MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

DATABASE MANAGEMENT SYSTEM

IEB20603

ASSIGNMENT 2

(MYSQL)

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SECTION A

Answer all of the following questions based on the table named CUSTOMER as shown below. Answer the questions by providing the screenshots (print screens) for the SQL statement query result sets.

Table: CUSTOMER

Cust_ID	Cust_Name	Phone	Fax
101	Ali	011-123456	03-3456789
102	Bella	012-234567	03-4567890
103	Cathy	013-345678	NULL
104	Dan	NULL	NULL
105	NULL	NULL	NULL
106	Ella	016-678901	03-6789012

Question 1

Write the CREATE DATABASE statement to create a database named ASSIGNMENT_yourname.

SQL statement screenshot:

```
mysql> create database ASSIGNMENT_Yahia;
Query OK, 1 row affected (0.04 sec)
```

Question 2

Use the ASSIGNMENT_yourname database.

SQL statement screenshot:

```
mysql> use assignment_yahia;
Database changed
```

Question 3

Write the CREATE TABLE statement to create a table named CUSTOMER based on the structure of the table shown above.

SQL statement screenshot:

```
mysql> create table CUSTOMER (
    -> Cust_ID int not null,
    -> Cust_Name varchar(30),
    -> Phone varchar(30),
    -> Fax varchar(30) );
Query OK, 0 rows affected (0.19 sec)

mysql> describe customer;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| Cust_ID   | int(11)     | NO   |     | NULL    |       |
| Cust_Name | varchar(30) | YES  |     | NULL    |       |
| Phone     | varchar(30) | YES  |     | NULL    |       |
| Fax       | varchar(30) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
4 rows in set (0.17 sec)
```

Question 4

Write the INSERT INTO statement to insert the six records for the CUSTOMER table.

SQL statement screenshot:

```
mysql> insert into customer(Cust_ID, Cust_Name, Phone, Fax) values
    -> (101, 'Ali', '011-123456', '03-3456789'),
    -> (102, 'Bella', '012-234567', '03-4567890'),
    -> (103, 'Cathy', '013-345678', 'NULL'),
    -> (104, 'Dan', 'NULL', 'NULL'),
    -> (105, 'NULL', 'NULL', 'NULL'),
    -> (106, 'Ella', '016-678901', '03-6789012');
Query OK, 6 rows affected (0.06 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

Question 5

Write the SELECT statement to display all the data in the CUSTOMER table.

SQL statement screenshot:

```
mysql> select * from customer;
+---------+-----------+------------+------------+
| Cust_ID | Cust_Name | Phone      | Fax        |
+---------+-----------+------------+------------+
|     101 | Ali       | 011-123456 | 03-3456789 |
|     102 | Bella     | 012-234567 | 03-4567890 |
|     103 | Cathy     | 013-345678 | NULL       |
|     104 | Dan       | NULL       | NULL       |
|     105 | NULL      | NULL       | NULL       |
|     106 | Ella      | 016-678901 | 03-6789012 |
+---------+-----------+------------+------------+
6 rows in set (0.00 sec)
```

Question 6

Write the UPDATE statement to modify the data in the CUSTOMER table by setting he Fax value to "03-3333000" for the column named Cust_ID which has the value of 103.

SQL statement screenshot

```
mysql> update customer
    -> set Fax='03-3333000'
    -> where Cust_ID=103;
Query OK, 1 row affected (0.07 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Question 7

Write the SELECT statement to return (display) all the data in the CUSTOMER table.

SQL statement screenshot:

```
mysql> select * from customer;
+---------+-----------+------------+------------+
| Cust_ID | Cust_Name | Phone      | Fax        |
+---------+-----------+------------+------------+
|     101 | Ali       | 011-123456 | 03-3456789 |
|     102 | Bella     | 012-234567 | 03-4567890 |
|     103 | Cathy     | 013-345678 | 03-3333000 |
|     104 | Dan       | NULL       | NULL       |
|     105 | NULL      | NULL       | NULL       |
|     106 | Ella      | 016-678901 | 03-6789012 |
+---------+-----------+------------+------------+
6 rows in set (0.00 sec)
```

Question 8

Write the DELETE statement to delete all the records in the CUSTOMER table.

SQL statement screenshot:

```
mysql> TRUNCATE TABLE customer;
Query OK, 0 rows affected (0.16 sec)

mysql> select * from customer;
Empty set (0.00 sec)
```

Question 9

Write the SQL statement to delete the CUSTOMER table.

SQL statement screenshot:

```
mysql> drop table customer;
Query OK, 0 rows affected (0.04 sec)

mysql> select * from customer;
ERROR 1146 (42S02): Table 'assignment_yahia.customer' doesn't exist
```

SECTION B

Answer all of the following questions based on the table named MICROWAVES as shown below. Answer the questions by providing the screenshots (print screens) for the SQL statement query result sets.

