LAB
ASSIGNMENT – 04

Table Name : Manufacturer

Attribute	Data Type	Primary	Foreign	Constraint
Code	Int	Y		Not Null
Name	Char			Not Null

Table Name : Products

Attribute	Data Type	Primary	Foreign	Constraint
Code	INT	Y		Not Null
Name	Char			Not Null
Price	Decimal			Not Null
Manufacturer	Int		Manufacturer(Code)	Not Null

Insert following data into Manufacturer Table.

Code	Name
1	Sony
2	Creative Labs
3	Hewlett-Packard
4	Iomega
5	Fujitsu
6	Winchester

Insert following data into Products Table.

Code	Name	Price	Manufacturer
1	Hard Drive	240	5
2	Memory	120	6
3	Zip Drive	150	4
4	Floppy Disk	5	6
5	Monitor	240	1
6	DVD Drive	180	2
7	CD Drive	90	2
8	Printer	270	3
9	Tone Cartridge	66	3
10	DVD Burner	180	2

```
mysql> use sonali_it86;
Database changed

mysql> CREATE TABLE Manufacturer(
-> Code INT NOT NULL,
   -> Name CHAR(20) NOT NULL,
   -> PRIMARY KEY (Code)
   -> );
Query OK, 0 rows affected (0.04 sec)

mysql> DESCRIBE Manufacturer;
+-------+----------+------+-----+---------+-------+
| Field | Type     | Null | Key | Default | Extra |
+-------+----------+------+-----+---------+-------+
| Code  | int      | NO   | PRI | NULL    |       |
| Name  | char(20) | NO   |     | NULL    |       |
+-------+----------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> CREATE TABLE Products(
-> Code INT NOT NULL,
   -> Name CHAR(20) NOT NULL,
   -> Price DECIMAL(3,0) NOT NULL,
   -> Manufacturers INT NOT NULL,
   -> PRIMARY KEY (Code),
   -> FOREIGN KEY (Manufacturer) REFERENCES Manufacturer(Code)
   -> );
Query OK, 0 rows affected (0.09 sec)

mysql> DESCRIBE Products;
```

```
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| Code         | int          | NO   | PRI | NULL    |       |
| Name         | char(20)     | NO   |     | NULL    |       |
| Price        | decimal(3,0) | NO   |     | NULL    |       |
| Manufacturer | int          | NO   | MUL | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Manufacturer
    -> VALUES
    -> (1,"Sony"),
    -> (2,"Creative Labs"),
    -> (3,"Hewlett-Packard"),
    -> (4,"Iomega"),
    -> (5,"Fujitsu"),
    -> (6,"Winchester");
```

```
Query OK, 6 rows affected (0.02 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM Manufacturer;
```

```
+------+-----------------+
| Code | Name            |
+------+-----------------+
|    1 | Sony            |
|    2 | Creative Labs   |
|    3 | Hewlett-Packard |
|    4 | Iomega          |
|    5 | Fujitsu         |
|    6 | Winchester      |
+------+-----------------+
6 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Products
-> VALUES
    -> (1, "Hard Drive", 240, 5),
    -> (2, "Memory", 120, 6),
    -> (3, "Zip Drive", 150, 4),
    -> (4, "Floppy Disk", 5, 6),
    -> (5, "Monitor", 240, 1),
```

```
-> (6, "DVD Drive", 180, 2),
-> (7, "CD Drive", 90, 2),
-> (8, "Printer", 270, 3),
-> (9, "Tone Cartridge", 66, 3),
-> (10, "DVD Burner", 180, 2);
```

```
Query OK, 10 rows affected (0.04 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql> SELECT * FROM Products;

```
+------+----------------+-------+--------------+
| Code | Name           | Price | Manufacturer |
+------+----------------+-------+--------------+
|    1 | Hard Drive     |   240 |            5 |
|    2 | Memory         |   120 |            6 |
|    3 | Zip Drive      |   150 |            4 |
|    4 | Floppy Disk    |     5 |            6 |
|    5 | Monitor        |   240 |            1 |
|    6 | DVD Drive      |   180 |            2 |
|    7 | CD Drive       |    90 |            2 |
|    8 | Printer        |   270 |            3 |
|    9 | Tone Cartridge |    66 |            3 |
|   10 | DVD Burner     |   180 |            2 |
+------+----------------+-------+--------------+
10 rows in set (0.00 sec)
```

Q.1. Select the names of all product in the store.

