

## CSE341 HW4

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P1:

Already existed variables:

Course				
ID	Instructor	Capacity	Hour	Room
CSE341	YG	10	4	Z06
CSE102	YG	15	4	Z06
CSE342	YSA	6	3	Z11

Rooms:

	Capacity	Equipment's
Z06:	10	projector, smartboard, handicapped
Z11:	15	projector, smartboard
Z10:	6	smartboard, handicapped

Students:

	Taken Courses	Handicapped
S1:	cse341	no
S2:	cse342, cse102	no
S3:	cse341, cse342	handicapped

Occupancy:

Time/Class	Z06	Z11	Z10
8	cse341		
9	cse341		
10	cse341/cse102	cse342	
11	cse102	cse342	
12		cse102/ cse342	
13	cse341	cse102	

Add new course:

```
?- course(cse101,Instructor,Capacity,Students,Hour,Room,Equipments).  
false.  
  
?- add_course(cse101,YSA,20,[s1,s2],4,z23,[smartboard]).  
true.  
  
?- course(cse101,Instructor,Capacity,Students,Hour,Room,Equipments).  
Capacity = 20,  
Students = [s1, s2],  
Hour = 4,  
Room = z23,  
Equipments = [smartboard].
```

Add new student:

```
?- student(s4,Courses,Handicapped).  
false.  
  
?- add_student(s4,[cse101,cse341],no).  
true.  
  
?- student(s4,Courses,Handicapped).  
Courses = [cse101, cse341],  
Handicapped = no.
```

Add new room:

```
?- room(z23,Capacity,Equipments).  
false.  
  
?- add_room(z23,50,[smartboard,projector]).  
true.  
  
?- room(z23,Capacity,Equipments).  
Capacity = 50,  
Equipments = [smartboard, projector].
```

Check whether there is any scheduling conflict:

<pre>?- conflict(Course1, Course2). No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; Conflict at room: z06 At hour: 10 Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ; No conflict Course1 = cse341, Course2 = cse102 ;</pre>	<pre>No conflict Course1 = cse102, Course2 = cse342 ; No conflict Course1 = cse102, Course2 = cse342 ; Conflict at room: z11 At hour: 12 Course1 = cse102, Course2 = cse342 ; No conflict Course1 = cse102, Course2 = cse342 ; No conflict Course1 = cse102, Course2 = cse342 ; No conflict Course1 = cse102, Course2 = cse342 ; No conflict Course1 = cse102, Course2 = cse342 ;</pre>
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Check which room can be assigned to a given class:

```
?- assign(Course).  
Can assign to room: z06  
Course = cse341 ;  
Can assign to room: z11  
Course = cse341 ;  
Can assign to room: NONE  
Course = cse341 ;  
Can assign to room: z11  
Course = cse102 ;  
Can assign to room: z06  
Course = cse342 ;  
Can assign to room: z11  
Course = cse342 ;  
Can assign to room: NONE  
Course = cse342.
```

Check which room can be assigned to a given class:

```
?- print_rooms.  
cse341 Can assign to room: z06  
cse102 Can assign to room: z11  
cse342 Can assign to room: z06  
true .
```

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

```
?- student_class(Student, Course).  
Student = s1,  
Course = cse341 ;  
Student = s1,  
Course = cse102 ;  
Student = s1,  
Course = cse342 ;  
Student = s2,  
Course = cse341 ;  
Student = s2,  
Course = cse102 ;  
Student = s2,  
Course = cse342 ;  
Student = s3,  
Course = cse341 ;  
Student = s3,  
Course = cse342.  
  
?- student_class(s3, cse102).  
false.
```

Check which classes a student can be assigned:

```
?- student_check(s1).  
s1 : [cse341,cse102,cse342]  
true.  
  
?- student_check(s2).  
s2 : [cse341,cse102,cse342]  
true.  
  
?- student_check(s3).  
s3 : [cse341,cse342]  
true.
```

P2:

2 more connections added between erzincan-izmir and van-rize.

```
?- connection(canakkale,Y,C).  
Y = erzincan,  
C = 6 ;  
Y = antalya,  
C = 9 ;
```

```
?- connection(erzincan,izmir,C).  
C = 5 ;  
C = 5 ;  
C = 21 ;  
C = 26 ;  
C = 29 ;  
C = 18 ;  
C = 11 ;  
C = 17 ;  
C = 17 ;  
C = 33 ;  
C = 38 ;  
C = 41 ;  
C = 30 ;  
false.
```