Assignment 1
On MySql Queries

COMP 353
SUMMER 2018

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Lab Section: CI-X

For Prof Jababo
Due: July 18th

Assumptions:

1. Every department is managed by a single manager
2. A manager can manage multiple contracts
3. Every contract is managed by one manager
4. An employee belongs to only one department
5. An employee can work on multiple contracts
6. A manager is also an employee
7. A responsible can represent only one company
8. A company can have more than one responsible
9. A company can have more than one contract at a time

Tables:

Department:

```
+----+-----------------------+
| id | name                  |
+----+-----------------------+
|  1 | Development           |
|  2 | QA                    |
|  3 | UI                    |
|  4 | Design                |
|  5 | Business Intelligence |
|  6 | Networking            |
+----+-----------------------+
6 rows in set (0.01 sec)
```

Contract_type:

```
+----+---------+
| id | name    |
+----+---------+
|  1 | Premium |
|  2 | Gold    |
|  3 | Diamond |
|  4 | Silver  |
+----+---------+
4 rows in set (0.00 sec)
```

Company:

```
mysql> SELECT * FROM Company;
+----+------------------+---------------+--------------------+------------+----------+-------------+
| id | name             | phone_number  | email              | city       | province | postal_code |
+----+------------------+---------------+--------------------+------------+----------+-------------+
|  1 | Bobs Plumbing    | 1 514 345 7711 | bobs@plubming.com  | Montreal   | QC       | H4G 2F7     |
|  2 | Jims Shirt Locker | 1 902 783 2655 | jims@hurtlocker.com | Antigonish | N.S      | H2V 2J1     |
|  3 | The Wheel Pizza  | 1 902 863 2155 | thewheel@yahoo.com | Antigonish | N.S      | H2V 3N7     |
|  4 | Electronic Box   | 1 514 863 7142 | ebox@gmail.com     | Montreal   | QC       | H4K 1E2     |
|  5 | GSC Corporation  | 1 514 803 5642 | gdc@gmail.com      | Montreal   | QC       | H4K 1N7     |
|  6 | Nike             | 1 800 347 NIKE | help@nike.com      | Montreal   | QC       | H4M 2F7     |
+----+------------------+---------------+--------------------+------------+----------+-------------+
6 rows in set (0.00 sec)
```

Employee:

```
mysql> SELECT * FROM Employee;
+----+------------------+------------+---------------+
| id | name             | is_manager | department_id |
+----+------------------+------------+---------------+
|  1 | Juan Vasquez     |          1 |             1 |
|  2 | Fred Flintstone  |          1 |             2 |
|  3 | Ellen Degeneress |          1 |             3 |
|  4 | Max Patches      |          1 |             4 |
|  5 | Winen Spririts   |          1 |             5 |
|  6 | Jim Carey        |          1 |             6 |
|  7 | Geoff Stowe      |          0 |             1 |
|  8 | Brian Hulbert    |          0 |             1 |
|  9 | Sarah Mattie     |          0 |             1 |
| 10 | Billy Bush       |          0 |             1 |
| 11 | Nina Simone      |          0 |             1 |
| 12 | The Rock         |          0 |             1 |
| 13 | Bill Nye         |          0 |             1 |
| 14 | Mr. Dressup      |          0 |             1 |
| 15 | Blair Nichols    |          0 |             1 |
| 16 | Britney Spears   |          0 |             1 |
| 17 | Ben Stiller      |          0 |             2 |
| 18 | Bill Schruder    |          0 |             2 |
| 19 | Tom McGhee       |          0 |             2 |
| 20 | Jen Staffer      |          0 |             3 |
| 21 | Wayne Cassey     |          0 |             3 |
| 22 | Oprah Winfrey    |          0 |             3 |
| 23 | Charles Hudon    |          0 |             4 |
| 24 | Turtle Neck      |          0 |             4 |
| 25 | Carey Price      |          0 |             4 |
| 26 | Jim Bean         |          0 |             5 |
| 27 | Johhny Walker    |          0 |             5 |
| 28 | Glassov Gynn     |          0 |             5 |
| 29 | Hotly Contested  |          0 |             6 |
| 30 | Laura Laundry    |          0 |             6 |
| 31 | Mack McFuddster  |          0 |             6 |
| 32 | David            |          1 |             2 |
| 33 | Prospero         |          0 |             2 |
+----+------------------+------------+---------------+
33 rows in set (0.00 sec)

mysql>
```

