به نام خدا تكليف اول آز ديتابيس حديث غفورى 9825413

سوال1

ساخت جدول Departmenst

```
create table Departments(
     Name varchar(60) not null,
     ID char (5) primary key,
     Budget numeric(12,2),
     Category varchar(15)
     --create table Teachers(
177 % ▼ ◀

    Messages
```

Commands completed successfully.

Completion time: 2022-02-28T14:46:34.5643018+03:30

ساخت جدول Students

```
create table Students(
FirstName varchar(20) not null,
LastName varchar(30) not null,
StudentNumber char(7) primary key,
BirthYear int,
DepartmentID char(5),
AdvisorID char(7),
foreign key (DepartmentID) references Departments(ID),
foreign key(AdvisorID) references Teachers(ID)
);

// %

Messages
Commands completed successfully.
Completion time: 2022-02-28T14:31:14.2655758+03:30
```

```
insert into Departments values(
   'Electrical & Computer Engineering Department',
   'ECE',
   1200000.00,
   'Engineering');
   insert into Departments values(
   'Physics Department',
   'P',
   1000000.00,
   'Science');
   insert into Departments values(
   'Mechanical Engineering Department',
   'ME',
   1100000.00,
   'Engineering');
0% ▼ ∢
Messages
 (1 row affected)
 (1 row affected)
 (1 row affected)
 Completion time: 2022-02-28T14:48:08.7357695+03:30
                         --1000000.00,
                         --'Science');
                         --insert into Departments values(
                         --'Mechanical Engineering Department',
                         --'ME',
                         --1100000.00,
                         --'Engineering');
                         select * from Departments;
                   5 % ▼ ◀ ■
                   Results Messages
                                                   Budget
                                                           Category
                      ME 1100000.00 Engineering
                      Mechanical Engineering Department
                      Physics Department
                                                   1000000.00 Science
```

```
insert into Teachers values('Hosein','Yavari',1111111,1358,'ECE',11000);
     insert into Teachers values('Fatemeh','Mousavi',1111112,1357,'ECE',14000);
      insert into Teachers values('Reza','Hasanpour',1111113,1358,'P',10000);
      insert into Teachers values('Mohammad','Kazemi',1111114,1360,'ME',13000);
146 %

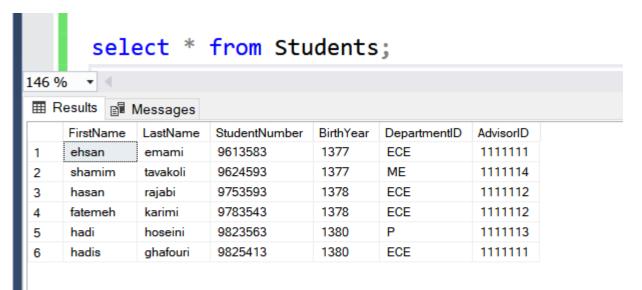
    Messages

   (1 row affected)
   (1 row affected)
   (1 row affected)
   (1 row affected)
   Completion time: 2022-02-28T14:57:45.5544965+03:30
       --insert into Teachers values('Hosein', 'Yavari', 1111111, 1358, 'ECE', 11000);
       --insert into Teachers values('Fatemeh', 'Mousavi', 1111112, 1357, 'ECE', 14000);
       --insert into Teachers values('Reza', 'Hasanpour', 1111113, 1358, 'P', 10000);
       --insert into Teachers values('Mohammad', 'Kazemi', 1111114, 1360, 'ME', 13000);
      select * from Teachers ;
      --insert into Students values('hadis','ghafouri',9825413,1380,'ECE',1111111);
165 % 🔻 🕯 💮
FristName
          LastName ID
                         BirthYear DepartmentID Salary
                  1111111 1358
                                        11000.00
                               ECE
  Hosein
         Yavari
          Mousavi 1111111 1358
   Fatemeh
                               ECE

        Reza
        Hasanpour
        1111113
        1358
        P
        10000.00

        Mohammad
        Kazemi
        1111114
        1360
        ME
        13000.00
```

