

# Exercise 1 :

a)

```
CREATE TABLE LECTURER (  
    StaffNo VARCHAR(8) NOT NULL,  
    Title TEXT NOT NULL,  
    FName VARCHAR(20) NOT NULL,  
    LName VARCHAR(20) NOT NULL,  
    Address TEXT NOT NULL,  
    Salary INT NOT NULL,  
    ResearchArea VARCHAR(100) )  
PRIMARY KEY (StaffNO)  
CONSTRAINT lecturer_fk FOREIGN KEY (StaffNO)  
REFERENCES LECTURE (StaffNO);
```

```
CREATE TABLE SUBJECT (  
    SubjectCode VARCHAR(8) NOT NULL,  
    Name VARCHAR(20) NOT NULL,  
    Prerequisite VARCHAR(50) NOT NULL,  
    Credit TINYINT NOT NULL)  
PRIMARY KEY (SubjectCode)  
Constraint subject_fk FOREIGN KEY (SubjectCode)  
REFERENCES LECTURE (SubjectCode);
```

```
CREATE TABLE LECTURE (  
    LectureCode VARCHAR(8) NOT NULL,  
    SubjectCode VARCHAR(8) NOT NULL,  
    StaffNO VARCHAR(8) NOT NULL,  
    Semester CHAR(5) NOT NULL,  
    Lectday VARCHAR(10) NOT NULL,  
    LecTime TIME NOT NULL)
```

PRIMARY KEY (LectureCode)  
CONSTRAINT lecture\_fk FOREIGN KEY (LectureCode)  
REFERENCES STUDENT\_ENROLMENT (LectureCode);

**b)**

```
SELECT *  
FROM STUDENT  
WHERE StudentStatus = 'C'
```

**c)**

```
SELECT *  
FROM LECTURE  
WHERE LectDay = 'Monday'
```

**d)**

```
SELECT *  
FROM STUDENT,SUBJECT,LECTURE,STUDENT_ENROLLMENT  
WHERE SUBJECT.Name = 'Database' AND  
SUBJECT.SubjectCode = LECTURE.SubjectCode AND  
LECTURE.LectureCode = STUDENT_ENROLLMENT.LectureCode AND  
STUDENT_ENROLLMENT.StudentNO =STUDENT.StudentNO;
```

**e)**

```
SELECT *  
FROM LECTURER  
WHERE ResearchArea LIKE '%NetWork Management%';
```

**f)**

```
SELECT STUDENT.StudentNo, STUDENT.FName,  
STUDENT.LName,STUDENT.DOB,STUDENT.Student.Status  
  
FROM STUDENT,SUBJECT,LECTURE,STUDENT_ENROLLMENT
```

```
WHERE SUBJECT.Name = 'Database' AND  
SUBJECT.SubjectCode = LECTURE.SubjectCode AND  
LECTURE.LectureCode =STUDENT_ENROLLMENT.LectureCode AND  
STUDENT_ENROLLMENT.StudentNO =STUDENT.StudentNO;
```

**g)**

```
SELECT * FROM LECTURER  
WHERE LECTURER.StaffNO <> LECTURE.StaffNO;
```

**h)**

```
SELECT AVG(salary)  
FROM LECTURER
```

**i)**

```
SELECT StaffNO, FName, LName  
FROM LECTURER  
WHERE LECTURER.StaffNO = LECTURE.StaffNO;  
(SELECT COUNT(SubjectCode)FROM LECTURE GROUP BY StaffNO ) >= 3,
```

**j)**

```
Select LECTURE.SubjectCode, LECTURE.StaffNo, COUNT(StudentNO)  
From LECTURE,STUDENT_ENROLLMENT  
WHERE LECTURE.LectureCode = STUDENT_ENROLMENT.LectureCode  
GROUP BY LECTURE.SubjectCode, LECTURE.StaffNO;
```

## **Exercise 2 :**

**a)**

```
CREATE TABLE Hotel (  
    Hotel_No VARCHAR(8) NOT NULL,  
    Name VARCHAR(20) NOT NULL,  
    Address VARCHAR(50) NOT NULL,  
    PRIMARY KEY (Hotel_No) )
```

```
CREATE TABLE Room (  
    Room_No VARCHAR(8) NOT NULL,  
    Hotel_No VARCHAR(8) NOT NULL,  
    Type VARCHAR(8) NOT NULL,  
    Price INT NOT NULL,  
    PRIMARY KEY (Room_No, Hotel_No),  
    CONSTRAINT Room_fk FOREIGN KEY (Hotel_No) );
```

```
CREATE TABLE Booking (  
    Hotel_No VARCHAR(8) NOT NULL,  
    Guest_No VARCHAR(8) NOT NULL,  
    Date_from DATE NOT NULL,  
    Date_To DATE NOT NULL,  
    PRIMARY KEY (Date_From, Hotel_No, Guest_No),  
    CONSTRAINT Booking_fk1 FOREIGN KEY (Hotel_No) REFERENCES  
    Hotel(Hotel_No),  
    CONSTRAINT Booking_fk2 FOREIGN KEY (Guest_No) REFERENCES  
    Guest (Guest_No),  
    CONSTRAINT Booking_fk3 FOREIGN KEY (Room_No) REFERENCES  
    Room (Room_No),  
    CONSTRAINT Booking_check CHECK (Date_From < Date_To) );
```

**b)**

Select \*  
From Hotel  
Where Address = 'London'

**c)**

Select\*  
Where Type = 'Double' or Type = 'Family' and Price < 40.00  
Order by Price ASC

**d)**

SELECT \* FROM Room  
WHERE Date\_From < '2016-06-1' AND Date\_To > '2016-06-30'  
AND Room.Room\_No = Booking.Room\_No;

**e)**

Select AVG(Price)  
From ROOM

**f)**

SELECT COUNT(distinct Guest\_No)  
FROM Booking  
WHERE Date\_From LIKE '2016-08%';

**g)**

SELECT Guest.GuestNo,Guest.Name,Guest.Address

FROM Guest ,Hotel,Booking

WHERE ( SELECT CAST( GETDATE() AS Date ) ) < Booking.Date\_To AND  
( SELECT(CAST( GETDATE() AS Date ) ) > Booking.Date\_From AND  
Guest.Guest\_No =Booking.Guest\_No;  
Guest.Address = Hotel.Address , Hotel.Name = 'Grosvenor'

**h)**

Select AVG(Count(GuestNo))

From (Select Hotel.Name,

Booking.GuestNo,Booking.Date\_From,Booking.Date\_To

From Hotel,Booking

Where Hotel.HotelNo = Booking.HotelNo)

Where Booking.DateFrom < '2016 – 08- 1' and Booking.Date\_To >  
'2016 – 08 -30 '

Groupby Hotel.Name