Responsible:

```
mysql> SELECT * FROM Responsible;
+----+------------+-------------+----------------+------------+
| id | first_name | last_name   | middle_initial | company_id |
+----+------------+-------------+----------------+------------+
|  1 | Horse      | Bo-Jackman  | B              |          1 |
|  2 | Ben        | Smith       | C              |          2 |
|  3 | Ryan       | Nichols     | B              |          3 |
|  4 | Wanda      | Brides      | F              |          4 |
|  5 | Point      | Man         | Z              |          5 |
|  6 | Von        | Van-Showman | B              |          6 |
+----+------------+-------------+----------------+------------+
6 rows in set (0.00 sec)

mysql>
```

Service_type:

```
mysql> SELECT * FROM Service_type;
+----+-------------+
| id | name        |
+----+-------------+
|  1 | On premises |
|  2 | Cloud       |
+----+-------------+
2 rows in set (0.00 sec)
```

Company:

```
mysql> SELECT * FROM Company;
+----+-------------------+----------------+---------------------+------------+----------+-------------+
| id | name              | phone_number   | email               | city       | province | postal_code |
+----+-------------------+----------------+---------------------+------------+----------+-------------+
|  1 | Bobs Plumbing     | 1 514 345 7711 | bobs@plubming.com   | Montreal   | QC       | H4G 2F7     |
|  2 | Jims Shirt Locker | 1 902 783 2655 | jims@hurtlocker.com | Antigonish | N.S      | H2V 2J1     |
|  3 | The Wheel Pizza   | 1 902 863 2155 | thewheel@yahoo.com  | Antigonish | N.S      | H2V 3N7     |
|  4 | Electronic Box    | 1 514 863 7142 | ebox@gmail.com      | Montreal   | QC       | H4K 1E2     |
|  5 | GSC Corporation   | 1 514 803 5642 | gdc@gmail.com       | Montreal   | QC       | H4K 1N7     |
|  6 | Nike              | 1 800 347 NIKE | help@nike.com       | Montreal   | QC       | H4M 2F7     |
+----+-------------------+----------------+---------------------+------------+----------+-------------+
6 rows in set (0.00 sec)
```

Contract:

```
mysql> SELECT * FROM Contract;
+----+------------+----------------+--------+----------------+---------------------+--------------+---------------+------------+
| id | company_id | responsible_id | acv    | initial_amount | start_date          | service_type | contract_type | manager_id |
+----+------------+----------------+--------+----------------+---------------------+--------------+---------------+------------+
|  1 |          1 |              1 |  85000 |       10000.00 | 2018-07-17 10:25:04 |            1 |             2 |          1 |
|  2 |          5 |              5 |  90000 |       10000.00 | 2018-07-17 10:25:04 |            1 |             3 |          1 |
|  3 |          1 |              1 |  95000 |       12000.00 | 2018-07-17 10:25:05 |            1 |             4 |          1 |
|  4 |          3 |              3 |  65000 |        7000.00 | 2018-07-17 10:25:05 |            2 |             1 |          3 |
|  5 |          5 |              5 | 100000 |       20000.00 | 2018-07-17 10:25:05 |            1 |             4 |          1 |
|  6 |          4 |              4 | 100000 |       20000.00 | 2018-07-17 10:25:05 |            1 |             2 |          4 |
|  7 |          3 |              3 | 200000 |       20000.00 | 2018-07-17 10:25:05 |            1 |             4 |          1 |
|  8 |          6 |              6 | 220000 |       20000.00 | 2018-07-17 10:49:56 |            1 |             2 |          1 |
|  9 |          6 |              6 | 370000 |       50000.00 | 2018-07-17 11:04:23 |            1 |             3 |          1 |
| 10 |          1 |              1 |  85000 |       10000.00 | 2016-07-17 11:04:23 |            1 |             2 |          1 |
| 11 |          1 |              1 |  85000 |       10000.00 | 2016-08-17 11:04:23 |            1 |             2 |          1 |
| 12 |          2 |              2 | 100000 |       10000.00 | 2017-10-17 11:30:23 |            1 |             2 |          1 |
| 13 |          3 |              3 | 100000 |       10000.00 | 2017-11-15 10:30:23 |            1 |             2 |          1 |
| 14 |          4 |              4 | 100000 |       10000.00 | 2017-12-11 11:31:23 |            1 |             2 |          1 |
+----+------------+----------------+--------+----------------+---------------------+--------------+---------------+------------+
14 rows in set (0.00 sec)

mysql>
```

