

## **Question 2 Hints**

When deciding if a point belongs in the desired neighborhood use the following set logic. 'r' is synonymous with 'm'

### **Moore Neighborhood (depth = r) SQUARE**

<http://mathworld.wolfram.com/MooreNeighborhood.html>

$$N(x_o, y_o) = \{(x, y) : |x - x_o| \leq r, |y - y_o| \leq r\}$$

$$\text{Number of neighbor nodes} = (2r+1)^2$$

### **von Neumann Neighborhood (depth = r) DIAMOND**

<http://mathworld.wolfram.com/vonNeumannNeighborhood.html>

$$N(x_o, y_o) = \{(x, y) : |x - x_o| + |y - y_o| \leq r\}$$

$$\text{Number of neighbor nodes} = 2r(r+1) + 1$$

## **Question 3 Hints**

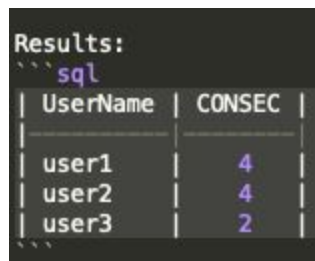
**Use this query to get you started:**

```
CREATE TABLE UserTable(UserName varchar(5), UserDate DATETIME, url int);
```

```
INSERT INTO UserTable
  (UserName, UserDate, url)
VALUES
```

```
  ('user1', '2014-09-01', 232),
  ('user1', '2014-09-02', 0),
  ('user1', '2014-09-03', 121),
  ('user1', '2014-09-08', 122),
  ('user1', '2014-09-09', 0),
  ('user1', '2014-09-10', 144),
  ('user1', '2014-09-11', 166),
  ('user2', '2014-09-01', 177),
  ('user2', '2014-09-04', 188),
  ('user2', '2014-09-05', 199),
  ('user2', '2014-09-06', 0),
  ('user2', '2014-09-07', 155),
  ('user3', '2014-09-03', 56),
  ('user3', '2014-09-04', 789),
  ('user3', '2014-09-07', 234),
  ('user3', '2014-09-09', 123);
```

**Results should look like this:**



Results:

```
sql
```

UserName	CONSEC
user1	4
user2	4
user3	2