```
mysql> select DISTINCT Name
-> from Products;
```

```
+----------------+
| Name           |
+----------------+
| Hard Drive     |
| Memory         |
| Zip Drive      |
| Floppy Disk    |
| Monitor        |
| DVD Drive      |
| CD Drive       |
| Printer        |
| Tone Cartridge |
| DVD Burner     |
+----------------+
10 rows in set (0.01 sec)
```

Q.2. Select the names and the prices of all the products in the store.

```
mysql> select Name, Price
-> from Products;
```

```
+----------------+-------+
| Name           | Price |
+----------------+-------+
| Hard Drive     |   240 |
| Memory         |   120 |
| Zip Drive      |   150 |
| Floppy Disk    |     5 |
| Monitor        |   240 |
| DVD Drive      |   180 |
| CD Drive       |    90 |
| Printer        |   270 |
| Tone Cartridge |    66 |
| DVD Burner     |   180 |
+----------------+-------+
10 rows in set (0.00 sec)
```

Q.3. Select the name of products with price less than or equal to $200.

```
mysql> select Name
   -> from Products
   -> WHERE Price <= 200;
```

```
+----------------+
| Name           |
+----------------+
| Memory         |
| Zip Drive      |
| Floppy Disk    |
| DVD Drive      |
| CD Drive       |
| Tone Cartridge |
| DVD Burner     |
+----------------+
7 rows in set (0.03 sec)
```

Q.4. Select all the products with a price between $60 and $120.

```
mysql> select *
   -> from Products
   -> WHERE Price BETWEEN 60 AND 120;
```

```
+------+----------------+-------+--------------+
| Code | Name           | Price | Manufacturer |
+------+----------------+-------+--------------+
|    2 | Memory         |   120 |            6 |
|    7 | CD Drive       |    90 |            2 |
|    9 | Tone Cartridge |    66 |            3 |
+------+----------------+-------+--------------+
3 rows in set (0.01 sec)
```

Q.5. Select name and price in cents(i.e. the price multiply by 100).

```
mysql> select Name, Price*100 AS "Price in Cents"
    -> from Products;
```

```
+----------------+----------------+
| Name           | Price in Cents |
+----------------+----------------+
| Hard Drive     |          24000 |
| Memory         |          12000 |
| Zip Drive      |          15000 |
| Floppy Disk    |            500 |
| Monitor        |          24000 |
| DVD Drive      |          18000 |
| CD Drive       |           9000 |
| Printer        |          27000 |
| Tone Cartridge |           6600 |
| DVD Burner     |          18000 |
+----------------+----------------+
10 rows in set (0.00 sec)
```

Q.6. Compute the average price of all the product.

```
mysql> select AVG(Price)
    -> from Products;
```

```
+------------+
| AVG(Price) |
+------------+
|   154.1000 |
+------------+
1 row in set (0.04 sec)
```

Q.7. Compute average price of all products with manufacturer code equal to 2.

```
mysql> select AVG(Price)
    -> from Products
    -> WHERE Manufacturer = 2;
```

```
+------------+
| AVG(Price) |
+------------+
|   150.0000 |
+------------+
1 row in set (0.01 sec)
```

Q.8. Compute the number of products with a price larger then or equal to $180.

```
mysql> select COUNT(*)
    -> from Products
```

```
-> WHERE Price >= 180;
```

```
+----------+
| COUNT(*) |
+----------+
|        5 |
+----------+
1 row in set (0.03 sec)
```

Q.9. Select the name and price of all products with a price larger then or equal to $180 and, sort first by price (in descending order), and then by name(in ascending order).

```
mysql> select Name, Price
-> from Products
   -> WHERE Price >= 180
   -> ORDER BY Price DESC, Name ASC;
```

```
+------------+-------+
| Name       | Price |
+------------+-------+
| Printer    |   270 |
| Hard Drive |   240 |
| Monitor    |   240 |
| DVD Burner |   180 |
| DVD Drive  |   180 |
+------------+-------+
5 rows in set (0.03 sec)
```

Q.10. Select all the data from products, including all the data for each products manufacturer.

