Solution to Assignment 1

1. Here is a solution to part (b).

```
CREATE TABLE Students
       (SID INT  PRIMARY KEY,
        Name CHAR(15),
        Program CHAR(4),
        Address VARCHAR(30)
        );

CREATE TABLE Courses
       (CID CHAR(8) PRIMARY KEY,
        Name CHAR(15),
        Credits INT(2)
        );

CREATE TABLE Course-Enrolled
       (SID INT,
        CID CHAR(8),
        Grade CHAR(2),
        PRIMARY KEY (SID, CID)
        );
```

   Below is an SQL expression for query Q.

```
SELECT s.SID, s.Name, e.Grade
FROM Students s, Courses c, Course-Enrolled e
WHERE c.Name='Databases' and  c.CID=e.CID and e.SID=s.SID and e.Grade>='B+';
```

2. (c)

   (d)
```
CREATE TABLE Printer
          (
           model CHAR (16) PRIMARY KEY,
           color BOOLEAN,
           type CHAR(10),
           price DECIMAL(6,2)
          );
```

(e)
```
ALTER TABLE Printer DROP column color;
```
or simpler:
```
ALTER TABLE Printer DROP color;
```

(f)
```
ALTER TABLE Laptop ADD column od CHAR(5) DEFAULT 'none';
```
or simpler:
```
ALTER TABLE Laptop ADD od CHAR(5) DEFAULT 'none';
```

3. (a) In the following solution, we assume the movie title 'Titanic' is unique.

```
SELECT starName
FROM   MovieStar, StarsIn
WHERE  starName=name AND movie.Title='Titanic' AND gender ='M';
```

(b)
```
SELECT starName
FROM   Movies, StarsIn
WHERE  studioName ='MGM' AND year=1995 AND
       movieTitle=title AND movieYear=1995;
```

(c)
```
SELECT MovieExec.name AS PresidentName
FROM   MovieExec, Studio
WHERE  studioName ='MGM' AND presC#=cert#;
```

(d) In the following query, we assume that the movie title 'Gone With the Wind' is unique. Since `title` and `year` together form the key attributes of the table Movies, you could use 1939 as the movie year and get the full mark as well. In that case, the `WHERE` clause would have an additional condition like `M1.year=1939`.

```
SELECT M2.title, M2.year
FROM   Movies M1, Movies M2
WHERE  M1.title='Gone With the Wind' AND M2.title<>M1.title AND
       M2.length>M1.length;
```

4. (a)
```
INSERT INTO Product VALUES ('C', 1100, 'pc');
INSERT INTO PC VALUES ('1100', 3.2, 1024, 180, 2499);
```

(c)
```
DELETE FROM PC WHERE hd<100;
```

(e)
```
UPDATE Product set maker='A' WHERE maker='B';
```

(f)
```
UPDATE PC set ram=ram*2, hd=hd+60;
```