Contract_worker:

```
mysql> SELECT * FROM Contract_worker;
+----+-------------+-------------+
| id | employee_id | contract_id |
+----+-------------+-------------+
|  1 |           7 |           1 |
|  2 |           8 |           1 |
|  3 |           9 |           1 |
|  4 |          10 |           2 |
|  5 |          11 |           2 |
|  6 |          12 |           2 |
|  7 |          13 |           2 |
|  8 |          17 |           3 |
|  9 |          18 |           3 |
| 10 |          19 |           3 |
| 11 |          20 |           3 |
| 12 |          20 |           4 |
| 13 |          21 |           4 |
| 14 |          22 |           4 |
| 15 |          23 |           4 |
| 16 |          12 |           5 |
| 17 |          13 |           5 |
| 18 |          14 |           5 |
| 19 |          16 |           5 |
| 20 |          23 |           6 |
| 21 |          24 |           6 |
| 22 |        NULL |           6 |
| 23 |          17 |           7 |
| 24 |          11 |           7 |
| 25 |          14 |           7 |
| 26 |          16 |           7 |
+----+-------------+-------------+
26 rows in set (0.00 sec)
```

Q-1.

```
SELECT DISTINCT Employee.id, Employee.name FROM Employee, Department WHERE
   Employee.department_id =
   (SELECT Department.id FROM Department WHERE Department.name LIKE
"%Development%");
```

```
+----+---------------+
| id | name          |
+----+---------------+
|  1 | Juan Vasquez  |
|  7 | Geoff Stowe   |
```

```
|  8 | Brian Hulbert  |
|  9 | Sarah Mattie   |
| 10 | Billy Bush     |
| 11 | Nina Simone    |
| 12 | The Rock       |
| 13 | Bill Nye       |
| 14 | Mr. Dressup    |
| 15 | Blair Nichols  |
| 16 | Britney Spears |
+----+----------------+
11 rows in set (0.01 sec)
```

Q-2.

```
# We need to add a Company Nike
INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("Nike", "1 800 347 NIKE", "help@nike.com", "Montreal", "QC", "H4M 2F7");

# They also need a Responsible to sign their contracts
INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Von", "Van-Showman", "B",
   (SELECT id FROM Company WHERE name LIKE "Nike")
   );

# Nike needs to already have a contract of type gold
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   (SELECT id FROM Company WHERE Company.name LIKE "Nike"),
   (SELECT id FROM Responsible WHERE company_id =
      (SELECT id FROM Company WHERE Company.name LIKE "Nike")),
   220000,
   20000,
   1,
   (SELECT id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
   1); # Juans dept
```

```
# Now show the company and their contracts w/ the type
SELECT Company.name AS Company_Name, Contract.id AS Contract_ID, Contract.acv AS
"ACV",
   Contract_type.name AS Contract_Type FROM Company, Contract, Contract_type WHERE
   Company.name LIKE "NIKE" AND Contract.company_id LIKE
   (SELECT Company.id FROM Company WHERE Company.name LIKE "Nike")
   AND Contract.contract_type = Contract_type.id;

+--------------+-------------+--------+---------------+
| Company_Name | Contract_ID | ACV    | Contract_Type |
+--------------+-------------+--------+---------------+
| Nike         |           8 | 220000 | Gold          |
+--------------+-------------+--------+---------------+
1 row in set (0.00 sec)

# Now add the Diamond Contract
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   (SELECT id FROM Company WHERE Company.name LIKE "Nike"),
   (SELECT id FROM Responsible WHERE company_id =
      (SELECT id FROM Company WHERE Company.name LIKE "Nike")),
   350000,
   50000,
   1,
   (SELECT id FROM Contract_type WHERE Contract_type.name LIKE "Diamond"),
   1); # Juans id

# Now show Nikes contracts again
SELECT Company.name AS Company_Name, Contract.id AS Contract_ID, Contract.acv AS
"ACV",
   Contract_type.name AS Contract_Type FROM Company, Contract, Contract_type WHERE
   Company.name LIKE "NIKE" AND Contract.company_id LIKE
   (SELECT Company.id FROM Company WHERE Company.name LIKE "Nike")
   AND Contract.contract_type = Contract_type.id;

+--------------+-------------+--------+---------------+
```

```
| Company_Name | Contract_ID | ACV    | Contract_Type |
+--------------+-------------+--------+---------------+
| Nike         |           8 | 220000 | Gold          |
| Nike         |           9 | 350000 | Diamond       |
+--------------+-------------+--------+---------------+
2 rows in set (0.00 sec)
```

