Programming Paradigms: Miniproject Three

Lukas Rønsholt
20166653
lransh16@student.aau.dk

The program is able to plan routes between two towns in a map, find the fastest and shortest. The map is represented by roads defined as:

```
1 road(A,B,road type,length,time).
```

Travelers are defined by an identifier and a list of vehicle types, and vehicle types can be either one of these, *car, taxi, bus, bicycle*.

The path rule is defined such that the same path rule can be used to solve all the queries, this is primarily done with the connection rule *can_travel* which will check that there is a road between two cites and that the road is valid given a condition. It will then find the length, time and what vehicles that can use the road, so that it can be passed to the path rule. This way all information to the queries can be obtained with the path rule.

The following queries are implemented into the program:

- Find a route between two towns that a given person can travel by.
- Find a route that passes though towns from a given list.
- Find a route that can be used a list of travellers.
- Find a route that uses only certain road conditions.
- Find the shortest route between two given towns.