

GTU Department of Computer Engineering

CSE 341 – 2023

Homework 4 Report

Bariş Batuhan Bolat

210104004029

1. PART1

Delivery Personnels

- Delivery personnel with **PersonID**, **Capacity to Carry**, **Work Hours**, **Current Job**, and **Current Location**

```
deliveryPerson(PersonID, Capacity, WorkHours, CurrentJob, CurrentLocation).
```

```
deliveryPerson(1, 10, 8, none, 'Admin Office').  
deliveryPerson(2, 15, 12, none, 'Library').  
deliveryPerson(3, 20, 16, job5, 'Engineering Bld.').
```

Places

- Places with **UniqueID**

```
place(Place).
```

```
place('Admin Office').  
place('Engineering Bld.').  
place('Lecture Hall A').  
place('Library').  
place('Institute Y').  
place('Cafeteria').  
place('Social Sciences Bld.').  
place('Institute X').
```

Objects

- Objects **ObjectID** , **Weight** , **PickupPlace** , **DropoffPlace** , **Urgency** , delivery **PersonID** if in transit

```
object(ObjectID, Weight, PickupPlace, DropoffPlace, Urgency, PersonID).
```

```
object(job1 ,5 , 'Admin Office' , 'Library', medium ,none).  
object(job2 ,7 , 'Engineering Bld.' , 'Cafeteria', low ,none).  
object(job3 ,10, 'Lecture Hall A', 'Social Sciences Bld.', high ,none).  
object(job4 ,12, 'Library', 'Institute X', medium ,none).  
object(job5 ,8 , 'Cafeteria', 'Engineering Bld.', low ,(3)).
```

Routes

- Map **Routes** between places and time to travel

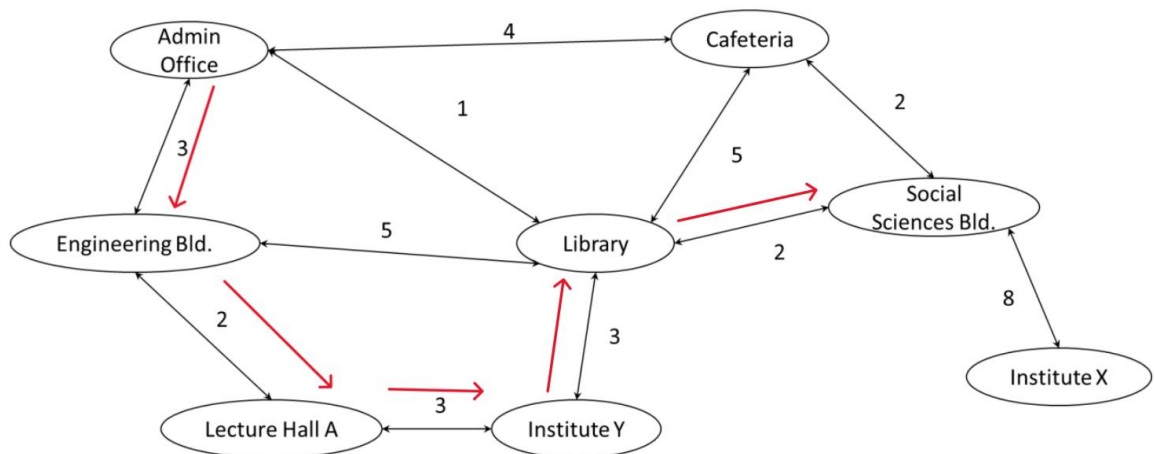
```
route(PickupPlace, DropoffPlace, Time).
```

```
route('Admin Office', 'Engineering Bld.', 3).
route('Engineering Bld.', 'Admin Office', 3).
route('Admin Office', 'Library', 1).
route('Library', 'Admin Office', 1).
route('Admin Office', 'Cafeteria', 4).
route('Cafeteria', 'Admin Office', 4).
route('Engineering Bld.', 'Lecture Hall A', 2).
route('Lecture Hall A', 'Engineering Bld.', 2).
route('Engineering Bld.', 'Library', 5).
route('Library', 'Engineering Bld.', 5).
route('Lecture Hall A', 'Institute Y', 3).
route('Institute Y', 'Lecture Hall A', 3).
route('Institute Y', 'Library', 3).
route('Library', 'Institute Y', 3).
route('Library', 'Cafeteria', 5).
route('Cafeteria', 'Library', 5).
route('Library', 'Social Sciences Bld.', 2).
route('Social Sciences Bld.', 'Library', 2).
route('Cafeteria', 'Social Sciences Bld.', 2).
route('Social Sciences Bld.', 'Cafeteria', 2).
route('Social Sciences Bld.', 'Institute X', 8).
route('Institute X', 'Social Sciences Bld.', 8).
```