Table: MICROWAVES

ID	Maker	Model	Power
1	Sharp	R252SL	600
2	Sharp	R253SL	700
3	Sharp	R254SL	800
4	Sharp	R33STM	900
5	Sanyo	EMS3552	820
6	Sanyo	EMS3553	900
7	Panasonic	NNE441	850
8	Panasonic	NNE442	900
9	Daewoo	KDR3000	800
10	Daewoo	KDR3100	900

Question 1

Write the CREATE TABLE statement to create the MICROWAVES table as shown above.

SQL statement screenshot:

```
mysql> create table MICROWAVES (
    -> ID int not null,
    -> Maker varchar(30),
    -> Model varchar(30),
    -> Power int );
Query OK, 0 rows affected (0.24 sec)

mysql> describe microwaves;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| ID     | int(11)     | NO   |     | NULL    |       |
| Maker  | varchar(30) | YES  |     | NULL    |       |
| Model  | varchar(30) | YES  |     | NULL    |       |
| Power  | int(11)     | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

Question 2

Write the SQL statement to insert all the 10 records in the MICROWAVES table.

SQL statement screenshot:

```
mysql> insert into microwaves(ID, Maker, Model, Power) values
    -> (1, 'Sharp', 'R252SL', 600),
    -> (2, 'Sharp', 'R253SL', 700),
    -> (3, 'Sharp', 'R254SL', 800),
    -> (4, 'Sharp', 'R33STM', 900),
    -> (5, 'Sanyo', 'EMS3552', 820),
    -> (6, 'Sanyo', 'EMS3553', 900),
    -> (7, 'Panasonic', 'NNE441', 850),
    -> (8, 'Panasonic', 'NNE442', 900),
    -> (9, 'Daewoo', 'KDR3000', 800),
    -> (10, 'Daewoo', 'KDR3100', 900);
Query OK, 10 rows affected (0.04 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Question 3

Write the SQL statement to select all the records in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select * from microwaves;
+----+-----------+---------+-------+
| ID | Maker     | Model   | Power |
+----+-----------+---------+-------+
|  1 | Sharp     | R252SL  |   600 |
|  2 | Sharp     | R253SL  |   700 |
|  3 | Sharp     | R254SL  |   800 |
|  4 | Sharp     | R33STM  |   900 |
|  5 | Sanyo     | EMS3552 |   820 |
|  6 | Sanyo     | EMS3553 |   900 |
|  7 | Panasonic | NNE441  |   850 |
|  8 | Panasonic | NNE442  |   900 |
|  9 | Daewoo    | KDR3000 |   800 |
| 10 | Daewoo    | KDR3100 |   900 |
+----+-----------+---------+-------+
10 rows in set (0.00 sec)
```

Question 4

Write the SQL statement to return only distinct (different) values for the Maker column in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select distinct(Maker) from microwaves;
+-----------+
| Maker     |
+-----------+
| Sharp     |
| Sanyo     |
| Panasonic |
| Daewoo    |
+-----------+
4 rows in set (0.05 sec)
```

Question 5

Write the SQL statement to select Maker, Model and Power columns for the MICROWAVES table with a condition that the Power must contain values larger than 600.

SQL statement screenshot:

```
mysql> select Maker, Model, Power from microwaves where Power > 600;
+-----------+---------+-------+
| Maker     | Model   | Power |
+-----------+---------+-------+
| Sharp     | R253SL  |   700 |
| Sharp     | R254SL  |   800 |
| Sharp     | R33STM  |   900 |
| Sanyo     | EMS3552 |   820 |
| Sanyo     | EMS3553 |   900 |
| Panasonic | NNE441  |   850 |
| Panasonic | NNE442  |   900 |
| Daewoo    | KDR3000 |   800 |
| Daewoo    | KDR3100 |   900 |
+-----------+---------+-------+
9 rows in set (0.06 sec)
```

Question 6

Write the SQL statement to extract only those records with the value "Sharp" for the Maker column in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select ID, Maker, Model, Power from microwaves where Maker='Sharp';
+----+-------+--------+-------+
| ID | Maker | Model  | Power |
+----+-------+--------+-------+
|  1 | Sharp | R252SL |   600 |
|  2 | Sharp | R253SL |   700 |
|  3 | Sharp | R254SL |   800 |
|  4 | Sharp | R33STM |   900 |
+----+-------+--------+-------+
4 rows in set (0.03 sec)
```

Question 7

Write the SQL statement to extract only those records with the value "Sharp" for the Maker column, as well as those records with values larger than 700 for the Power column in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select ID, Maker, Model, Power from microwaves WHERE Maker='Sharp' AND Power > 700;
+----+-------+--------+-------+
| ID | Maker | Model  | Power |
+----+-------+--------+-------+
|  3 | Sharp | R254SL |   800 |
|  4 | Sharp | R33STM |   900 |
+----+-------+--------+-------+
2 rows in set (0.06 sec)
```

Question 8

Write the SQL statement to select all the records in the MICROWAVES table by sorting the records in ascending order through the Power column.

