NAME: ANANYA PRASAD

REGNO : 20BCE10093

ASSIGNMENT 2

Q1

```
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.7.20-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create Payroll;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'Payroll' at line 1
mysql> create database Payroll;
Query OK, 1 row affected (0.01 sec)

mysql> use Payroll;
Database changed
mysql> create table payroll(empid int(3) primary key not null, name varchar(20), gross_salary float(20),department varchar(20), DA float(10), TA float(10), HRA float(10), jdate date);
Query OK, 0 rows affected (0.07 sec)

mysql> desc payroll;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| empid        | int(3)      | NO   | PRI | NULL    |       |
| name         | varchar(20) | YES  |     | NULL    |       |
| gross_salary | float       | YES  |     | NULL    |       |
| department   | varchar(20) | YES  |     | NULL    |       |
| DA           | float       | YES  |     | NULL    |       |
| TA           | float       | YES  |     | NULL    |       |
| HRA          | float       | YES  |     | NULL    |       |
| jdate        | date        | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

```
8 rows in set (0.00 sec)

mysql> insert into payroll values(101, 'Tom', 25000, 'sales', 1000, 1000, 2000, '1994-02-11');
Query OK, 1 row affected (0.01 sec)

mysql> insert into payroll values(102, 'Sathiya', 26000, 'management', 1500, 1000, 2000, '1995-12-1');
Query OK, 1 row affected (0.00 sec)

mysql> insert into payroll values(103, 'Harry', 30000, 'sales', 2500, 1000, 1000, '1993-10-18');
Query OK, 1 row affected (0.00 sec)

mysql> insert into payroll values(104, 'Tim', 29000, 'management', 2000, 1500, 2000, '1995-10-8');
Query OK, 1 row affected (0.01 sec)

mysql> insert into payroll values(105, 'Garry', 33000, 'sales', 1000, 1500, 2000, '1992-08-19');
Query OK, 1 row affected (0.00 sec)

mysql> select * from payroll where department = 'sales';
+-------+-------+--------------+------------+------+------+------+------------+
| empid | name  | gross_salary | department | DA   | TA   | HRA  | jdate      |
+-------+-------+--------------+------------+------+------+------+------------+
|   101 | Tom   |        25000 | sales      | 1000 | 1000 | 2000 | 1994-02-11 |
|   103 | Harry |        30000 | sales      | 2500 | 1000 | 1000 | 1993-10-18 |
|   105 | Garry |        33000 | sales      | 1000 | 1500 | 2000 | 1992-08-19 |
+-------+-------+--------------+------------+------+------+------+------------+
3 rows in set (0.01 sec)

mysql> select * from payroll where gross_salary >= 26000;
+-------+---------+--------------+------------+------+------+------+------------+
| empid | name    | gross_salary | department | DA   | TA   | HRA  | jdate      |
+-------+---------+--------------+------------+------+------+------+------------+
|   102 | Sathiya |        26000 | management | 1500 | 1000 | 2000 | 1995-12-01 |
|   103 | Harry   |        30000 | sales      | 2500 | 1000 | 1000 | 1993-10-18 |
|   104 | Tim     |        29000 | management | 2000 | 1500 | 2000 | 1995-10-08 |
|   105 | Garry   |        33000 | sales      | 1000 | 1500 | 2000 | 1992-08-19 |
+-------+---------+--------------+------------+------+------+------+------------+
4 rows in set (0.01 sec)
```

```
mysql> select DA, TA, HRA from payroll where name = 'Sathiya';
+------+------+------+
| DA   | TA   | HRA  |
+------+------+------+
| 1500 | 1000 | 2000 |
+------+------+------+
1 row in set (0.00 sec)
```

```
mysql> select * from payroll where jdate between '2022-04-10' and '2022-07-02';
Empty set (0.00 sec)

mysql>
```

```
mysql> select name,department, MAX(gross_salary) from payroll group by department;
+---------+------------+-------------------+
| name    | department | MAX(gross_salary) |
+---------+------------+-------------------+
| Sathiya | management |             29000 |
| Tom     | sales      |             33000 |
+---------+------------+-------------------+
2 rows in set (0.00 sec)
```

Q2