Q-3.

```
# Q-3
# I will identify the incorrect entry of Nike's contract by the latest start_date

# Can't use update and order by w/ multiple tables so
# i need to know Nikes company id, which is easy to find
SELECT id FROM Company WHERE name LIKE "Nike";

# This gives a 6 for their id

UPDATE Contract SET Contract.acv = 370000 WHERE Contract.company_id = 6
   ORDER BY Contract.start_date DESC LIMIT 1 ;
```

Now if I show Nike's contracts again I get

```
+--------------+-------------+--------+---------------+
| Company_Name | Contract_ID | ACV    | Contract_Type |
+--------------+-------------+--------+---------------+
| Nike         |           8 | 220000 | Gold          |
| Nike         |           9 | 370000 | Diamond       |
+--------------+-------------+--------+---------------+
2 rows in set (0.00 sec)
```

```
#Q-4
# First we need a manager David
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("David", True, 2);

# Now we will add Prospero and set David as his manager
# First double check that we know which department David is managing
SELECT department_id FROM Employee WHERE is_manager = True AND
   name LIKE "David";

+---------------+
```

```
| department_id |
+---------------+
|             2 |
+---------------+
1 row in set (0.00 sec)

# Now that we know David's a Manager and in Department with id = 2
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Prospero", False, 2);

# All Employees in David's dept
SELECT * FROM Employee WHERE is_manager = False AND
   department_id = (SELECT department_id FROM Employee WHERE is_manager = True AND
      name LIKE "David");

+----+---------------+------------+---------------+
| id | name          | is_manager | department_id |
+----+---------------+------------+---------------+
| 17 | Ben Stiller   |          0 |             2 |
| 18 | Bill Schruder |          0 |             2 |
| 19 | Tom McGhee    |          0 |             2 |
| 33 | Prospero      |          0 |             2 |
+----+---------------+------------+---------------+
4 rows in set (0.00 sec)
```

