

The screenshot shows a Notepad++ window with the following PHP code:

```
1 <?php
2
3
4 $conn = new mysqli('localhost', 'root', '');
5
6 if ($conn->connect_error)
7 {
8     die("Connection failed: " . $conn->connect_error);
9 }
10
11 $sql = "CREATE DATABASE StudentDetails";
12 if ($conn->query($sql) === FALSE)
13 {
14     echo "Error creating database: " . $conn->error;
15 }
16
17
18 $conn = new mysqli('localhost', 'root', '', 'StudentDetails');
19
20 if ($conn->connect_error) {
21     die("Connection failed: " . $conn->connect_error);
22 }
23
24
25 $sql = "CREATE TABLE MyStudents (
26 RollNo INT(10) PRIMARY KEY,
27 fullname VARCHAR(50) NOT NULL,
28 PhoneNo VARCHAR(30) NOT NULL,
29 Percentage VARCHAR(5)
30 )";
```

The code is used to create a MySQL database named 'StudentDetails' and a table named 'MyStudents' with columns: RollNo (INT(10) primary key), fullname (VARCHAR(50) not null), PhoneNo (VARCHAR(30) not null), and Percentage (VARCHAR(5)). Error handling is included for both the database creation and the table creation.

C) studentdetails.php

```
C:\xampp\htdocs\studentdetails.php - Notepad+
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
outfile_hemo_char_ml outfile_hemo_pari_char outfile_hemo_pari_char seq fas hemoglobin.fas nucleotide.fas nucleotide.fas.mdsx database.php dbms.php studentdetails.php
1 <!DOCTYPE html>
2 <html>
3 <head><title>Student Details Form</title>
4 <body>
5 <marquee>Please fill the students detail form</marquee>
6 </body>
7 <div style="background-image: url('C:\Users\Prasad\Downloads\pic.jpg');">
8 <style>
9 body
10 {
11     background-color: white;
12     color: black;
13     font-size: 16px;
14 }
15
16 .forms {
17     background-image: url("https://image.freepik.com/free-vector/abstract-pastel-watercolor-texture-background_10126-978.jpg");
18     background-size: cover;
19     background-repeat: no-repeat;
20     background-position:fixed
21     background-attachment: fixed;
22 }
23 </style>
24 </head>
25
26 <body>
27 <center>
28 <h1>Student Details</h1>
29 </center>
length : 2,670  lines : 84  Ln : 17  Col : 124  Sel : 0 | 0  Windows (CR LF)  UTF-8  INS
Type here to search 21:25 02-05-2021
```

```
C:\xampp\htdocs\studentdetails.php - Notepad+
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
outfile_hemo_char_ml outfile_hemo_pari_char outfile_hemo_pari_char seq fas hemoglobin.fas nucleotide.fas nucleotide.fas.mdsx database.php dbms.php studentdetails.php
28 <h1>Student Details</h1>
29 </center>
30
31 <div class="forms">
32 <form name="frmfd" method="post" action="database.php">
33 <center><br><b>
34 Student's Name: <input type="text" name="stuname" size=25><br><br>
35 Student's Roll No.: <input type="text" name="rollno" size=25>
36 <br>
37 <br>
38 Phone No: <input type="text" name="phno">
39 <br><br><br>
40 Student's Address: <textarea type="text" name="stuadd" rows=3>
41 </textarea><br><br>
42
43
44 Select your course:
45 <input type="radio" name="course" value="Mass Media">Mass Media
46 <input type="radio" name="course" value="Mass Communication">Mass Communication
47 <input type="radio" name="course" value="Literature">Literature
48 <input type="radio" name="course" value="Art & Science">Art & Science
49
50 <br><br><br><br>
51 Select your favourite subject:
52 <input type="checkbox" name="sub[]" value="English">English
53 <input type="checkbox" name="sub[]" value="Craft">Craft
54 <input type="checkbox" name="sub[]" value="Geography">Geography
55 <input type="checkbox" name="sub[]" value="History">History
56 <input type="checkbox" name="sub[]" value="Computer">Computer
</div>
length : 2,670  lines : 84  Ln : 17  Col : 124  Sel : 0 | 0  Windows (CR LF)  UTF-8  INS
Type here to search 21:25 02-05-2021
```