نمایش جدول Students



اضافه كردن فيلد تعداد واحد ها:

```
alter table Students add totCred numeric(3,0) not null default (0);

--alter table Students drop column totCred:

--alter table Students drop column totCred
```

select * from Students;

165 % ▼ ◀ ■ Results ■ Messages
FirstName LastName StudentNumber BirthYear DepartmentID AdvisorID totCred
1 ehsan emami 9613583 1377 ECE 1111111 0
2 shamim tavakoli 9624593 1377 ME 11111114 0
3 hasan rajabi 9753593 1378 ECE 1111112 0
4 fatemeh karimi 9783543 1378 ECE 11111112 0
5 hadi hoseini 9823563 1380 P 11111113 0
6 hadis ghafouri 9825413 1380 ECE 11111111 0

```
create table Courses(
    ID varchar(10) not null primary key,
    Title varchar(50) not null,
    Credits numeric(2,0),
    DepartmentID char(5),
    foreign key (DepartmentID) references Departments(ID)
    );
50 % ▼ <
Messages
 Commands completed successfully.
 Completion time: 2022-02-28T15:31:55.4411344+03:30
                                            ساخت جدول Available_Courses
     create table Available Courses(
     ID varchar(10) not null primary key,
     CourseID varchar(10),
     Semester varchar(10) check(Semester in ('fall', 'spring')),
     Year numeric(4,0),
     TeacherID char(7),
     foreign key (CourseID) references Courses(ID),
     foreign key (TeacherID) references Teachers(ID)
     );
150 %

    Messages
```

Commands completed successfully.

Completion time: 2022-02-28T15:54:51.0174058+03:30

ساخت جدول Prerequisites

```
(2, 'Machine', 3, 'ME'),
       (3, 'AP', 3, 'ECE'),
       (4,'Machine Learning', 4,'ECE');
165 % ▼ ◀ ■

    Messages

   (4 rows affected)
   Completion time: 2022-02-28T17:49:41.0393255+03:30
      -- INSERT INTO Courses VALUES
      -- (1,'DB', 3, 'ECE'),
      -- (2, 'Machine', 3, 'ME'),
      -- (3,'AP', 3, 'ECE'),
     -- (4, 'Machine Learning', 4, 'ECE');
     select * from Courses;
ID Title
1 DB
              Credits DepartmentID
                   ECE
  2 Machine 3
3 AP 3
                   ME
                   ECE
  4 Machine Learning 4
                  ECE
```

INSERT INTO Courses VALUES

(1, 'DB', 3, 'ECE'),

```
INSERT INTO Available Courses VALUES
        (1,1,'spring', 1399, 1111111),
        (2,2, 'fall', 1398, 1111114),
       (3,3,'fall', 1400,1111111 ),
      (4,4,'spring',1399,1111112);
165 % ▼ ◀ □

    Messages

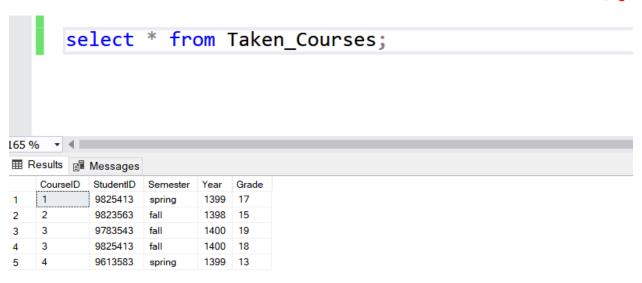
   (4 rows affected)
   Completion time: 2022-02-28T17:57:50.2838908+03:30
      --INSERT INTO Available_Courses VALUES
      -- (1,1,'spring', 1399, 1111111),
      -- (2,2,'fall', 1398, 11111114),
      -- (3,3,'fall', 1400,1111111 ),
      -- (4,4,'spring',1399,1111112);
      select * from Available Courses;
165 % ▼ 4 |
ID CourselD Semester Year TeacherID
                1399 1111111
   2 fall
3 3 fall
4 4
                1398 11111114
                 1400 11111111
        spring
                1399 11111112
```

