object to deliver has a unique ID.

Fifth object is on delivery and The deliver person who has ID 1 is delivering.

```
6 ?- check_delivery_status(5).
Object 5 is on delivery. Delivered by person 1.
true
```

Fourth object is not on delivery and it finds only one available deliver person.

```
5 ?- check_delivery_status(4).
Person 2 can make the delivery.
Path from current deliver person location to pick-up place: [socialSciencesBld,library,adminOffice]
Path from pick-up place to drop-off place: [adminOffice,engineeringBld,lectureHallA]
Total Time: 8

true.
```

Third object is not on delivery and it finds two available deliver person.

```
4 ?- check_delivery_status(3).
Person 2 can make the delivery.
Path from current deliver person location to pick-up place: [socialSciencesBld]
Path from pick-up place to drop-off place: [socialSciencesBld,cafeteria]
Total Time: 2

Person 3 can make the delivery.
Path from current deliver person location to pick-up place: [instituteX,socialSciencesBld]
Path from pick-up place to drop-off place: [socialSciencesBld,cafeteria]
Total Time: 10

true.
```

Second object is not on delivery and it finds only one available deliver person.

```
3 ?- check_delivery_status(2).
Person 2 can make the delivery.
Path from current deliver person location to pick-up place: [socialSciencesBld,instituteX]
Path from pick-up place to drop-off place: [instituteX,socialSciencesBld,library,instituteY]
Total Time: 21

true.
```

First object is not on delivery and it finds two available deliver person.

```
2 ?- check_delivery_status(1).
Person 2 can make the delivery.
Path from current deliver person location to pick-up place: [socialSciencesBld,library,adminOffice]
Path from pick-up place to drop-off place: [adminOffice,library]
Total Time: 4

Person 3 can make the delivery.
Path from current deliver person location to pick-up place: [instituteX,socialSciencesBld,library,adminOffice]
Path from pick-up place to drop-off place: [adminOffice,library]
Total Time: 12

true.
```

PART-2

There is a data set and according to this dataset there is a decision tree generated by Python. According to this decision tree Prolog code is implemented. Program is able to respond to queries such that: classify(4.9,2.4,3.3,1.0).