C:\xampp\htdocs\studentdetails.php - Notepad++

```
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
outfile_hemo_char_ml outfile_hemo_pan_char outfile_hemo_pari_char seq.fas hemoglobin.fas nucleotide.fas nucleotide.fas.mdsx database.php dbms.php studentdetails.php

56 <input type=checkbox name="sub[]" value="Computer">Computer
57 <input type=checkbox name="sub[]" value="GK">GK
58 <br><br><br>
59 Select an activity: <select multiple name="activ[]>
60 <option value="Select An option" selected>Select an option</option>
61 <option value="Dance Lessons">Dance Lessons</option>
62 <option value="Singing">Singing</option>
63 <option value="Yoga">Yoga</option>
64 <option value="Media workshop">Media workshop</option>
65 <option value="Cooking">Cooking</option>
66 <option value="Olympia">Olympia</option>
67 <option value="Basketball Competition">Basketball Competition</option>
68 </select>
69 <br><br><br><br>
70 Enter the Marks you Obtained:<br>
71 English : <input type=text name="s1"> <br>
72 Craft : <input type=text name="s2"> <br>
73 Geography : <input type=text name="s3"> <br>
74 History : <input type=text name="s4"> <br>
75 Computer : <input type=text name="s5"> <br>
76 GK : <input type=text name="s6"> <br>
77 <br><br>
78 <a href="database.php"><input type=submit name="submit" value="Submit"></a>
79 </form>
80 </b>
81 </div>
82 </body>
83 </html>
```

PHP Hypertext Preprocessor file length: 2,670 lines: 84 Ln: 17 Col: 124 Sel: 0 | 0 Windows (CR LF) UTF-8 21:25 02-05-2021 INS

**Output:**  
Unfilled students detail formed:

Please fill the students detail form

## Student Details

Student's Name:

Student's Roll No.:

Phone No:

Student's Address:

Select your course:  Mass Media  Mass Communication  Literature  Art & Science

Select your favourite subject:  English  Craft  Geography  History  Computer  GK

Select an activity: 
 Select an option  
 Dance Lessons  
 Singing  
 Yoga

Student's Address:

Select your course:  Mass Media  Mass Communication  Literature  Art & Science

Select your favourite subject:  English  Craft  Geography  History  Computer  GK

Select an activity: 
 Select an option  
 Dance Lessons  
 Singing  
 Yoga

Enter the Marks you Obtained:

English :	<input type="text"/>
Craft :	<input type="text"/>
Geography :	<input type="text"/>
History :	<input type="text"/>
Computer :	<input type="text"/>
GK :	<input type="text"/>

Filled students detail form:

Please fill the students detail form

## Student Details

Student's Name:

Student's Roll No.:

Phone No:

Student's Address:

Select your course:  Mass Media  Mass Communication  Literature  Art & Science

Select your favourite subject:  English  Craft  Geography  History  Computer  GK

Select an activity:

Student's Address:

Select your course:  Mass Media  Mass Communication  Literature  Art & Science

Select your favourite subject:  English  Craft  Geography  History  Computer  GK

Select an activity:

Enter the Marks you Obtained:

English :	89
Craft :	92
Geography :	80
History :	95
Computer :	87
GK :	85

Click on the submit button for the output shown:

Inbox (1) | WhatsApp | Me | Student | localhost | localhost | Google pastel | localhost | localhost | aesthetic | +

localhost/database.php

## Student Details

**Student's Name:** Gunjan Deshpande

**Student's Roll No.:** BID 19006

**Phone No.:** 7709788679

**Student's Address:** Gunjan Prasad Deshpande Flat No. 201, Plot No 87, Dharma Sadan, Sector 19, Kharghar 410210 , Panvel, Navi Mumbai

**Selected Course:** Mass Media

**Favourite Subjects:** Craft

Error: INSERT INTO MyStudents (RollNo, fullname, PhoneNo, Percentage) VALUES ('BID 19006','Gunjan Deshpande','7709788679','88')  
Table 'studentdetails.mystudents' doesn't exist

Inbox (1) | WhatsApp | Me | Student | localhost | localhost | Google pastel | localhost | localhost | aesthetic | +

localhost/database.php

21:28 02-05-2021

**Phone No.:** 7709788679

**Student's Address:** Gunjan Prasad Deshpande Flat No. 201, Plot No 87, Dharma Sadan, Sector 19, Kharghar 410210 , Panvel, Navi Mumbai