```
mysql> select Products.*, Manufacturer.Name
   -> from Products
   -> LEFT JOIN Manufacturer ON
   -> Products.Manufacturer = Manufacturer.Code;
```

```
+------+----------------+-------+--------------+-----------------+
| Code | Name           | Price | Manufacturer | Name            |
+------+----------------+-------+--------------+-----------------+
|    1 | Hard Drive     |   240 |            5 | Fujitsu         |
|    2 | Memory         |   120 |            6 | Winchester      |
|    3 | Zip Drive      |   150 |            4 | Iomega          |
|    4 | Floppy Disk    |     5 |            6 | Winchester      |
|    5 | Monitor        |   240 |            1 | Sony            |
|    6 | DVD Drive      |   180 |            2 | Creative Labs   |
|    7 | CD Drive       |    90 |            2 | Creative Labs   |
|    8 | Printer        |   270 |            3 | Hewlett-Packard |
|    9 | Tone Cartridge |    66 |            3 | Hewlett-Packard |
|   10 | DVD Burner     |   180 |            2 | Creative Labs   |
+------+----------------+-------+--------------+-----------------+
10 rows in set (0.00 sec)
```

Q. 11. Select the product name, Price , and manufacturer names of all products.

```
mysql> select Products.Name, Products.Price, Manufacturer.Name AS "Manufacturer
Name"
   -> from Products
   -> LEFT JOIN Manufacturer ON
   -> Products.Manufacturer = Manufacturer.Code;
```

```
+----------------+-------+-------------------+
| Name           | Price | Manufacturer Name |
+----------------+-------+-------------------+
| Hard Drive     |   240 | Fujitsu           |
| Memory         |   120 | Winchester        |
| Zip Drive      |   150 | Iomega            |
| Floppy Disk    |     5 | Winchester        |
| Monitor        |   240 | Sony              |
| DVD Drive      |   180 | Creative Labs     |
| CD Drive       |    90 | Creative Labs     |
| Printer        |   270 | Hewlett-Packard   |
| Tone Cartridge |    66 | Hewlett-Packard   |
| DVD Burner     |   180 | Creative Labs     |
+----------------+-------+-------------------+
10 rows in set (0.03 sec)
```

Q. 12. Select the average price of each manufacturers products, showing only the manufacturer code.

```
mysql> select Manufacturer.Code, AVG(Products.Price) AS "Average Price"
   -> from Products
   -> JOIN Manufacturer ON
   -> Products.Manufacturer = Manufacturer.Code
   -> GROUP BY Manufacturer.Code;
```

```
+------+---------------+
| Code | Average Price |
+------+---------------+
|    1 |      240.0000 |
|    2 |      150.0000 |
|    3 |      168.0000 |
|    4 |      150.0000 |
|    5 |      240.0000 |
|    6 |       62.5000 |
+------+---------------+
5 rows in set (0.01 sec)
```

Q. 13. Select the average price of each manufacturers products, Showing the manufacturers name.

```
mysql> select Manufacturer.Name, AVG(Products.Price)
   -> from Manufacturer
-> JOIN Products ON
```

```
    -> Products.Manufacturer = Manufacturer.Code
-> GROUP BY Manufacturer.Name;
```

```
+-----------------+---------------------+
| Name            | AVG(Products.Price) |
+-----------------+---------------------+
| Sony            |            240.0000 |
| Creative Labs   |            150.0000 |
| Hewlett-Packard |            168.0000 |
| Iomega          |            150.0000 |
| Fujitsu         |            240.0000 |
| Winchester      |             62.5000 |
+-----------------+---------------------+
5 rows in set (0.01 sec)
```

Q. 14. Select the name of manufacturers whose product have an average price larger than or equal to $150.

```
mysql> select Manufacturer.Name
    -> from Products
    -> JOIN Manufacturer ON
    -> Products.Manufacturer = Manufacturer.Code
    -> GROUP BY Manufacturer.Name
    -> HAVING AVG(Products.Price) >= 150;
```

```
+-----------------+
| Name            |
+-----------------+
| Sony            |
| Creative Labs   |
| Hewlett-Packard |
| Iomega          |
| Fujitsu         |
+-----------------+
5 rows in set (0.01 sec)
```

Q. 15. Select the name and price of the cheapest product.

```
mysql> select Name, Price
-> from Products
    -> WHERE Price = (
    -> select MIN(Price)
    -> from Products
    -> );
```

```
+-------------+-------+
| Name        | Price |
+-------------+-------+
| Floppy Disk |     5 |
+-------------+-------+
1 row in set (0.01 sec)
```

```
mysql> select Name, Price
-> from Products
   -> ORDER BY Price
   -> LIMIT 1;
```

```
+-------------+-------+
| Name        | Price |
+-------------+-------+
| Floppy Disk |     5 |
+-------------+-------+
1 row in set (0.03 sec)
```

Q. 16. Select the name of each manufacturer along with the name and price of its most expensive product.