```
mysql> use Payroll;
Database changed
mysql> desc supplier;
ERROR 1146 (42S02): Table 'payroll.supplier' doesn't exist
mysql> create table supplier(supplier_no int(3) primary key not null, supplier_name varchar(20), supplier_city varchar(20));
Query OK, 0 rows affected (0.07 sec)

mysql> create table part(part_no int(3) primary key not null, part_name varchar(20), weight float(3), quantity int(3), color varchar(10));
Query OK, 0 rows affected (0.06 sec)

mysql> create table supply(supplier_no int(3) primary key not null, part_no int(3), quantity int(3));
Query OK, 0 rows affected (0.07 sec)

mysql> desc supplier;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| supplier_no   | int(3)      | NO   | PRI | NULL    |       |
| supplier_name | varchar(20) | YES  |     | NULL    |       |
| supplier_city | varchar(20) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)

mysql> desc part
    -> ;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| part_no   | int(3)      | NO   | PRI | NULL    |       |
| part_name | varchar(20) | YES  |     | NULL    |       |
| weight    | float       | YES  |     | NULL    |       |
| quantity  | int(3)      | YES  |     | NULL    |       |
| color     | varchar(10) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> desc supply;
+-------------+--------+------+-----+---------+-------+
| Field       | Type   | Null | Key | Default | Extra |
+-------------+--------+------+-----+---------+-------+
| supplier_no | int(3) | NO   | PRI | NULL    |       |
| part_no     | int(3) | YES  |     | NULL    |       |
| quantity    | int(3) | YES  |     | NULL    |       |
+-------------+--------+------+-----+---------+-------+
3 rows in set (0.01 sec)

mysql> insert into supplier values(101, 'Anne', 'Delhi');
Query OK, 1 row affected (0.01 sec)

mysql> insert into supplier values(102, 'Bella', 'Jaipur');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> insert into supplier values(101, 'Anne', 'Delhi');
Query OK, 1 row affected (0.01 sec)

mysql> insert into supplier values(102, 'Bella', 'Jaipur');
Query OK, 1 row affected (0.01 sec)

mysql> insert into supplier values(103, 'Tom', 'Mumbai');
Query OK, 1 row affected (0.01 sec)

mysql> insert into supplier values(104, 'Harry', 'Chennai');
Query OK, 1 row affected (0.01 sec)

mysql> insert into supplier values(105, 'Macy', 'Kolkata');
Query OK, 1 row affected (0.01 sec)

mysql> select * from supplier;
+-------------+---------------+---------------+
| supplier_no | supplier_name | supplier_city |
+-------------+---------------+---------------+
|         101 | Anne          | Delhi         |
|         102 | Bella         | Jaipur        |
|         103 | Tom           | Mumbai        |
|         104 | Harry         | Chennai       |
|         105 | Macy          | Kolkata       |
+-------------+---------------+---------------+
5 rows in set (0.00 sec)

mysql> insert into part values(001, 'Light', 0.5, 50, 'Yellow');
Query OK, 1 row affected (0.01 sec)

mysql> insert into part values(002, 'Cover', 0.25, 30, 'Blue');
Query OK, 1 row affected (0.01 sec)

mysql> insert into part values(003, 'Lamp', 2.25, 45, 'Red');
Query OK, 1 row affected (0.01 sec)

mysql> insert into part values(004, 'Cushion', 2.00, 35, 'Green');
Query OK, 1 row affected (0.01 sec)

mysql> select * from part;
+---------+-----------+--------+----------+--------+
| part_no | part_name | weight | quantity | color  |
+---------+-----------+--------+----------+--------+
|       1 | Light     |    0.5 |       50 | Yellow |
|       2 | Cover     |   0.25 |       30 | Blue   |
|       3 | Lamp      |   2.25 |       45 | Red    |
|       4 | Cushion   |      2 |       35 | Green  |
+---------+-----------+--------+----------+--------+
4 rows in set (0.00 sec)
```

```
mysql> insert into supply values(101, 001, 10);
Query OK, 1 row affected (0.01 sec)

mysql> insert into supply values(102, 003, 15);
Query OK, 1 row affected (0.01 sec)

mysql> insert into supply values(103, 002, 15);
Query OK, 1 row affected (0.01 sec)

mysql> select * from supply;
+-------------+---------+----------+
| supplier_no | part_no | quantity |
+-------------+---------+----------+
|         101 |       1 |       10 |
|         102 |       3 |       15 |
|         103 |       2 |       15 |
+-------------+---------+----------+
3 rows in set (0.00 sec)

mysql>
```

```
mysql> select p.part_name,s.supplier_no from part as p, supply as s where p.part_no = s.part_no;
+-----------+-------------+
| part_name | supplier_no |
+-----------+-------------+
| Light     |         101 |
| Cover     |         103 |
| Cover     |         104 |
| Lamp      |         102 |
+-----------+-------------+
4 rows in set (0.01 sec)
```