**Selected Course:** Mass Media

**Favourite Subjects:** Craft

**Activities:** Dance Lessons

**Percentage Obtained:** 88%

**You Passed in First Division.**

21:28 02-05-2021

Table:

```
MySQL 8.0 Command Line Client
+-----+
5 rows in set (0.00 sec)

mysql> select*from st_details;
+-----+
| Rollno | Name      | PhoneNo | Percentage |
+-----+
| 19006  | Riya      | 7654    | 80          |
| 190    | Raj       | 7652    | 77          |
| 1906   | Gunjan    | 7709    | 88          |
| 5678   | Mohan     | 7702    | 69          |
| 5008   | Sham      | 1202    | 62          |
| 5011   | Prachi    | 1222    | 80          |
| 5071   | Nrupesh   | 1234    | 72          |
| 2271   | Sai       | 1774    | 77          |
+-----+
8 rows in set (0.00 sec)

mysql> select*from st_details;
+-----+
| Rollno | Name      | PhoneNo | Percentage |
+-----+
| 19006  | Riya      | 7654    | 80          |
| 190    | Raj       | 7652    | 77          |
| 1906   | Gunjan    | 7709    | 88          |
| 5678   | Mohan     | 7702    | 69          |
| 5008   | Sham      | 1202    | 62          |
| 5011   | Prachi    | 1222    | 80          |
| 5071   | Nrupesh   | 1234    | 72          |
| 2271   | Sai       | 1774    | 77          |
| 3331   | John      | 1999    | 55          |
| 3322   | Om        | 1876    | 71          |
+-----+
10 rows in set (0.00 sec)

mysql> _
```

**Exercise 1:** To study DDL statements for creation of tables Create a database testDB and then create all your tables in this database.

1)Create a table having organism details as organism ID (primary key), genus name,

species name, length of the genome, and total chromosomes.

a) Insert 5 rows in the organism table and display the table.

## Commands:

```
MySQL 8.0 Command Line Client
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.21 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> create database TTestDBB;
Query OK, 1 row affected (0.03 sec)

mysql> use TTestDBB;
Database changed
mysql> CREATE TABLE thespeciesTable(ORGANISM_ID INT NOT NULL,GENUS VARCHAR (20) NOT NULL,SPECIES VARCHAR (20) NOT NULL,GENOME
EY (ORGANISM_ID));
Query OK, 0 rows affected (0.11 sec)

mysql> INSERT INTO speciestable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (1,'homo','sapiens',8,10);
ERROR 1146 (42S02): Table 'ttestdbb.speciestable' doesn't exist
mysql> INSERT INTO thespeciestable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (1,'homo','sapiens',8,10);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO thespeciestable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (2,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)
|   1 |      4 | homo | sapiens |     8 |        10 |

```

```
MySQL 8.0 Command Line Client
mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (1,'homo','sapiens',8,10);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (2,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (3,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (4,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (5,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

mysql> DESC thespeciesTable;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ORGANISM_ID | int    | NO   | PRI | NULL    |       |
| GENUS        | varchar(20) | NO  |     | NULL    |       |
| SPECIES      | varchar(20) | NO  |     | NULL    |       |
| GENOME       | int    | NO   |     | NULL    |       |
| CHROMOSOME   | int    | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.05 sec)

mysql> select * from thespeciesTable;
+-----+-----+-----+-----+
| 1   | 4   | homo | sapiens | 8   | 10  |
+-----+-----+-----+-----+
```

```

MySQL 8.0 Command Line Client

mysql> INSERT INTO thespeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (5,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

mysql> DESC thespeciesTable;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ORGANISM_ID | int | NO | PRI | NULL | 
| GENUS | varchar(20) | NO | | NULL | 
| SPECIES | varchar(20) | NO | | NULL | 
| GENOME | int | NO | | NULL | 
| CHROMOSOME | int | NO | | NULL | 
+-----+-----+-----+-----+-----+
5 rows in set (0.05 sec)

mysql> select * from thespeciesTable;
+-----+-----+-----+-----+-----+
| ORGANISM_ID | GENUS | SPECIES | GENOME | CHROMOSOME |
+-----+-----+-----+-----+-----+
| 1 | homo | sapiens | 8 | 10 |
| 2 | homo | sapiens | 8 | 10 |
| 3 | homo | sapiens | 8 | 10 |
| 4 | homo | sapiens | 8 | 10 |
| 5 | homo | sapiens | 8 | 10 |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql>

```

2)Create a table item master having columns item ID (primary key), item name, description, and price.

