

ASSIGNMENT 1

Viewing The Existing Databases, Switching to the Desired Database:

```
mysql> show databases;
+-----+
| Database |
+-----+
| 20bcs042 |
| demo1    |
| information_schema |
| mysql     |
| performance_schema |
| sys       |
+-----+
6 rows in set (0.04 sec)
```

Using 20BCS042 database CREATING tables:

```
mysql> CREATE TABLE Employee
  -> (Fname VARCHAR(20) NOT NULL, Minit CHAR, Lname VARCHAR(20) NOT NULL, Ssn CHAR(9) NOT NULL, Bdate DATE,
  -> Address VARCHAR(50), Gender CHAR, Salary DECIMAL(10,2), Super_ssn CHAR(9), Dno INT NOT NULL, PRIMARY KEY(Ssn));
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> CREATE TABLE Department
  -> (Dname VARCHAR(20) NOT NULL, Dnumber INT NOT NULL, Mgr_ssn CHAR(9) NOT NULL, Mgr_start_date DATE,
  -> PRIMARY KEY(Dnumber), UNIQUE(Dname), FOREIGN KEY(Mgr_ssn) REFERENCES Employee(Ssn));
Query OK, 0 rows affected (0.10 sec)
```

DESCRIBING TABLES:

```
mysql> describe department;
```

| Field | Type | Null | Key | Default | Extra |
|----------------|-------------|------|-----|---------|-------|
| Dname | varchar(15) | NO | PRI | NULL | |
| Dnumber | int | NO | | NULL | |
| Mgr_ssn | char(9) | NO | MUL | NULL | |
| Mgr_start_date | date | NO | | NULL | |

```
4 rows in set (0.01 sec)
```

```
mysql> describe employee;
```

| Field | Type | Null | Key | Default | Extra |
|-----------|---------------|------|-----|---------|-------|
| Fname | varchar(15) | NO | | NULL | |
| Minit | char(1) | YES | | NULL | |
| Lname | varchar(15) | NO | | NULL | |
| Ssn | char(9) | NO | PRI | NULL | |
| Bdate | date | YES | | NULL | |
| Address | varchar(30) | YES | | NULL | |
| Sex | char(1) | YES | | NULL | |
| Salary | decimal(10,2) | YES | | NULL | |
| Super_ssn | char(9) | YES | | NULL | |
| Dno | int | NO | | NULL | |

```
10 rows in set (0.00 sec)
```

```
mysql>
```

Inserting values into the Table (Employee):

```
mysql> INSERT INTO Employee VALUES
-> ('John', 'B', 'Smith', '123456789', '1965-01-09', '731 Fondren, Houston, TX', 'M', 30000.00, '333445555', 5),
-> ('Franklin', 'T', 'Wong', '333445555', '1955-12-08', '638 Voss, Houston, TX', 'M', 40000.00, '888665555', 5),
-> ('Alicia', 'J', 'Zelaya', '999887777', '1968-01-19', '3321 Castle, Spring, TX', 'F', 25000.00, '987654321', 4),
-> ('Jennifer', 'S', 'Wallace', '987654321', '1941-06-20', '291 Berry, Bellaire, TX', 'F', 43000.00, '888665555', 4),
-> ('Ramesh', 'K', 'Narayan', '666884444', '1962-09-15', '975 Fire Oak, Humble, TX', 'M', 38000.00, '333445555', 5),
-> ('Joyce', 'A', 'English', '453453453', '1972-07-31', '5631 Rice, Houston, TX', 'f', 25000.00, '333445555', 5),
-> ('Ahmad', 'V', 'Jabbar', '987987987', '1969-03-29', '980 Dallas, Houston, TX', 'M', 25000.00, '987654321', 4),
-> ('James', 'E', 'Borg', '888665555', '1973-11-10', '450 Stone, Houston, TX', 'M', 55000.00, NULL, 1);
Query OK, 8 rows affected (0.03 sec)
Records: 8  Duplicates: 0  Warnings: 0
```

