Instructions:

- Submit a text file or a pdf file with your answers. Name your file as last-nameFirstnameW4.fileExtension (e.g. chaturvediRituW4.sql or chaturvediRi-tuW4.txt). Hand-written answers will not be accepted.

- Use the same SP database used in lcasss and in lab2.

Questions

1. Identify the errors in the following, describe them (in a few words) and fix them.

1.1:   Find all suppliers and the total number of parts they supply.

```
SELECT sno, COUNT(*)
FROM SP;
```

Your   Answer:

> Anytime we use an aggregate function, we must use a group by clause when there is an attribute in the select. If there is an attribute in the select, then that same attribute must be in the group by clause.
>
> select sno, count(*) from sp group by sno;

1.2:   Find sname and the total number of parts they supply.

```
SELECT sname, COUNT(*)
FROM S, SP GROUP BY sno;
```

Your   Answer:

> This query counts the number of total parts in sp because there is no criteria upon which it will match a part to a sname.
>
> select sname, count(*) from s,sp where s.sno=sp.sno group by sname;

1.3.   Find names of suppliers that supply the maximum quantity.

```
SELECT sname FROM SP, S
WHERE S. Sno = SP. Sno
AND    qty = MAX (qty);
```

Your   Answer:

> We cannot use an aggregate function within a boolean expression.
>
> select sname from sp,s where s.sno=sp.sno and qty = (select max(qty) from sp);

1.4   Find sno of suppliers who supply more than 2 parts

```
SELECT sno, COUNT(pno)
FROM     SP
WHERE COUNT (pno) > 2
GROUP BY sno;
```

Your   Answer:

> We cannot use an aggregate function within a boolean expression.
>
> select sno,count(pno) from sp group by sno having count(pno)>2;

2. Identify whether the following are correlated subqueries or non-correlated subqueries. You may write 'None' if they are neither.

A non-correlated subquery is one that uses an IN or NOT In to test if the values returned in the subquery are members of a set or not. Typically an inner query is first precocessed by the DBMS, then the results of the inner query are used by the outer query. A correlated subquery is one in which the inner query relies on the outer query before it can be processed.

```
2a. SELECT SNAME
      FROM S
      WHERE NOT EXISTS (SELECT *

                        FROM SP
                        WHERE S.SNO=SP.SNO
                        AND SP.PNO = 'P2')
```

Your   Answer:

> Correlated

```
2b. SELECT sname
      FROM S
      WHERE sno IN ('S2', 'S3');
```

Your   Answer:

> None

```
2c. SELECT sname
      FROM S
      WHERE sno IN (SELECT sno
                    FROM SP
                    WHERE pno IN ('P2', 'P3'));
```

Your   Answer:

> Non-correlated

```
2d. SELECT sname
      FROM S
      WHERE NOT EXISTS (SELECT *
        FROM SP SP1
        WHERE SNO = 'S2'
        AND NOT EXISTS (SELECT *

                FROM SP SP2
                WHERE SP1.PNO = SP2.PNO
```

Your   Answer:

> Correlated

3. Answer the following questions in context with the create_sp.sql and insert_sp.sql scripts used in lab2. These scripts allow you to create and populate the tables S, P and SP. After downloading and running the scripts on postgres,

3a. Write the command in postgres to find the tables that you just created? (similar to ls on linux)

3b. Which schema did you create the tables in?
3c. Write command (s) in postgres to display the structure of tables S, P and SP.
3d. Write command (s) in postgres to see the rows of tables S, P and SP.
3e. Write command to use a linux command on postgres, such as clear.

Your   Answer:

> 3a. \d+
>
> 3b. public
>
> 3c.
> - \d S
> - \d SP
> - \d P
>
> 3d.
> - select * from s;
> - select * from sp;
> - select * from p;
>
> 3e. \! *command* (where *command* is replaced by the linux command)