### Commands:

```

MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.21 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> USE trialDB;
Database changed
mysql> CREATE TABLE ItemTable(ITEMID INT NOT NULL,ITEMNAME VARCHAR (20) NOT NULL,DESCRIPTION VARCHAR (20) NOT NULL,PRICE INT NOT NULL,PRIMARY KEY (ITEMID));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO ItemTable VALUES (1,'paint','colour',20);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO ItemTable VALUES (2,'Lays','tasty',25);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ItemTable VALUES (3,'shampoo','properties',60);
Query OK, 1 row affected (0.01 sec)

mysql> DESC ItemTable;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ITEMID | int | NO | PRI | NULL | 
| ITEMNAME | varchar(20) | NO | | NULL | 
| DESCRIPTION | varchar(20) | NO | | NULL | 
| PRICE | int | NO | | NULL | 
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql> select * from ItemTable;
+-----+-----+-----+-----+
| ITEMID | ITEMNAME | DESCRIPTION | PRICE |
+-----+-----+-----+-----+

```

```

MySQL 8.0 Command Line Client
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE trialDB;
Database changed
mysql> CREATE TABLE ItemTable(ITEMID INT NOT NULL,ITEMNAME VARCHAR (20) NOT NULL,DESCRIPTION VARCHAR (20) NOT NULL,PRICE INT NOT NULL,PRIMARY KEY (ITEMID));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO ItemTable VALUES (1,'paint','colour',20);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO ItemTable VALUES (2,'Lays','tasty',25);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ItemTable VALUES (3,'shampoo','properties',60);
Query OK, 1 row affected (0.01 sec)

mysql> DESC ItemTable;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| ITEMID | int    | NO   | PRI   | NULL    |       |
| ITEMNAME | varchar(20) | NO   |        | NULL    |       |
| DESCRIPTION | varchar(20) | NO   |        | NULL    |       |
| PRICE | int    | NO   |        | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql> select * from ItemTable;
+-----+-----+-----+-----+
| ITEMID | ITEMNAME | DESCRIPTION | PRICE |
+-----+-----+-----+-----+
| 1 | paint    | colour     | 20   |
| 2 | Lays     | tasty      | 25   |
| 3 | shampoo   | properties | 60   |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>

```

3) Create a table order master having columns, order ID, order in agency, item ID (foreign key), item name, date of ordering, and expected date of dispatch.

a. Insert 5 rows.

### Commands:

```

MySQL 8.0 Command Line Client
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create table OrderMaster( orderID int(50), ordering_agency varchar(50), itemID int(50), item_name varchar(50), date_of_order date, date_of_dispatch date, primary key(orderID) );
Query OK, 0 rows affected, 2 warnings (0.06 sec)

mysql> insert into OrderMaster values(2, 'Cipla', 4, 'Paracetamol', '2001-11-24', '2001-12-12');
Query OK, 1 row affected (0.02 sec)

mysql> insert into OrderMaster values(3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12');
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 '3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12'' at line 1
mysql> insert into OrderMaster values(4, 'Cipla', 2, 'Allegra', '2001-11-24', '2001-12-12');
Query OK, 1 row affected (0.01 sec)

mysql> insert into OrderMaster values(3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12');
Query OK, 1 row affected (0.01 sec)

mysql> insert into OrderMaster values(5, 'CALADRYL', 8, 'AZEE', '2002-12-13', '2002-11-11');
ERROR 1292 (22007): Incorrect date value: '2002-11-11' for column 'date_of_dispatch' at row 1
mysql> insert into OrderMaster values(5, 'CALADRYL', 8, 'AZEE', '2010-8-8', '2020-1-1');
Query OK, 1 row affected (0.01 sec)

mysql> Desc OrderMaster;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| orderID | int    | NO   | PRI   | NULL    |       |
| ordering_agency | varchar(50) | YES  |        | NULL    |       |
| itemID | int    | YES  |        | NULL    |       |
| item_name | varchar(50) | YES  |        | NULL    |       |
| date_of_order | date   | YES  |        | NULL    |       |
| date_of_dispatch | date  | YES  |        | NULL    |       |
+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> select*from OrderMaster;
+-----+-----+-----+-----+-----+-----+
| orderID | ordering_agency | itemID | item_name | date_of_order | date_of_dispatch |
+-----+-----+-----+-----+-----+-----+
| 2 | Cipla           | 4 | Paracetamol | 2001-11-24 | 2001-12-12 |
| 3 | Cipla           | 2 | Crocin      | 2001-11-24 | 2001-12-12 |
+-----+-----+-----+-----+-----+-----+