```
mysql> select M.Name, P.Name, P.Price
   -> from Products P
   -> JOIN Manufacturer M ON
   -> P.Manufacturer = M.Code
   -> JOIN(
   -> select Manufacturer, MAX(Price) AS Max_Price
   -> from Products
   -> GROUP BY Manufacturer
   -> ) AS Max ON P.Manufacturer = Max.Manufacturer AND P.Price =
Max.Max_Price;
```

```
+-----------------+------------+-------+
| Name            | Name       | Price |
+-----------------+------------+-------+
| Sony            | Monitor    |   240 |
| Creative Labs   | DVD Drive  |   180 |
| Creative Labs   | DVD Burner |   180 |
| Hewlett-Packard | Printer    |   270 |
| Iomega          | Zip Drive  |   150 |
| Fujitsu         | Hard Drive |   240 |
| Winchester      | Memory     |   120 |
+-----------------+------------+-------+
7 rows in set (0.00 sec)
```

Q. 17. Add a new product: Loudspeakers, $70, Manufacturer 2.

```
mysql> INSERT INTO Products
   -> VALUES
   -> (11, "Loudspeakers", 70, 2);
```

```
Query OK, 1 row affected (0.03 sec)
```

```
mysql> select *
    -> from Products;
```

```
+------+----------------+-------+--------------+
| Code | Name           | Price | Manufacturer |
+------+----------------+-------+--------------+
|    1 | Hard Drive     |   240 |            5 |
|    2 | Memory         |   120 |            6 |
|    3 | Zip Drive      |   150 |            4 |
|    4 | Floppy Disk    |     5 |            6 |
|    5 | Monitor        |   240 |            1 |
|    6 | DVD Drive      |   180 |            2 |
|    7 | CD Drive       |    90 |            2 |
|    8 | Printer        |   270 |            3 |
|    9 | Tone Cartridge |    66 |            3 |
|   10 | DVD Burner     |   180 |            2 |
|   11 | Loudspeakers   |    70 |            2 |
+------+----------------+-------+--------------+
11 rows in set (0.00 sec)
```

Q. 18. Update the name of product 8 to “Laser printer”.

```
mysql> UPDATE Products     ->
SET Name = "Laser printer"
    -> WHERE Code = 8;
```

```
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select *
    -> from Products;
```

```
+------+----------------+-------+--------------+
| Code | Name           | Price | Manufacturer |
+------+----------------+-------+--------------+
|    1 | Hard Drive     |   240 |            5 |
|    2 | Memory         |   120 |            6 |
|    3 | Zip Drive      |   150 |            4 |
|    4 | Floppy Disk    |     5 |            6 |
|    5 | Monitor        |   240 |            1 |
|    6 | DVD Drive      |   180 |            2 |
|    7 | CD Drive       |    90 |            2 |
|    8 | Laser printer  |   270 |            3 |
|    9 | Tone Cartridge |    66 |            3 |
|   10 | DVD Burner     |   180 |            2 |
|   11 | Loudspeakers   |    70 |            2 |
+------+----------------+-------+--------------+
11 rows in set (0.00 sec)
```

Q. 19. Apply a 10% discount to all products.

```
mysql> select Code, Name, (9*Price)/10 AS "10% discount", Manufacturer
    -> from Products;
```

Code	Name	10% discount	Manufacturer
1	Hard Drive	216.0000	5
2	Memory	108.0000	6
3	Zip Drive	135.0000	4
4	Floppy Disk	4.5000	6
5	Monitor	216.0000	1
6	DVD Drive	162.0000	2
7	CD Drive	81.0000	2
8	Laser printer	243.0000	3
9	Tone Cartridge	59.4000	3
10	DVD Burner	162.0000	2
11	Loudspeakers	63.0000	2

11 rows in set (0.00 sec)

Q. 20. Apply a 10% discount to all products with a price larger than or equal to $120.

```
mysql> select Code, Name, (9*Price)/10, Manufacturer
    -> from Products
    -> WHERE Price >= 120;
```

Code	Name	(9*Price)/10	Manufacturer
1	Hard Drive	216.0000	5
2	Memory	108.0000	6
3	Zip Drive	135.0000	4
5	Monitor	216.0000	1
6	DVD Drive	162.0000	2
8	Laser printer	243.0000	3
10	DVD Burner	162.0000	2

7 rows in set (0.00 sec)