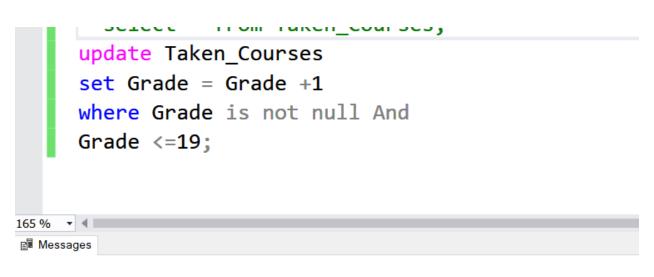
```
INSERT INTO Taken Courses VALUES
      (3,9825413, 'fall',1400,18),
     (2,9823563, 'fall',1398,15),
      (1,9825413, 'spring',1399,17),
      (3,9783543, 'fall',1400,19),
      (4,9613583, 'spring',1399,13);
Messages
 (5 rows affected)
 Completion time: 2022-03-01T11:20:58.0872364+03:30
      --INSERT INTO Taken Courses VALUES
      -- (3,9825413, 'fall',1400,18),
      -- (2,9823563, 'fall',1398,15),
      -- (1,9825413, 'spring',1399,17),
      -- (3,9783543, 'fall',1400,19),
      -- (4,9613583, 'spring',1399,13);
      select * from Taken_Courses;
165 % ▼ ◀ ■
 CourseID StudentID Semester Year Grade
      9825413 spring
                    1399 17
                    1398 15
         9823563
              fall
   3
         9783543 fall
                    1400 19
   3
         9825413 fall
                    1400 18
         9613583 spring
```

```
INSERT INTO Prerequisites VALUES
(1, 3),
(4, 3);

Messages
(2 rows affected)
Completion time: 2022-02-28T18:00:30.4457055+03:30
```

پیدا کردن مشخصات دانشکده ی دانشجویی که شماره ایدی به خصوصی دارد (به جای 123 عدد 9825413 درنظر گرفته شده)

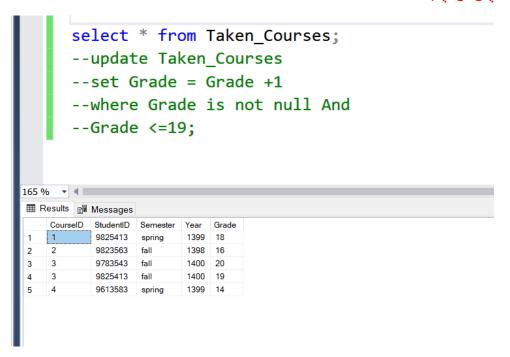




(5 rows affected)

Completion time: 2022-03-01T11:39:59.5825075+03:30

یس از ایدیت:



دانشجویانی که درس دیتابیس را اخذنکرده اند:

```
select *
      from Students s
      where s.StudentNumber not in(
      select StudentNumber
      from Students
      inner join Taken_Courses t
      on(s.StudentNumber = t.StudentID)
      inner join Courses c
      on(c.ID = t.CourseID)
      where c.Title = 'DB'
FirstName LastName StudentNumber BirthYear DepartmentID AdvisorID totCred emami 9613583 1377 ECE 11111111 0
                 9624593
                           1377
                                 ME
                                          1111114 0
                           1378
                                 ECE
                                          1111112 0
          rajabi
   hasan
                 9783543
                          1378
                                 ECE
                                          1111112 0
   fatemeh
          karimi
                 9823563
   hadi
          hoseini
                          1380
                                P
                                         1111113 0
```