```

```

MySQL 8.0 Command Line Client

mysql> insert into OrderMaster values(3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12');
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 '3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12'' at line 1
mysql> insert into OrderMaster values(4, 'Cipla', 2, 'Allegra', '2001-11-24', '2001-12-12');
Query OK, 1 row affected (0.01 sec)

mysql> insert into OrderMaster values(3, 'Cipla', 2, 'Crocin', '2001-11-24', '2001-12-12');
Query OK, 1 row affected (0.01 sec)

mysql> insert into OrderMaster values(5, 'CALADRYL', 8, 'AZEE', '2002-12-13', '2002-11-11');
ERROR 1292 (22007): Incorrect date value: '2002-11-11' for column 'date_of_dispatch' at row 1
mysql> insert into OrderMaster values(5, 'CALADRYL', 8, 'AZEE', '2010-8-8', '2020-1-1');
Query OK, 1 row affected (0.01 sec)

mysql> Desc OrderMaster;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| orderID | int | NO | PRI | NULL |
| ordering_agency | varchar(50) | YES | NULL |
| itemID | int | YES | NULL |
| item_name | varchar(50) | YES | NULL |
| date_of_order | date | YES | NULL |
| date_of_dispatch | date | YES | NULL |
+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> select*from OrderMaster;
+-----+-----+-----+-----+-----+
| orderID | ordering_agency | itemID | item_name | date_of_order | date_of_dispatch |
+-----+-----+-----+-----+-----+
| 2 | Cipla | 4 | Paracetemol | 2001-11-24 | 2001-12-12 |
| 3 | Cipla | 2 | Crocin | 2001-11-24 | 2001-12-12 |
| 4 | Cipla | 2 | Allegra | 2001-11-24 | 2001-12-12 |
| 5 | CALADRYL | 8 | AZEE | 2010-08-08 | 2020-01-01 |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>

```

4) Create an employee table EMP (oracle sql) which has fields EMP number, E name, job, MGR, hire date, salary(monthly), commission, department number.The data in the EMP table contains the following 14 rows.

### Commands:

```

MySQL 8.0 Command Line Client

mysql> create table dept(Deptno int(2), Dname varchar(15), Loc varchar(15), constraint pk_dept primary key (deptno) );
Query OK, 0 rows affected, 1 warning (0.08 sec)

mysql> create table emp(Empno int(5), Ename varchar(50), Job varchar(10), Mgr int(5), hiredate date, Sal decimal(10,2), comm decimal(10,2), Deptno int(2),
constraint pk_emp primary key (empno), constraint fk_deptno foreign key (deptno) references dept (deptno) );
Query OK, 0 rows affected, 3 warnings (0.08 sec)

mysql> insert into DEPT (DEPTNO, DNAME, LOC)values(10, 'ACCOUNTING', 'NEW YORK');
Query OK, 1 row affected (0.01 sec)

mysql> insert into dept values(20, 'RESEARCH', 'DALLAS');
Query OK, 1 row affected (0.01 sec)

mysql> insert into dept values(30, 'SALES', 'CHICAGO');
Query OK, 1 row affected (0.01 sec)

mysql> insert into dept values(40, 'OPERATIONS', 'BOSTON');
Query OK, 1 row affected (0.01 sec)

mysql> inserting values in EMP insert into emp values( 7839, 'KING', 'PRESIDENT', null, str_to_date('17,11,1981','%d,%m,%Y'), 5000, null, 10 );
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 'inserting values
in EMP insert into emp values( 7839, 'KING', 'PRESIDENT', null' at line 1
mysql> insert into emp values( 7839, 'KING', 'PRESIDENT', null, str_to_date('17,11,1981','%d,%m,%Y'), 5000, null, 10 );
Query OK, 1 row affected (0.02 sec)

mysql> insert into emp values( 7698, 'BLAKE', 'MANAGER', 7839, str_to_date('1,5,1981','%d,%m,%Y'), 2850, null, 30 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7782, 'CLARK', 'MANAGER', 7839, str_to_date('9,6,1981','%d,%m,%Y'), 2450, null, 10 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7566, 'JONES', 'MANAGER', 7839, str_to_date('2,4,1981','%d,%m,%Y'), 2975, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7788, 'SCOTT', 'ANALYST', 7566, str_to_date('13,7,87','%d,%m,%Y'), 3000, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7902, 'FORD', 'ANALYST', 7566, str_to_date('3,12,1981','%d,%m,%Y'), 3000, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7369, 'SMITH', 'CLERK', 7902, str_to_date('17,12,1980','%d,%m,%Y'), 800, null, 20 );