Test Cases

- Test Case 1

```
?- canDeliver(1, job3).  
Delivery person with ID: 1 can deliver the object in 13 hours.  
true .
```



- Test Case 2

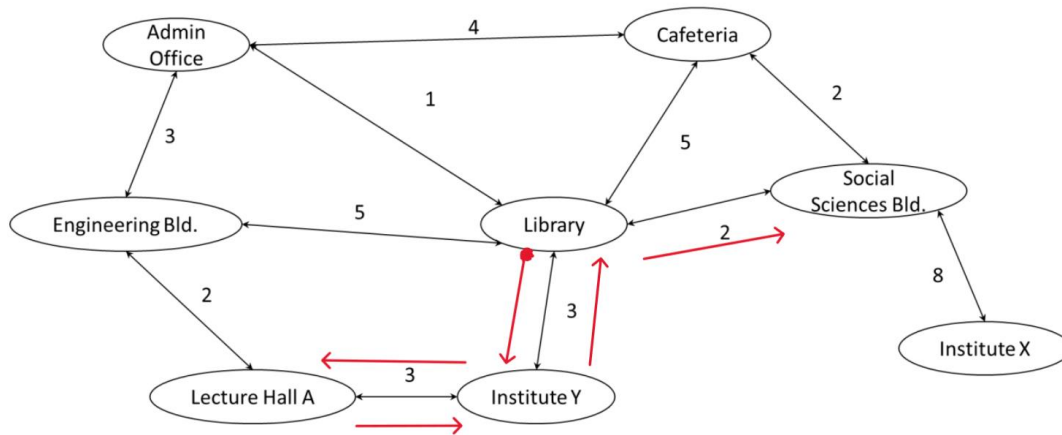
```
?- canDeliver(2, job6).  
false.
```

- Test Case 3(In Transit)

```
?- canDeliver(3, job5).  
Delivery person 3 is already delivering the object.  
true .
```

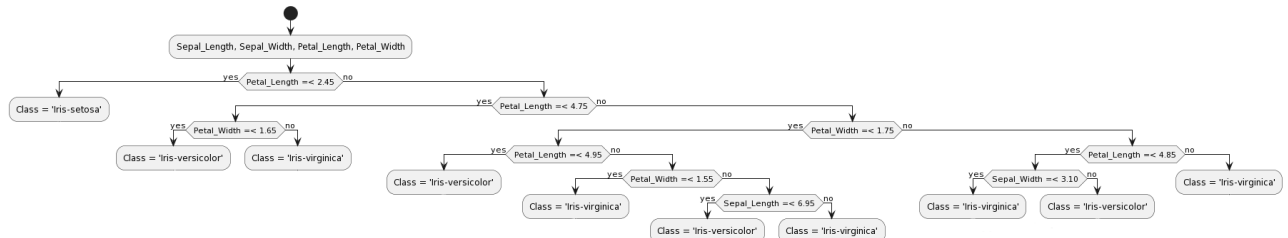
- **Test Case 4**

```
?- canDeliver(2, job3).
Delivery person with ID: 2 can deliver the object in 14 hours.
true .
```



2. Part 2

- **Tree Diagram**



- **Test Case 1**

```
?- classify(5.1, 3.5, 1.4, 0.2).
Yes : Iris-setosa
true .
```

- **Test Case 2**

```
?- classify(6.7, 3.1, 4.4, 1.4).
Yes : Iris-versicolor
true .
```

- Test Case 3

```
?- classify(7.7, 2.6, 6.9, 2.3).  
Yes : Iris-virginica  
true.
```