Assignment 1

course_code: COMP4003

name: Emma Orhun

student_num: 101071651

date_completed: Oct. 4th 2019

Part 1:

DDL:

```
CREATE TABLE part (
  P# CHAR(2) PRIMARY KEY,
  pname VARCHAR(10),
  color VARCHAR(10),
  weight DECIMAL(3,1),
  city VARCHAR(10)
)
```

```
CREATE TABLE supplier (
  S# CHAR(2) PRIMARY KEY,
  sname VARCHAR(10),
  status INTEGER,
  city VARCHAR(10)
)
```

```
CREATE TABLE sp (
  P# CHAR(2) NOT NULL,
  S# CHAR(2) NOT NULL,
  qty INTEGER,
  PRIMARY KEY(P#, S#)
  FOREIGN KEY(P#) REFERENCES part(P#),
  FOREIGN KEY(S#) REFERENCES supplier(S#)
)
```

DML:

```
INSERT ALL
  INTO part (P#, pname, color, weight, city) VALUES ('P1', 'Nut', 'Red', 12.0, 'London')
  INTO part (P#, pname, color, weight, city) VALUES ('P2', 'Bolt', 'Green', 17.0, 'Paris')
  INTO part (P#, pname, color, weight, city) VALUES ('P3', 'Screw', 'Blue', 17.0, 'Oslo')
  INTO part (P#, pname, color, weight, city) VALUES ('P4', 'Screw', 'Red', 14.0, 'London')
  INTO part (P#, pname, color, weight, city) VALUES ('P5', 'Cam', 'Blue', 12.0, 'Paris')
  INTO part (P#, pname, color, weight, city) VALUES ('P6', 'Cog', 'Red', 19.0, 'London')
SELECT * FROM dual;
```

```
INSERT ALL
  INTO supplier (S#, sname, status, city) VALUES ('S1', 'Smith', 20, 'London')
  INTO supplier (S#, sname, status, city) VALUES ('S2', 'Jones', 30, 'Paris')
  INTO supplier (S#, sname, status, city) VALUES ('S3', 'Blake', 30, 'Paris')
  INTO supplier (S#, sname, status, city) VALUES ('S4', 'Orhun', 20, 'London')
  INTO supplier (S#, sname, status, city) VALUES ('S5', 'Adams', 30, 'Athens')
SELECT * FROM dual;
```

```
INSERT ALL
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P1', 300)
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P2', 200)
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P3', 400)
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P4', 200)
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P5', 100)
  INTO sp (S#, P#, QTY) VALUES ('S1', 'P6', 100)
  INTO sp (S#, P#, QTY) VALUES ('S2', 'P1', 300)
  INTO sp (S#, P#, QTY) VALUES ('S2', 'P2', 400)
  INTO sp (S#, P#, QTY) VALUES ('S2', 'P3', 500)
  INTO sp (S#, P#, QTY) VALUES ('S3', 'P2', 200)
  INTO sp (S#, P#, QTY) VALUES ('S3', 'P3', 200)
  INTO sp (S#, P#, QTY) VALUES ('S3', 'P4', 300)
  INTO sp (S#, P#, QTY) VALUES ('S4', 'P2', 300)
  INTO sp (S#, P#, QTY) VALUES ('S4', 'P3', 400)
SELECT * FROM dual;
```

Part 2:

1. Input:

```
SELECT part.pname FROM part
JOIN sp ON sp.P# = part.P#
JOIN supplier on supplier.S# = sp.S# WHERE supplier.sname = 'Orhun'
```

Output:

```
PNAME
----------
Bolt
Screw
```

2. Input:

```
SELECT sname FROM supplier
JOIN sp ON sp.S# = supplier.S#
JOIN part ON sp.P# = part.P#
WHERE part.pname = 'Bolt'
GROUP BY supplier.sname;
```

Output:

```
SNAME
----------
Blake
Orhun
Jones
Smith
```

3. Input:

```
SELECT sname FROM supplier
JOIN sp ON supplier.S# = sp.S#
WHERE sp.qty > 400
GROUP BY supplier.sname;
```

Output:

```
SNAME
----------
Jones
```

4. Input:

```
SELECT sname FROM supplier
JOIN sp ON supplier.S#=sp.S#
JOIN part ON sp.P#=part.P#
WHERE part.color = 'Green'
OR part.color = 'Blue'
GROUP BY supplier.sname;
```

Output:

```
SNAME
----------
Blake
Orhun
Jones
Smith
```

5. Input:

```
SELECT sname FROM supplier
WHERE S# IN (
  SELECT S# FROM sp
  WHERE P# IN (
    SELECT P# FROM part
    WHERE color = 'Blue'
  )
  INTERSECT
  SELECT S# FROM sp
  WHERE P# IN (
    SELECT P# FROM part
    WHERE color = 'Green'
  )
)
GROUP BY sname;
```

Output:

```
SNAME
----------
Blake
Orhun
Jones
Smith
```

6. Input:

```
SELECT pname, sname
FROM part, supplier
MINUS (
  SELECT pname, sname
  FROM sp
  JOIN part ON part.P#=sp.P#
  JOIN supplier ON supplier.S#=sp.S#
);
```

Output:

```
PNAME      SNAME
---------- ----------
Bolt       Adams
Cam        Adams
Cam        Blake
Cam        Jones
Cam        Orhun
Cog        Adams
Cog        Blake
Cog        Jones
Cog        Orhun
Nut        Adams
Nut        Blake

PNAME      SNAME
---------- ----------
Nut        Orhun
Screw      Adams
```

7. Input:

```
SELECT sname FROM supplier
WHERE NOT EXISTS (
  SELECT * FROM sp
  WHERE supplier.S# = sp.S#
);
```

Output:

```
SNAME
----------
```

```
Adams
```

8. Input:

```
SELECT sname FROM supplier
WHERE NOT EXISTS (
  SELECT * FROM part
  WHERE NOT EXISTS (
    SELECT * FROM sp
    WHERE part.P#=sp.P#
    AND supplier.S#=sp.S#
  )
);
```

Output:

```
SNAME
----------
Smith
```

9. Input:

```
SELECT sname FROM supplier
WHERE supplier.S# IN (
  SELECT S# FROM sp
  WHERE EXISTS (
    SELECT P# FROM sp
    WHERE S# IN (
      SELECT S# FROM supplier
      WHERE sname = 'Orhun'
    )
  )
);
```

Output:

```
SNAME
----------
Blake
Orhun
Jones
Smith
```

10. Input:

```
SELECT sname, COUNT(sp.P#), SUM(sp.qty) FROM supplier
JOIN sp ON supplier.S#=sp.S#
GROUP BY sname;
```

Output:

```
SNAME     COUNT(SP.P#) SUM(SP.QTY)
--------- ------------ -----------
Blake          3    700
Orhun          2    700
Jones          3        1200
Smith          6        1300
```