SQL statement screenshot:

```
mysql> select ID, Maker, Model, Power from microwaves order by Power;
+----+-----------+---------+-------+
| ID | Maker     | Model   | Power |
+----+-----------+---------+-------+
|  1 | Sharp     | R252SL  |   600 |
|  2 | Sharp     | R253SL  |   700 |
|  3 | Sharp     | R254SL  |   800 |
|  9 | Daewoo    | KDR3000 |   800 |
|  5 | Sanyo     | EMS3552 |   820 |
|  7 | Panasonic | NNE441  |   850 |
|  8 | Panasonic | NNE442  |   900 |
|  6 | Sanyo     | EMS3553 |   900 |
|  4 | Sharp     | R33STM  |   900 |
| 10 | Daewoo    | KDR3100 |   900 |
+----+-----------+---------+-------+
10 rows in set (0.00 sec)
```

Question 9

Using the IN operator, write the SQL statement to select all the records with the values of "Sharp" and "Daewoo" in the Maker column for the MICROWAVES table.

SQL statement screenshot:

```
mysql> select ID, Maker, Model, Power from microwaves where Maker IN('Sharp', 'Daewoo');
+----+--------+---------+-------+
| ID | Maker  | Model   | Power |
+----+--------+---------+-------+
|  1 | Sharp  | R252SL  |   600 |
|  2 | Sharp  | R253SL  |   700 |
|  3 | Sharp  | R254SL  |   800 |
|  4 | Sharp  | R33STM  |   900 |
|  9 | Daewoo | KDR3000 |   800 |
| 10 | Daewoo | KDR3100 |   900 |
+----+--------+---------+-------+
6 rows in set (0.01 sec)
```

Question 10

Write the SQL statement to return the total sum of the Power column.

SQL statement screenshot:

```
mysql> select sum(Power) from microwaves;
+------------+
| sum(Power) |
+------------+
|       8170 |
+------------+
1 row in set (0.05 sec)
```

Question 11

Write the SQL statement to return the number of rows in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select Maker, count(Model) from microwaves group by Maker;
+-----------+--------------+
| Maker     | count(Model) |
+-----------+--------------+
| Daewoo    |            2 |
| Panasonic |            2 |
| Sanyo     |            2 |
| Sharp     |            4 |
+-----------+--------------+
4 rows in set (0.00 sec)
```

Question 12

Write the SQL statement to return the average value of the Power column.

SQL statement screenshot:

```
mysql> select AVG(Power) from microwaves;
+------------+
| AVG(Power) |
+------------+
|   817.0000 |
+------------+
1 row in set (0.00 sec)
```

Question 13

Write the SELECT statement to return the group sum of the Power column by arranging identical data into groups in the Maker column for the MICROWAVES table.

SQL statement screenshot:

```
mysql> select Maker, SUM(Power) from microwaves group by Maker;
+-----------+------------+
| Maker     | SUM(Power) |
+-----------+------------+
| Daewoo    |       1700 |
| Panasonic |       1750 |
| Sanyo     |       1720 |
| Sharp     |       3000 |
+-----------+------------+
4 rows in set (0.02 sec)
```

Question 14

Write the SQL statement to select the records for Model and Power columns in the MICROWAVES table. Display the name "Tenaga" instead of "Power" for the Power column.

SQL statement screenshot:

```
mysql> ALTER TABLE microwaves CHANGE 'Power' 'Tenaga' int(11);
```

```
mysql> describe microwaves;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| ID     | int(11)     | NO   |     | NULL    |       |
| Maker  | varchar(30) | YES  |     | NULL    |       |
| Model  | varchar(30) | YES  |     | NULL    |       |
| Tenaga | int(11)     | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
4 rows in set (0.13 sec)
```

Question 15

Write the SQL statement to selects all the records with a Maker starting with "S" in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select Maker from microwaves where Maker like 'S%';
+-------+
| Maker |
+-------+
| Sharp |
| Sharp |
| Sharp |
| Sharp |
| Sanyo |
| Sanyo |
+-------+
6 rows in set (0.00 sec)
```

Question 16

Write the SQL statement to selects all the records with a Maker ending with "o" in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select Maker from microwaves where Maker like '%o';
+--------+
| Maker  |
+--------+
| Sanyo  |
| Sanyo  |
| Daewoo |
| Daewoo |
+--------+
4 rows in set (0.00 sec)
```

Question 17

Write the SQL statement to selects all the records with a Maker where the second character is "a" in the MICROWAVES table.

SQL statement screenshot:

```
mysql> select Maker from microwaves where Maker like '_a%';
+-----------+
| Maker     |
+-----------+
| Sanyo     |
| Sanyo     |
| Panasonic |
| Panasonic |
| Daewoo    |
| Daewoo    |
+-----------+
6 rows in set (0.00 sec)
```