

Part 1: All tasks completed as per my understanding.

✓ Add New Student:

First returns false because it tries to save the existing student. Then adds student number 11 and it's true.

```
% c:/Users/TOPRAK/Desktop/plhom
?- printstudent(X) .
X = 1 ,
X = 2 ,
X = 3 ,
X = 4 ,
X = 5 ,
X = 6 ,
X = 7 ,
X = 8 ,
X = 9 ,
X = 10 .

?- addStudent(10,cse341,no) .
false.

?- addStudent(11,cse341,no) .
true.

?- printstudent(X) .
X = 1 ,
X = 2 ,
X = 3 ,
X = 4 ,
X = 5 ,
X = 6 ,
X = 7 ,
X = 8 ,
X = 9 ,
X = 10 ,
X = 11 .
```

✓ Add Course:

```
% c:/Users/TOPRAK/Desktop/plhomework3/part1.pl compi:
?- printcourse(X) .
X = cse341 ,
X = cse400 ,
X = cse331 ,
X = cse470 .

?- addCourse(cse341,yakupgenc,4,7,8,a1,smartboard) .
false.

?- addCourse(cse500,yakupgenc,4,7,8,a3,smartboard) .
true.

?- printcourse(X) .
X = cse341 ,
X = cse400 ,
X = cse331 ,
X = cse470 ,
X = cse500 .

?- ;
```

✓ Add Room:

```
?- printRoom(X) .  
X = a1 ;  
X = a2 ;  
X = a3 ;  
X = a4 ;  
X = a5 .  
  
?- addRoom(a5,3,projector) .  
false.  
  
?- addRoom(a6,3,projector) .  
true.  
  
?- printRoom(X) .  
X = a1 ;  
X = a2 ;  
X = a3 ;  
X = a4 ;  
X = a5 ;  
X = a6 .  
  
?- ■
```

✓ Check whether there is any scheduling conflict.

It checks whether there is a conflict between the two courses.--> Conflict(Course1,Course2).

There are two conflicts here: cse341 and cse400

```
course(cse341,genc,10,8,9,a1,smartboard) .  
course(cse400,hasaricelebi,10,8,9,a2,smartboard) .  
course(cse331,bayrakci,10,11,13,a3,handi) .  
course(cse470,ibrahims,10,9,10,a4,projector) .
```

Output:

```
?- conflicts(cse341,cse400) .  
true.  
  
?- conflicts(cse341,cse331) .  
false.  
  
?- _
```

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

It checks whether the class is special for a handicapped student.

1 id is handicapped.

```
student(1,[cse341,cse470],yes) .  
student(2,[cse341,cse331],no) .  
student(3,[cse400,cse470],no)
```

A3 room is a handicapped room.

```
room(a3,10,[smartboard,projector,handi]) .
```

Cse331 course is a handicapped course.

```
course(cse331,bayrakci,10,11,13,a3,handi) .
```

Output:

```
% c:/Users/TOFRAK/Desktop
?- enroll(2,cse341) .
true .

?- enroll(1,cse341) .
false .

?- enroll(1,cse331) .
true .

?- 
```

- ✓ Check which room can be assigned to which classes.
Looks after course equipment and classroom equipment.

```
?- roomAssignClass(a1,X) .
X = cse341 ;
X = cse400 ;
X = cse470 .

?- roomAssignClass(a2,X) .
X = cse331 ;
X = cse470 .

?- roomAssignClass(a3,X) .
X = cse341 ;
X = cse400 ;
X = cse331 ;
X = cse470 ;
- .
```

- ✓ Check which room can be assigned to a given class.
Classrooms that have the equipment the course needs.

```
%room(id,capacity,equipments)

room(a1,10,[smartboard,projector]) .
room(a2,10,[handi,projector]) .
room(a3,10,[smartboard,projector,handi]) .
room(a4,10,[handi,smartboard]) .
room(a5,2,[smartboard]) .

%course
%course(id,instr,capacity,starttime,finaltime,room)

course(cse341,genc,10,8,9,a1,smartboard) .
course(cse400,hasaricelebi,10,8,9,a2,smartboard) .
course(cse331,bayrakci,10,11,13,a3,handi) .
course(cse470,ibrahims,10,9,10,a4,projector) .
```

Output:

```
?- assignroom(cse400,X) .
X = a1 ;
X = a3 ;
X = a4 ;
X = a5 .

?- assignroom(cse331,X) .
X = a2 ;
X = a3 ;
X = a4 ;
```

- ✓ Check which classes a student can be assigned.
Which students can take which course?

Output: 1 id is handicapped. And only the cse331 class is a handicapped class.

```
?- assignStudent(2,X) .  
X = cse341 ;  
X = cse400 ;  
X = cse331 ;  
X = cse470 ;  
false.  
  
?- assignStudent(1,X) .  
X = cse331 ;  
false.  
  
?- ■
```

Part 2 : All task is completed.

```
% c:/Users/TOFRAK/Desktop/plhc  
?- flight(istanbul,ankara,X) .  
X = 1 .  
  
?- flight(istanbul,rize,X) .  
X = 4 .  
  
?- flight(izmir,antalya,X) .  
X = 2 .
```

```

?- route(canakkale,X,C) .
X = ersincan,
C = 6 ,
X = antalya,
C = 9 ,
X = izmir,
C = 11 ,
X = diyarbakir,
C = 13 ,
X = ankara,
C = 17 ,
X = istanbul,
C = 13 ,
X = istanbul,
C = 18 ,
X = rise,
C = 22 ,
X = diyarbakir,
C = 25 ,
X = van,
C = 21 ,
X = rise,
C = 22 ,
X = istanbul,
C = 26 ,
X = gasiantep,
C = 24 ,
X = ankara,
C = 14 ,
X = rise,
C = 17 ,
X = rise,
C = 19 ,
X = diyarbakir,
C = 22 ,
X = van,
C = 18 ,
X = gasiantep,
C = 21 ,
X = ankara,
C = 22 ,
X = diyarbakir,
C = 30 ,
X = van,
C = 26 ,
X = gasiantep,
C = 29 ,
X = ankara,
C = 21 ,
X = istanbul,
C = 22 ,
X = rise,
C = 26 ,
X = izmir,
C = 27 ,
X = van,

```

```

X = van,
C = 25 ,
X = izmir,
C = 24 ,
X = rise,
C = 26 ,
X = istanbul,
C = 30 ,
X = izmir,
C = 32 ,
X = istanbul,
C = 29 ,
X = rise,
C = 33 ,
X = gasiantep,
C = 28 ,
false.

```