```
mysql> select supplier_name, color from supplier, part where color = 'red';
+---------------+-------+
| supplier_name | color |
+---------------+-------+
| Anne          | Red   |
| Bella         | Red   |
| Tom           | Red   |
| Harry         | Red   |
| Macy          | Red   |
+---------------+-------+
5 rows in set (0.01 sec)
```

Q3

```
mysql> use assign;
Database changed
mysql> create table employee;
ERROR 1113 (42000): A table must have at least 1 column
mysql> create table employee(emp_name varchar(30), street varchar(40), city varchar(50));
Query OK, 0 rows affected (0.07 sec)

mysql> create table company(emp_name varchar(30), city varchar(50));
Query OK, 0 rows affected (0.06 sec)

mysql> create table works(emp_name varchar(30), company_name varchar(50), salary int(100));
Query OK, 0 rows affected (0.05 sec)

mysql> create table manages(emp_name varchar(30), manager_name varchar(50));
Query OK, 0 rows affected (0.06 sec)

mysql> desc employee;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| emp_name | varchar(30) | YES  |     | NULL    |       |
| street   | varchar(40) | YES  |     | NULL    |       |
| city     | varchar(50) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)

mysql> desc works;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| emp_name     | varchar(30) | YES  |     | NULL    |       |
| company_name | varchar(50) | YES  |     | NULL    |       |
| salary       | int(100)    | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc company;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| emp_name | varchar(30) | YES  |     | NULL    |       |
| city     | varchar(50) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
2 rows in set (0.01 sec)
```

```
mysql> desc manages;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| emp_name     | varchar(30) | YES  |     | NULL    |       |
| manager_name | varchar(50) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
2 rows in set (0.01 sec)
```

3(a) Select norms employee-name, city from works, employee where
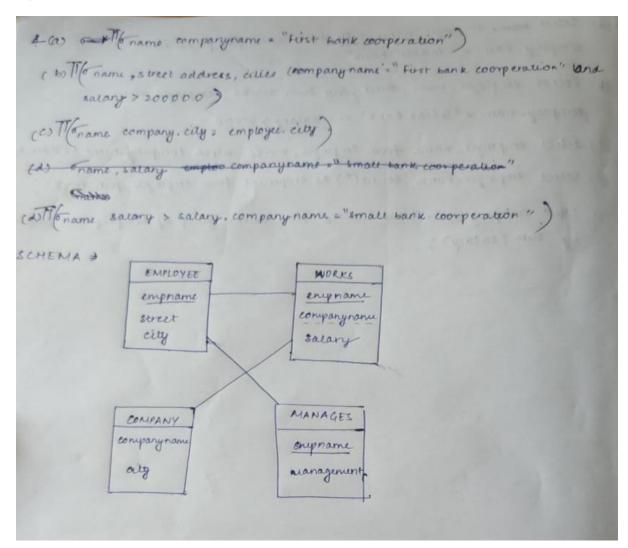company-name = "Indian Bank";

(b) Select employee-name, street, city from works, employee where
company-name = "Indian Bank" and salary > 25000;

(c) Select employee-name from employee, works where company-name != 'Indian Bank'

(d) Select employee-name count(*) as empcount from employees join works;

(e) Select company-name, sum(salary) from works group by company-name order
by sum(salary);

Q4

4 (a) σ→*Π(name companyname = "First bank coorperation")

(b) Π(name, street address, cities (company name = "First bank coorperation" and
salary > 200000)

(c) Π(name company.city = employee.city)

(d) σname, salary emplo companyname = "small bank coorperation"

(e) Π(name salary > salary.company name = "small bank coorperation")

SCHEMA ⇒

Relational Query

1 (a) Π($\sigma_{name,\ empid}$)(department = 'sales') (payroll)

(b) Π($R,\ TA,\ HR$) (payroll)

(c) $\sigma_{(DA,TA,HRA)}$ (name = 'sathiya') (payroll)

(d) $\sigma_{MAX\ (salary)}$ (department. payroll)

(e) σ_{*}(jdate > 10-APR-22 to jdate < 2-JUL-22) (payroll)

2 (a) $\sigma_{(part.name)}$ part.supplier = ~~supply~~.item.supplier

(b) $\sigma_{(part\ supplier.name\ ,\ part.color = 'Red')}$

(c) $\sigma_{(name,\ avg\ (part.color = 'blue')\ >\ avg\ ,\ supplier.city\ )}$

(d) $\sigma_{(name,\ quantity\ >\ 2\ )}$ supplier.