Q-5.

```
# We need some more dummy data Contracts that include start_date

INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   start_date,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   1,
   1,
   85000,
```

```
    10000,
    "2016-08-17 11:04:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);

# Jims Shirt Locker has company_id =2
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    2,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 2),
    100000,
    10000,
    "2017-10-17 11:30:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);

# The Wheel Pizza has company_id = 3
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    3,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 3),
    100000,
    10000,
    "2017-11-15 10:30:23",
    1,
```

```
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);

# Electronic Box has company_id = 4
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    4,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 4),
    100000,
    10000,
    "2017-12-11 11:31:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);


 SELECT DISTINCT Company.name FROM Company, Contract, Contract_type WHERE
        Company.id = Contract.company_id AND Contract.contract_type LIKE
        (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE
"Gold") AND
        Contract.start_date BETWEEN "2017-01-01 00:00:00" AND "2017-12-31 23:59:59";



+-------------------+
| name              |
+-------------------+
| Jims Shirt Locker |
| The Wheel Pizza   |
| Electronic Box    |
+-------------------+
3 rows in set (0.00 sec)
```

```
DROP DATABASE db;
CREATE DATABASE db;
USE db;

CREATE TABLE IF NOT EXISTS Department(
   id INT UNSIGNED AUTO_INCREMENT NOT NULL,
   name VARCHAR(30) NOT NULL,
   PRIMARY KEY(id)
   ) ENGINE=INNODB;


INSERT INTO Department (name) VALUES ("Development");
INSERT INTO Department (name) VALUES ("QA");
INSERT INTO Department (name) VALUES ("UI");
INSERT INTO Department (name) VALUES ("Design");
INSERT INTO Department (name) VALUES ("Business Intelligence");
INSERT INTO Department (name) VALUES ("Networking");

CREATE TABLE IF NOT EXISTS Contract_type(
   id INT(6) UNSIGNED AUTO_INCREMENT,
   name VARCHAR(30) NOT NULL,
   PRIMARY KEY(id)
   ) ENGINE=INNODB;


INSERT INTO Contract_type (name) VALUES ("Premium");
INSERT INTO Contract_type (name) VALUES ("Gold");
INSERT INTO Contract_type (name) VALUES ("Diamond");
INSERT INTO Contract_type (name) VALUES ("Silver");

CREATE TABLE IF NOT EXISTS Company(
    id INT UNSIGNED AUTO_INCREMENT NOT NULL,
    name VARCHAR(30) NOT NULL,
    phone_number VARCHAR(15) NOT NULL, # human readable form, count # of digits??
    email VARCHAR(30) NOT NULL,  # email-id?? should be primary key??
    city VARCHAR(30) NOT NULL,
    province VARCHAR(30) NOT NULL,  # should be own table? QC vs Quebec, spelling errors
etc.
    postal_code CHAR(7) NOT NULL,
    PRIMARY KEY (id)
) ENGINE=INNODB;
```

```
INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("Bobs Plumbing", "1 514 345 7711", "bobs@plubming.com", "Montreal", "QC",
"H4G 2F7");

INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("Jims Shirt Locker", "1 902 783 2655", "jims@hurtlocker.com", "Antigonish", "N.S",
"H2V 2J1");

INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("The Wheel Pizza", "1 902 863 2155", "thewheel@yahoo.com", "Antigonish", "N.S",
"H2V 3N7");

INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("Electronic Box", "1 514 863 7142", "ebox@gmail.com", "Montreal", "QC", "H4K
1E2");

INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("GSC Corporation", "1 514 803 5642", "gdc@gmail.com", "Montreal", "QC", "H4K
1N7");

CREATE TABLE IF NOT EXISTS Responsible (
   id INT UNSIGNED AUTO_INCREMENT NOT NULL,
   first_name VARCHAR(20) NOT NULL,
   last_name VARCHAR(20) NOT NULL,
   middle_initial CHAR(1) NOT NULL,
   company_id INT UNSIGNED,
   PRIMARY KEY(id),
   INDEX(company_id),
   FOREIGN KEY (company_id) REFERENCES Company(id)
) ENGINE=INNODB;


INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Horse", "Bo-Jackman", "B", 1);

INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Ben", "Smith", "C", 2);

INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Ryan", "Nichols", "B", 3);

INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Wanda", "Brides", "F", 4);
```

```
INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Point", "Man", "Z", 5);


CREATE TABLE IF NOT EXISTS Employee(
   id INT UNSIGNED AUTO_INCREMENT,
   name VARCHAR(30) NOT NULL,
   is_manager BOOL NOT NULL DEFAULT False,
   department_id INT UNSIGNED,
   PRIMARY KEY(id),
   INDEX(department_id),
   FOREIGN KEY (department_id) REFERENCES Department(id)
) ENGINE=INNODB;


#####################################################
# Managers
#####################################################
# ANSWER: Part-2 d. 2
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Juan Vasquez", True, 1);
#####################################################