Selecting everything from the Table (Employee):

```
mysql> SELECT * from Employee;
```

| Fname | Minit | Lname | Ssn | Bdate | Address | Sex | Salary | Super_ssn | Dno |
|----------|-------|---------|-----------|------------|--------------------------|-----|----------|-----------|-----|
| John | B | Smith | 123456789 | 1965-01-09 | 731 Fondren, Houston, TX | M | 30000.00 | 333445555 | 5 |
| Franklin | T | Wong | 333445555 | 1955-12-08 | 638 Voss, Houston, TX | M | 40000.00 | 888665555 | 5 |
| Joyce | A | English | 453453453 | 1972-07-31 | 5631 Rice, Houston, TX | f | 25000.00 | 333445555 | 5 |
| Ramesh | K | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX | M | 38000.00 | 333445555 | 5 |
| James | E | Borg | 888665555 | 1973-11-10 | 450 Stone, Houston, TX | M | 55000.00 | NULL | 1 |
| Jennifer | S | Wallace | 987654321 | 1941-06-20 | 291 Berry, Bellaire, TX | F | 43000.00 | 888665555 | 4 |
| Ahmad | V | Jabbar | 987987987 | 1969-03-29 | 980 Dallas, Houston, TX | M | 25000.00 | 987654321 | 4 |
| Alicia | J | Zelaya | 999887777 | 1968-01-19 | 3321 Castle, Spring, TX | F | 25000.00 | 987654321 | 4 |

```
8 rows in set (0.00 sec)
```

Inserting values into the Table (Department):

```
mysql> INSERT INTO Department VALUES
-> ('Research', 5, '333445555', '1988-05-22'),
-> ('Administration', 4, '987654321', '1995-01-01'),
-> ('Headquarters', 1, '888665555', '1981-06-19');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

Selecting everything from the Table (Department):

```
mysql> SELECT * from Department;
+-----+-----+-----+-----+
| Dname          | Dnumber | Mgr_ssn  | Mgr_start_date |
+-----+-----+-----+-----+
| Administration | 4       | 987654321 | 1995-01-01     |
| Headquarters   | 1       | 888665555 | 1981-06-19     |
| Research       | 5       | 333445555 | 1988-05-22     |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

Queries using the created tables

Query-1: Viewing the tables in the database.

```
mysql> show tables;
+-----+
| Tables_in_20bcs042 |
+-----+
| department          |
| employee            |
+-----+
2 rows in set (0.01 sec)
```

Query-2: Retrieve the birth date and address of the employee(s) whose name is 'John B. Smith'.

```
mysql> SELECT Bdate, Address
-> FROM Employee
-> WHERE Fname='John' AND Minit='B' AND Lname='Smith';
```

| Bdate | Address |
|------------|--------------------------|
| 1965-01-09 | 731 Fondren, Houston, TX |

1 row in set (0.00 sec)

Query-3: Retrieve the name and address of all employees who work for the 'Research' department.

```
mysql> SELECT Fname, Lname, Address
-> FROM Employee, Department
-> WHERE Dname='Research' AND Dnumber=Dno;
```

| Fname | Lname | Address |
|----------|---------|--------------------------|
| John | Smith | 731 Fondren, Houston, TX |
| Franklin | Wong | 638 Voss, Houston, TX |
| Joyce | English | 5631 Rice, Houston, TX |
| Ramesh | Narayan | 975 Fire Oak, Humble, TX |

4 rows in set (0.00 sec)

Query-4: Select all EMPLOYEE Ssns in the database.

```
mysql> SELECT Ssn
-> FROM Employee;
```

| Ssn |
|-----------|
| 123456789 |
| 333445555 |
| 453453453 |
| 666884444 |
| 888665555 |
| 987654321 |
| 987987987 |
| 999887777 |

Query-5: Select all combinations of EMPLOYEE Ssn and DEPARTMENT Dname in the database.

```
mysql> SELECT Ssn, Dname  
-> FROM Employee, Department;
```

| Ssn | Dname |
|-----------|----------------|
| 123456789 | Administration |
| 123456789 | Headquarters |
| 123456789 | Research |
| 333445555 | Administration |
| 333445555 | Headquarters |
| 333445555 | Research |
| 453453453 | Administration |
| 453453453 | Headquarters |
| 453453453 | Research |
| 666884444 | Administration |
| 666884444 | Headquarters |
| 666884444 | Research |
| 888665555 | Administration |
| 888665555 | Headquarters |
| 888665555 | Research |
| 987654321 | Administration |
| 987654321 | Headquarters |
| 987654321 | Research |
| 987987987 | Administration |
| 987987987 | Headquarters |
| 987987987 | Research |
| 999887777 | Administration |
| 999887777 | Headquarters |
| 999887777 | Research |

```
24 rows in set (0.00 sec)
```

