CSE341 – Programming Languages
Homework #4

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Part 1

Here I define my course 341, 312, 462, 321, 322 and the classes room z11, z06, z10 after that I define the time with courseWhen

```
courseWhere(341, z11).
courseWhere(312, z06).
courseWhere(462, z10).
courseWhere(321, z11).
courseWhere(322, z11).

courseWhen(341, 10).
courseWhen(312, 9).
courseWhen(462, 8).
courseWhen(321, 15).
courseWhen(322, 15).

courseCapacity(341, 80).
courseCapacity(312, 80).
courseCapacity(462, 40).
courseCapacity(321, 70).
```

course capacity is indicate the capacity of course.

```
instructorGiveCourses(1, 341).
instructorGiveCourses(2, 312).
instructorGiveCourses(3, 462).
instructorGiveCourses(4, 321).

instructorSmartBoard(1).
instructorSmartBoard(2).
instructorSmartBoard(4).

instructorProjector(1).
instructorProjector(2).
instructorProjector(4).
```

There is 4 instructor 1, 2, 3, 4

instructorSmartBoard means which instructors want smart board and instructorProjector means which instructor wants projector.

```
roomCapacity(z11, 100).
roomCapacity(z06, 100).
roomCapacity(z10, 60).

roomHandicapped(z11).

projectorRoom(z11).
projectorRoom(z06).

smartBoardRoom(z11).
smartBoardRoom(z06).
```

roomcapacity indicates the capacity of corresponding room, roomHandicapped means which rooms are available for handicapped students.
ProjectorRoom and smartBoardRoom indicates which room has projector and smartboard

```
enroll(a, 341).
enroll(a, 312).
enroll(a, 462).
enroll(a, 321).
enroll(b, 341).
enroll(b, 312).
enroll(c, 341).
enroll(d, 341).
enroll(e, 341).
enroll(e, 462).
enroll(e, 312).
enroll(f, 341).
enroll(f, 321).
enroll(g, 341).

handicappedStu(g).
```

letters are represent students and the enrolled classes

Here is conflict example

```
?- conflict(341, 321).
false.

?- conflict(322, 321).
true.
```

Check which room can be assign to given class.

```
?- checkroomClass(462, X).
X = z11 ;
X = z06 ;
X = z10.

?- checkroomClass(312, X).
X = z11 ;
X = z06 ;
false.
```

Check which room can be assign to which class

```
?- checkroomClass(A, B).
A = 341,
B = z11 ;
A = 312,
B = z11 ;
A = 462,
B = z11 ;
A = 321,
B = z11 ;
A = 341,
B = z06 ;
A = 312,
B = z06 ;
A = 462,
B = z06 ;
A = 321,
B = z06 ;
A = 462,
B = z10 ;
false.

?-
```

Check whether a student can be enrolled to a given class.

```
?- checkStudent(a, 462).
true.

?- checkStudent(g, 321).
true.

?- checkStudent(g, 462).
false.

?-
```

Check which classes a student can be assigned.

```
?- checkStudent(g, X).
X = 341 ;
X = 321 ;
X = 322.

?- checkStudent(a, X).
X = 341 ;
X = 312 ;
X = 462 ;
X = 321 ;
X = 322.

?-
```

Part 2

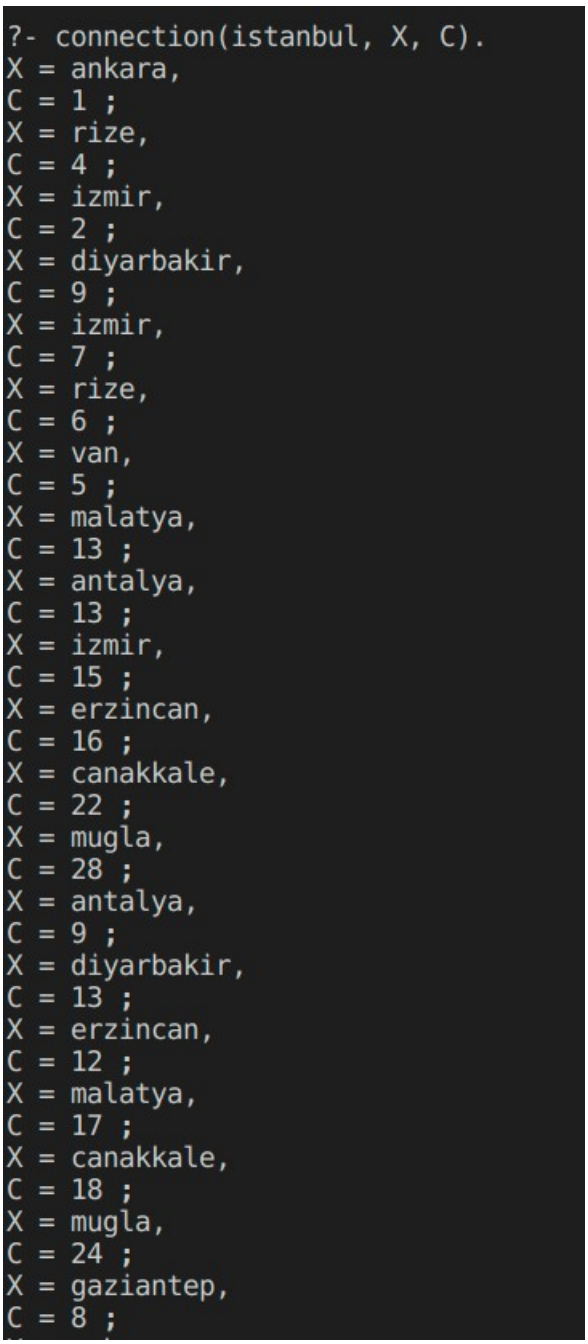
As it asked I add 2 schedule

```
schedule(diyarbakir, malatya, 4).
schedule(canakkale, mugla, 6).
```

This show all possible routes cost

```
?- connection(malatya, ankara, C).
C = 12 ;
C = 16 ;
C = 13 ;
C = 21 ;
false.

?-
```



The output is continue but for the sake of photo I cut it, it shows all cities and costs from Istanbul as you can see from input.