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Fred Flintstone", True, 2);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Ellen Degeneress", True, 3);


INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Max Patches", True, 4);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Winen Spririts", True, 5);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Jim Carey", True, 6);


#####################################################
# this team has 10 developers and is managed by Juan
# managed by him since he is the manager of
```

```
# their department
#########################################################
## THIS IS THE DEVELOPMENT DEPARTMENT
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Geoff Stowe", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Brian Hulbert", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Sarah Mattie", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Billy Bush", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Nina Simone", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("The Rock", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Bill Nye", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Mr. Dressup", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Blair Nichols", False, 1);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Britney Spears", False, 1);

#########################################################
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Ben Stiller", False, 2);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Bill Schruder", False, 2);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Tom McGhee", False, 2);
```

```
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Jen Staffer", False, 3);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Wayne Cassey", False, 3);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Oprah Winfrey", False, 3);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Charles Hudon", False, 4);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Turtle Neck", False, 4);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Carey Price", False, 4);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Jim Bean", False, 5);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Johhny Walker", False, 5);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Glassov Gynn", False, 5);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Hotly Contested", False, 6);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Laura Laundry", False, 6);

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Mack McFuddster", False, 6);


CREATE TABLE IF NOT EXISTS Service_type(
   id INT(6) UNSIGNED AUTO_INCREMENT,
   name CHAR(11),
    PRIMARY KEY(id)
) ENGINE=INNODB;
```

```
INSERT INTO Service_type (name) VALUES ("On premises");
INSERT INTO Service_type (name) VALUES ("Cloud");


CREATE TABLE IF NOT EXISTS Contract (
    id INT UNSIGNED AUTO_INCREMENT,
    company_id INT UNSIGNED,
    responsible_id INT UNSIGNED,
    acv int (10) NOT NULL,
    initial_amount DOUBLE(10, 2),  # 10 digits total, 2 for decimal
    start_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    service_type INT UNSIGNED,
    contract_type INT UNSIGNED,
    manager_id INT UNSIGNED,
    PRIMARY KEY(id),
    INDEX(service_type),
    INDEX(contract_type),
    INDEX(company_id),
    INDEX(manager_id),
    INDEX(responsible_id),
    FOREIGN KEY(service_type) REFERENCES Service_type(id),
    FOREIGN KEY(contract_type) REFERENCES Contract_type(id),
    FOREIGN KEY(company_id) REFERENCES Company(id),
    FOREIGN KEY(responsible_id) REFERENCES Responsible(id),
    FOREIGN KEY(manager_id) REFERENCES Employee(id)
) ENGINE=INNODB;

# Query for dates from timestamp like so:
# SELECT DATE(start_date) FROM Contract;
# More here:
#
https://stackoverflow.com/questions/3696778/create-table-fail-in-mysql-when-using-curdate-as-d
efault#3696802

# This table handles the many to many relationship Employees => Contracts
CREATE TABLE IF NOT EXISTS Contract_worker (
    id INT UNSIGNED AUTO_INCREMENT,
    employee_id INT UNSIGNED,
    contract_id INT UNSIGNED,
    PRIMARY KEY(id),
    INDEX(employee_id),
    INDEX(contract_id),
```

```
    FOREIGN KEY(employee_id) REFERENCES Employee(id),
    FOREIGN KEY (contract_id) REFERENCES Contract(id)
);


# Create some contracts and dont forget to also create
# Create contract workers entry as well
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    1,
    1,
    85000,
    10000,
    1,
    2,
    1);

# Now Add some Employee from Juans dept for this contract
INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Geoff Stowe"), 1);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Brian Hulbert"), 1);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Sarah Mattie"), 1);


##############################################
# Answer to Part-2 d. 1
##############################################
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
```

```
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    5,
    5,
    90000,
    10000,
    1,