Query-6: Retrieve the salary of every employee.

```
mysql> SELECT ALL Fname, Lname, Salary
-> FROM Employee;
```

| Fname | Lname | Salary |
|----------|---------|----------|
| John | Smith | 30000.00 |
| Franklin | Wong | 40000.00 |
| Joyce | English | 25000.00 |
| Ramesh | Narayan | 38000.00 |
| James | Borg | 55000.00 |
| Jennifer | Wallace | 43000.00 |
| Ahmad | Jabbar | 25000.00 |
| Alicia | Zelaya | 25000.00 |

8 rows in set (0.00 sec)

Query-8: Retrieve all employees whose address is in Houston,

```
mysql> SELECT Fname, Lname
-> FROM Employee
-> WHERE Address LIKE '%Houston, TX%';
```

| Fname | Lname |
|----------|---------|
| John | Smith |
| Franklin | Wong |
| Joyce | English |
| James | Borg |
| Ahmad | Jabbar |

5 rows in set (0.00 sec)

Query-7: Retrieve all distinct salary values.

```
mysql> SELECT DISTINCT Salary
-> FROM Employee;
```

| Salary |
|----------|
| 30000.00 |
| 40000.00 |
| 25000.00 |
| 38000.00 |
| 55000.00 |
| 43000.00 |

6 rows in set (0.00 sec)

Query-9: Retrieve all employees in department 5 whose salary is between \$30,000 and \$40,000.

```
mysql> SELECT *
-> FROM Employee
-> WHERE (Salary BETWEEN 30000 AND 40000) AND Dno=5;
```

| Fname | Minit | Lname | Ssn | Bdate | Address | Sex | Salary | Super_ssn | Dno |
|----------|-------|---------|-----------|------------|--------------------------|-----|----------|-----------|-----|
| John | B | Smith | 123456789 | 1965-01-09 | 731 Fondren, Houston, TX | M | 30000.00 | 333445555 | 5 |
| Franklin | T | Wong | 333445555 | 1955-12-08 | 638 Voss, Houston, TX | M | 40000.00 | 888665555 | 5 |
| Ramesh | K | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX | M | 38000.00 | 333445555 | 5 |

3 rows in set (0.00 sec)

Query-10: Retrieve all employees whose supervisor is 'James E. Borg'.

```
mysql> SELECT *
-> FROM Employee
-> WHERE Super_ssn='888665555';
```

| Fname | Minit | Lname | Ssn | Bdate | Address | Sex | Salary | Super_ssn | Dno |
|----------|-------|---------|-----------|------------|-------------------------|-----|----------|-----------|-----|
| Franklin | T | Wong | 333445555 | 1955-12-08 | 638 Voss, Houston, TX | M | 40000.00 | 888665555 | 5 |
| Jennifer | S | Wallace | 987654321 | 1941-06-20 | 291 Berry, Bellaire, TX | F | 43000.00 | 888665555 | 4 |

2 rows in set (0.00 sec)

Query-11: Retrieve all male employees from the database.

```
mysql> SELECT *
-> FROM Employee
-> WHERE Sex='M';
```

| Fname | Minit | Lname | Ssn | Bdate | Address | Sex | Salary | Super_ssn | Dno |
|----------|-------|---------|-----------|------------|--------------------------|-----|----------|-----------|-----|
| John | B | Smith | 123456789 | 1965-01-09 | 731 Fondren, Houston, TX | M | 30000.00 | 333445555 | 5 |
| Franklin | T | Wong | 333445555 | 1955-12-08 | 638 Voss, Houston, TX | M | 40000.00 | 888665555 | 5 |
| Ramesh | K | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX | M | 38000.00 | 333445555 | 5 |
| James | E | Borg | 888665555 | 1973-11-10 | 450 Stone, Houston, TX | M | 55000.00 | NULL | 1 |
| Ahmad | V | Jabbar | 987987987 | 1969-03-29 | 980 Dallas, Houston, TX | M | 25000.00 | 987654321 | 4 |

5 rows in set (0.00 sec)