

LAB-5

```
/*Q1*/
```

```
DROP DATABASE IF EXISTS Graph;
CREATE DATABASE Graph;
USE Graph;
CREATE TABLE nodes(
  node_name VARCHAR(2),
  x INT NOT NULL,
  y INT NOT NULL,
  CONSTRAINT NODE_ID PRIMARY KEY(x,y)
);
```

```
/*Q1 a)*/
```

```
INSERT INTO nodes(node_name,X,Y)
VALUES('a',12,14),('b',5,1),('c',13,14),('d',11,14),('e',5,5),('f',12,12),('g',12,10),('h',21,21);
```

```
/*Q1 b)*/
```

```
SELECT * FROM nodes;
```

node_name	x	y
b	5	1
e	5	5
d	11	14
g	12	10
f	12	12
a	12	14
c	13	14
h	21	21

```
/*Q1 C*/
```

```
SELECT * FROM nodes WHERE x=y;
```

node_name	x	y
e	5	5
f	12	12
h	21	21

```
/*Q2*/
```

```
CREATE TABLE edges (
  edge_name VARCHAR(2),
  weight INTEGER NOT NULL,
  sx INT NOT NULL,
  sy INT NOT NULL,
  ex INT NOT NULL,
```

```

    ey INT NOT NULL,
    CONSTRAINT edge_ID PRIMARY KEY(sx,sy,ex,ey)
);
/*Q2 a)*/
INSERT INTO edges(edge_name,weight,sx,sy,ex,ey)
VALUE('ab',1,12,14,5,1),('bc',1,12,14,11,14),('cd',1,11,14,5,1),('ef',1,12,10,21,21),('g
h',1,12,14,12,10),('fg',1,5,1,12,10),('gf',1,5,5,12,12),('ij',1,12,12,21,21);
/*Q2 b)*/
UPDATE edges SET weight=5 WHERE sx=12 AND sy=12 AND ex=12 AND ey=10;
UPDATE edges SET weight=15 WHERE sx=12 AND sy=12 AND ex=21 AND ey=21;

/*Q2 c)*/
SELECT * FROM edges;

```

edge_name	weight	sx	sy	ex	ey
fg	1	5	1	12	10
gf	1	5	5	12	12
cd	1	11	14	5	1
ef	1	12	10	21	21
ij	15	12	12	21	21
ab	1	12	14	5	1
bc	1	12	14	11	14
gh	1	12	14	12	10

```

/*Q3 a)*/
DROP DATABASE IF EXISTS Graph;
CREATE DATABASE Graph;
USE Graph;
CREATE TABLE nodes(
    node_name VARCHAR(2),
    x INT NOT NULL,
    y INT NOT NULL,
    CONSTRAINT NODE_ID PRIMARY KEY(x,y)
);
CREATE TABLE edges (
    edge_name VARCHAR(2),
    weight INTEGER NOT NULL,
    sx INT NOT NULL,
    sy INT NOT NULL,
    ex INT NOT NULL,
    ey INT NOT NULL,
    CONSTRAINT edge_ID PRIMARY KEY(sx,sy,ex,ey),
    FOREIGN KEY(sx,sy) REFERENCES nodes(x,y)on delete CASCADE on UPDATE no
ACTION,
    FOREIGN KEY(ex,ey) REFERENCES nodes(x,y)on delete CASCADE on UPDATE
CASCADE
);

/*insert data in this data base*/
INSERT INTO nodes(node_name,X,Y)

```

```
VALUES('a',5,5),('b',15,5),('c',5,3),('d',11,3);
INSERT INTO edges(edge_name,weight,sx,sy,ex,ey)
VALUE('ab',10,5,5,15,5),('ad',3,5,5,11,3),('ac',2,5,5,5,3),('dc',6,11,3,5,3),('bc',7,15,5,5,3);
SELECT * FROM nodes;
```

node_name	x	y
c	5	3
a	5	5
d	11	3
b	15	5

```
SELECT * FROM edges;
```

edge_name	weight	sx	sy	ex	ey
ac	2	5	5	5	3
ad	3	5	5	11	3
ab	10	5	5	15	5
dc	6	11	3	5	3
bc	7	15	5	5	3

```
/*Q3 b)*/
DELETE FROM nodes WHERE x=5 AND y=5;
SELECT * FROM nodes;
```

node_name	x	y
c	5	3
d	11	3
b	15	5

```
SELECT * FROM edges;
```

edge_name	weight	sx	sy	ex	ey
dc	6	11	3	5	3
bc	7	15	5	5	3