    3,
    1);
################################################

# Now Add some Employee from Juans dept for this contract
# Since the Manager id number and the Department id numbers align

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Billy Bush"), 2);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Nina Simone"), 2);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "The Rock"), 2);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Bill Nye"), 2);


#########################################################################
# Now another random contact

INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    1,
    1,
```

```
    95000,
    12000,
    1,
    4,
    1); # Juans dept

# Now Add some Employee from dept 1 for this contract which is the 3rd contract
# Since the Manager id number and the Department id numbers align

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Ben Stiller"), 3);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Bill Schruder"), 3);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Tom McGhee"), 3);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
    (SELECT id FROM Employee WHERE name LIKE "Jen Staffer"), 3);

#########################################################################
# Now another random contract

INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    3,
    (SELECT id FROM Responsible WHERE company_id = 3),
    65000,
    7000,
    2,
    1,
    3);

# Now Add some Employee from dept 3 for this contract which is the 4th contract
# Since the Manager id number and the Department id numbers align
```

```
INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Jen Staffer"), 4);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Wayne Cassey"), 4);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Oprah Winfrey"), 4);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Charles Hudon"), 4);


#########################################################################
# Now another random contract

INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   5,
   (SELECT id FROM Responsible WHERE company_id = 5),
   100000,
   20000,
   1,
   4,
   1);

# Now Add some Employee from dept 1 for this contract which is the 5th contract
# Since the Manager id number and the Department id numbers align

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "The Rock"), 5);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Bill Nye"), 5);
```

```
INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Mr. Dressup"), 5);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Britney Spears"), 5);



##########################################################################
# Now another random contract

INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   4,
   (SELECT id FROM Responsible WHERE company_id = 4),
   100000,
   20000,
   1,
   2,
   4);

# Now Add some Employee from dept 4 for this contract which is the 6th contract
# Since the Manager id number and the Department id numbers align

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Charles Hudon"), 6);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Turtle Neck"), 6);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Carey Price "), 6);



##########################################################################
# Now another contract for Juan
```

```
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   3,
   (SELECT id FROM Responsible WHERE company_id = 3),
   200000,
   20000,
   1,
   4,
   1); # Juans dept

# Now Add some Employee from dept 1 for this contract which is the 3rd contract
# Since the Manager id number and the Department id numbers align

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Ben Stiller"), 7);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Nina Simone"), 7);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Mr. Dressup"), 7);

INSERT INTO Contract_worker (employee_id, contract_id) VALUES (
   (SELECT id FROM Employee WHERE name LIKE "Britney Spears"), 7);

#############################################################################
# ASSIGNMENT 1 STARTS HERE
#############################################################################

# Q-1
# The development department has a primary key of 1

SELECT DISTINCT Employee.id, Employee.name FROM Employee, Department WHERE
   Employee.department_id =
```

```
   (SELECT Department.id FROM Department WHERE Department.name LIKE
"%Development%");


# Q-2
# We need to add a Company Nike
INSERT INTO Company(name, phone_number, email, city, province, postal_code)
   VALUES("Nike", "1 800 347 NIKE", "help@nike.com", "Montreal", "QC", "H4M 2F7");

# They also need a Responsible to sign their contracts
INSERT INTO Responsible(first_name, last_name, middle_initial, company_id)
   VALUES("Von", "Van-Showman", "B",
   (SELECT id FROM Company WHERE name LIKE "Nike")
   );

# Nike needs to already have a contract of type gold
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   (SELECT id FROM Company WHERE Company.name LIKE "Nike"),
