README.md - Grip

1) Finding Relationship and Gender:

To find relationships first run:

```
$ swipl -s Q1.pl
```

UNCLE:

Use this predicate to check if X is the uncle of Y or not.

```
?- uncle(X, Y).
```

E.g.: `?- uncle(kattappa, avantika).`

HALFSISTER:

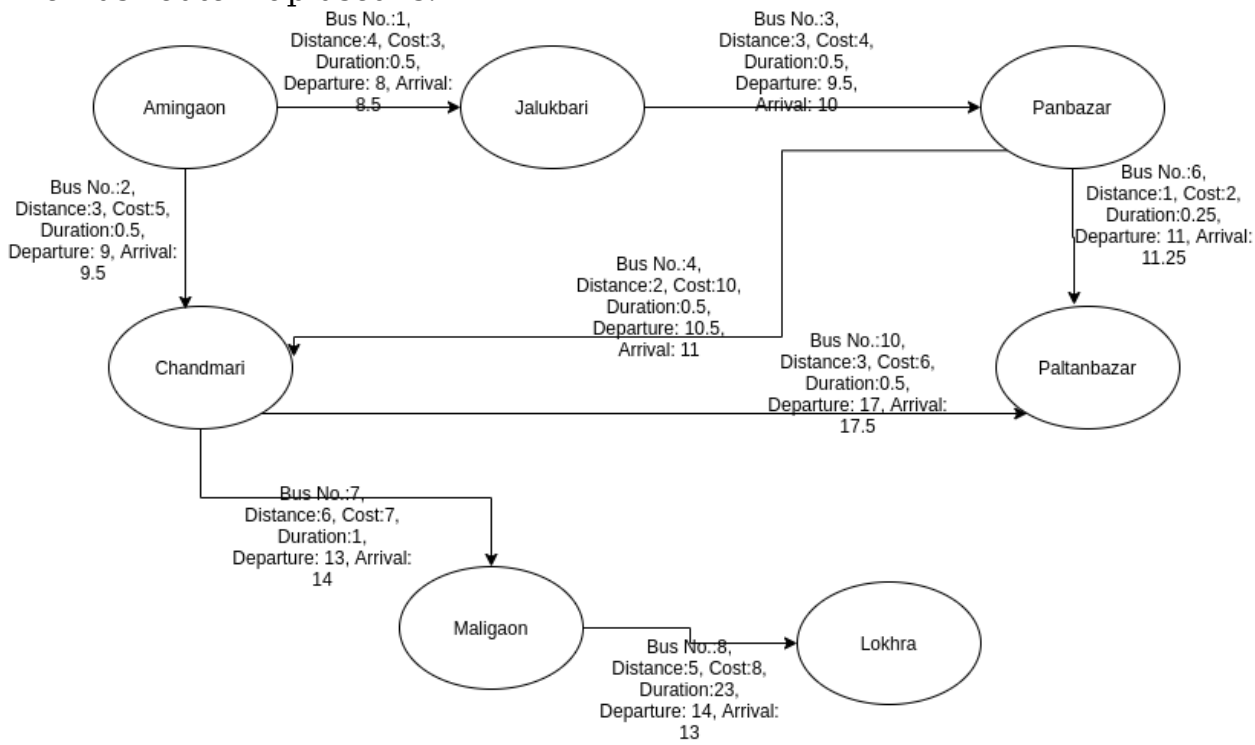
Use this predicate to check if X is the halfsister of Y or not.

```
?- halfsister(X, Y).
```

E.g.: `?- halfsister(manisha, avantika).`

2) Bus Travel Planner:

The Bus route map used is:



To find optimum path between two places (X and Y) use:

```
$ swipl -s Q2.pl

?- route(X, Y).
```

E.g.: `?- route('Amigaon', 'Paltanbazar').`

Have considered waiting time so in above example for optimum time you will obtain Amingaon-> Jalukbari -> Panbazar -> Paltanbazar with time 3.25hrs because Amingaon->Chandmari->Paltanbazar takes 8.5 hrs as you have to wait for bus 4 after reaching chandmari.

Have also considered bus arriving next day i.e. when arrival time is less than departure time e.g. from Maligaon to Lokhra you will obtain 23hrs duration.

3) Prisoner Escape Problem:

To run the program use:

```
$ swipl -s Q3.pl
```

A) All paths:

To find all the paths for a prisoner to become free use:

```
?- allPaths.
```

It will output the index and the path and indexing is 1 based so there are a total of 57280 paths.

B) Optimal path:

To find the optimal path:

```
?- optimal.
```

C) Validity:

To check the validity of given path X (given as a list of gates) use:

```
?- valid(X).
```

E.g.: `?- valid(['G1', 'G6', 'G8', 'G9', 'G8', 'G7', 'G10', 'G15', 'G13', 'G14', 'G18', 'G17']).`