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CSCI 585 - Homework 1

Q1) File Q1.sql

```
CREATE EXTENSION btree_gist;
CREATE TABLE HotelStays(
roomNum INTEGER NOT NULL,
during tsrange NOT NULL,
guestName CHAR(30) NOT NULL,
EXCLUDE USING gist(roomNum WITH=, during WITH&&)
);

INSERT INTO HotelStays VALUES(123, '[2010-01-01, 2010-02-01]', 'Test User1');
INSERT INTO HotelStays VALUES(124, '[2010-01-01, 2010-02-01]', 'Test User2');
```

Q2) Link to Sqlfiddle: http://sqlfiddle.com/#!9/0f0fd8/1

DDL Statements:

```
CREATE TABLE Courses (
  SID numeric(3),
  ClassName char(50),
  Grade char(1)
);

INSERT INTO Courses VALUES('123','ART123','A');
INSERT INTO Courses VALUES('123',  'BUS456',    'B');
INSERT INTO Courses VALUES('666',  'REL100',    'D');
INSERT INTO Courses VALUES('666',  'ECO966',    'A');
INSERT INTO Courses VALUES('666',  'BUS456',    'B');
INSERT INTO Courses VALUES('345',  'BUS456',    'A');
INSERT INTO Courses VALUES('345',  'ECO966',    'F');

CREATE VIEW number_of_students AS
SELECT ClassName, COUNT(CLassNAme) AS 'Total'
FROM Courses
GROUP by CLassName
ORDER by Total ASC
```

Query: SELECT * FROM number_of_students

Q3) Sqlfiddle link: http://sqlfiddle.com/#!9/96ddd6/9

DDL:

```
CREATE TABLE Project (
  ProjectID VARCHAR(4),
  Step NUMERIC(1),
  Status CHAR(1)
```

```
);


INSERT INTO Project VALUES('P100', 0, 'C');
INSERT INTO Project VALUES('P100', 1, 'W');
INSERT INTO Project VALUES('P100', 2,  'W');
INSERT INTO Project VALUES('P201', 0, 'C');
INSERT INTO Project VALUES('P201', 1, 'C');
INSERT INTO Project VALUES('P333', 0, 'W');
INSERT INTO Project VALUES('P333', 1, 'W');
INSERT INTO Project VALUES('P333', 2, 'W');
INSERT INTO Project VALUES('P333', 3, 'W');
```

QUERY:

```
SELECT DISTINCT ProjectID
FROM Project
WHERE ProjectID IN (SELECT ProjectID FROM Project WHERE Step = 0 AND Status = 'C')
AND ProjectID NOT IN (SELECT ProjectID FROM Project WHERE Step >= 1 AND Status = 'C')
```

Q4) Sqlfiddle link: http://sqlfiddle.com/#!9/21d7ed/1

DDL Statements:

```
CREATE TABLE Junkmail(
   Name char(35),
   Address varchar(50),
   ID numeric(5) NOT NULL,
   SameFam numeric(5)
);

INSERT INTO Junkmail VALUES('Alice',   'A', 10,  NULL);
INSERT INTO Junkmail VALUES('Bob', 'B', 15,  NULL);
INSERT INTO Junkmail VALUES('Carmen',  'C', 22,  NULL);
INSERT INTO Junkmail VALUES('Diego', 'A', 9, 10);
INSERT INTO Junkmail VALUES('Ella', 'B', 3, 15);
INSERT INTO Junkmail VALUES('Farkhad', 'D', 11, NULL);

DELETE FROM Junkmail
WHERE SameFam IS NULL
AND ID IN (SELECT SameFam FROM (SELECT * FROM Junkmail) AS Jnkmail WHERE
SameFam IS NOT NULL)
```

Q5) Sqlfiddle link: http://sqlfiddle.com/#!9/218390/18

DDL:

```
CREATE TABLE Chefs(
  chef char(1),
  dishes char(150)
);

INSERT INTO Chefs VALUES('A', 'Mint chocolate brownie');
INSERT INTO Chefs VALUES('B', 'Upside down pineapple cake');
```

```
INSERT INTO Chefs VALUES('B', 'Creme brulee');
INSERT INTO Chefs VALUES('B', 'Mint chocolate brownie');
INSERT INTO Chefs VALUES('C', 'Upside down pineapple cake');
INSERT INTO Chefs VALUES('C', 'Creme brulee');
INSERT INTO Chefs VALUES('D', 'Apple pie');
INSERT INTO Chefs VALUES('D', 'Upside down pineapple cake');
INSERT INTO Chefs VALUES('D', 'Creme brulee');
INSERT INTO Chefs VALUES('E', 'Apple pie');
INSERT INTO Chefs VALUES('E', 'Upside down pineapple cake');
INSERT INTO Chefs VALUES('E', 'Creme brulee');
INSERT INTO Chefs VALUES('E', 'Bananas Foster');
```

QUERY:

```
SELECT DISTINCT chef FROM Chefs
WHERE chef IN (SELECT chef FROM Chefs WHERE dishes = 'APPLE PIE')
AND chef IN (SELECT chef FROM Chefs WHERE dishes = 'UPSIDE DOWN PINEAPPLE CAKE')
AND chef IN (SELECT chef FROM Chefs WHERE dishes = 'CREME BRULEE')
```

Q5 Bonus #1) http://sqlfiddle.com/#!9/218390/19

QUERY:

```
SELECT chef
FROM Chefs
WHERE dishes IN ('CREME BRULEE', 'APPLE PIE', 'UPSIDE DOWN PINEAPPLE CAKE')
GROUP BY chef
HAVING COUNT(DISTINCT dishes) = 3
```

Q5 Bonus #2) http://sqlfiddle.com/#!9/218390/16

QUERY:

```
SELECT a.chef
FROM Chefs a
INNER JOIN Chefs b
INNER JOIN Chefs c
ON a.chef = b.chef AND  b.chef = c.chef AND a.dishes <> b.dishes <> c.dishes
WHERE a.dishes = 'UPSIDE DOWN PINEAPPLE CAKE' AND b.dishes = 'APPLE PIE' AND
c.dishes = 'CREME BRULEE'
```