   (SELECT id FROM Responsible WHERE company_id =
      (SELECT id FROM Company WHERE Company.name LIKE "Nike")),
   220000,
   20000,
   1,
   (SELECT id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
   1); # Juans dept

# Now show the company and their contracts w/ the type
SELECT Company.name AS Company_Name, Contract.id AS Contract_ID, Contract.acv AS
"ACV",
   Contract_type.name AS Contract_Type FROM Company, Contract, Contract_type WHERE
   Company.name LIKE "NIKE" AND Contract.company_id LIKE
   (SELECT Company.id FROM Company WHERE Company.name LIKE "Nike")
   AND Contract.contract_type = Contract_type.id;

# Now add the Diamond Contract
```

```
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   (SELECT id FROM Company WHERE Company.name LIKE "Nike"),
   (SELECT id FROM Responsible WHERE company_id =
      (SELECT id FROM Company WHERE Company.name LIKE "Nike")),
   350000,
   50000,
   1,
   (SELECT id FROM Contract_type WHERE Contract_type.name LIKE "Diamond"),
   1); # Juans id

# Now show Nikes contracts again
SELECT Company.name AS Company_Name, Contract.id AS Contract_ID, Contract.acv AS
"ACV",
   Contract_type.name AS Contract_Type FROM Company, Contract, Contract_type WHERE
   Company.name LIKE "NIKE" AND Contract.company_id LIKE
   (SELECT Company.id FROM Company WHERE Company.name LIKE "Nike")
   AND Contract.contract_type = Contract_type.id;



# Q-3
# I will return the contract signed by Nike with the latest start_date


# Now I will use a similar querty to update the value of that contract
# Cant use update and order by w/ multiple tables so
# i need to know Nikes company id, which is easy to find
SELECT id FROM Company WHERE name LIKE "Nike";

# This gives a 6 for their id

UPDATE Contract SET Contract.acv = 370000 WHERE Contract.company_id = 6
   ORDER BY Contract.start_date DESC LIMIT 1 ;

# Now show Nikes contracts again to see the change
```

```
SELECT Company.name AS Company_Name, Contract.id AS Contract_ID, Contract.acv AS
"ACV",
   Contract_type.name AS Contract_Type FROM Company, Contract, Contract_type WHERE
   Company.name LIKE "NIKE" AND Contract.company_id LIKE
   (SELECT Company.id FROM Company WHERE Company.name LIKE "Nike")
   AND Contract.contract_type = Contract_type.id;

#Q-4
# First we need a manager David
INSERT INTO Employee(name, is_manager, department_id)
   VALUES("David", True, 2);

# Now we will add Prospero and set David as his manager
# First double check that we know which department David is managing
SELECT department_id FROM Employee WHERE is_manager = True AND
   name LIKE "David";

INSERT INTO Employee(name, is_manager, department_id)
   VALUES("Prospero", False, 2);

# All Employees in Davids dept
SELECT * FROM Employee WHERE is_manager = False AND
   department_id = (SELECT department_id FROM Employee WHERE is_manager = True AND
      name LIKE "David");

# We need some more dummy data Contracts that include start_date


# Need to be able to override the Default timestamp for start date
INSERT INTO Contract(
   company_id,
   responsible_id,
   acv,
   initial_amount,
   start_date,
   service_type,
   contract_type,
   manager_id
   ) VALUES(
   1,
   1,
   85000,
   10000,
```

```
    "2016-08-17 11:04:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);

# Jims Shirt Locker has company_id =2
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    2,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 2),
    100000,
    10000,
    "2017-10-17 11:30:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);

# The Wheel Pizza has company_id = 3
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    3,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 3),
    100000,
    10000,
    "2017-11-15 10:30:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
```

```
    1);

# Electronic Box has company_id = 4
INSERT INTO Contract(
    company_id,
    responsible_id,
    acv,
    initial_amount,
    start_date,
    service_type,
    contract_type,
    manager_id
    ) VALUES(
    4,
    (SELECT Responsible.id FROM Responsible WHERE Responsible.company_id = 4),
    100000,
    10000,
    "2017-12-11 11:31:23",
    1,
    (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE "Gold"),
    1);


 SELECT DISTINCT Company.name FROM Company, Contract, Contract_type WHERE
        Company.id = Contract.company_id AND Contract.contract_type LIKE
        (SELECT Contract_type.id FROM Contract_type WHERE Contract_type.name LIKE
"Gold") AND
        Contract.start_date BETWEEN "2017-01-01 00:00:00" AND "2017-12-31 23:59:59";

 # We need to be able to determine the number of contracts in each year
 SELECT COUNT(c1.id) AS id_2016, COUNT(c2.id) AS id_2017 FROM
    Contract AS c1, Contract AS c2
    GROUP BY c1.id;
    WHERE c1.start_date BETWEEN "2016-01-01 00:00:00" AND "2016-12-31 23:59:59";

     WHERE
    c1.start_date BETWEEN "2016-01-01 00:00:00" AND "2016-12-31 23:59:59"
    ;
    DISTINCT c1.acv AS acv_2016
    COUNT(c1.id) AS Contract_2016, COUNT(c2.id)
```