```

```
MySQL 8.0 Command Line Client
mysql> insert into emp values( 7566, 'JONES', 'MANAGER', 7839, str_to_date('2,4,1981','%d,%m,%Y'), 2975, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7788, 'SCOTT', 'ANALYST', 7566, str_to_date('13,7,87','%d,%m,%Y'), 3000, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7902, 'FORD', 'ANALYST', 7566, str_to_date('3,12,1981','%d,%m,%Y'), 3000, null, 20 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7369, 'SMITH', 'CLERK', 7902, str_to_date('17,12,1980','%d,%m,%Y'), 800, null, 20 );
Query OK, 1 row affected (0.00 sec)

mysql> insert into emp values( 7499, 'ALLEN', 'SALESMAN', 7698, str_to_date('20,2,1981','%d,%m,%Y'), 1600, 300, 30 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7521, 'WARD', 'SALESMAN', 7698, str_to_date('22,2,1981','%d,%m,%Y'), 1250, 500, 30 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7654, 'MARTIN', 'SALESMAN', 7698, str_to_date('28,9,1981','%d,%m,%Y'), 1250, 1400, 30 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7844, 'TURNER', 'SALESMAN', 7698, str_to_date('8,9,1981','%d,%m,%Y'), 1500, 0, 30 );
Query OK, 1 row affected (0.01 sec)

mysql> insert into emp values( 7876, 'ADAMS', 'CLERK', 7788, str_to_date('23,5,87','%d,%m,%Y'), 1100, null, 20 );
Query OK, 1 row affected (0.00 sec)

mysql> insert into emp values( 7900, 'JAMES', 'CLERK', 7698, str_to_date('3,12,1981','%d,%m,%Y'), 950, null, 30 );
Query OK, 1 row affected (0.00 sec)

mysql> insert into emp values( 7934, 'MILLER', 'CLERK', 7782, str_to_date('23,1,1982','%d,%m,%Y'), 1300, null, 10 );
Query OK, 1 row affected (0.01 sec)

mysql> select*from emp;
+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | Sal    | comm   | Deptno |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 7902  | 1980-12-17 | 800.00 | NULL   | 20    |
| 7499 | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00 | 30    |
| 7521 | WARD  | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00 | 30    |
| 7566 | JONES | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL   | 20    |
+-----+-----+-----+-----+-----+-----+-----+
```

**Exercise 2:** To study select query statements

1)Query to display EMP table

Command:

```
MySQL 8.0 Command Line Client

mysql> insert into emp values( 7900, 'JAMES', 'CLERK', 7698, str_to_date('3,12,1981','%d,%m,%Y'), 950, null, 30
Query OK, 1 row affected (0.00 sec)

mysql> insert into emp values( 7934, 'MILLER', 'CLERK', 7782, str_to_date('23,1,1982','%d,%m,%Y'), 1300, null, 10
Query OK, 1 row affected (0.01 sec)

mysql> select*from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | Sal   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH | CLERK | 7902  | 1980-12-17 | 800.00 | NULL  | 20   |
| 7499  | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00 | 30   |
| 7521  | WARD  | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00 | 30   |
| 7566  | JONES  | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL  | 20   |
| 7654  | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1250.00 | 1400.00 | 30   |
| 7698  | BLAKE  | MANAGER | 7839  | 1981-05-01 | 2850.00 | NULL  | 30   |
| 7782  | CLARK  | MANAGER | 7839  | 1981-06-09 | 2450.00 | NULL  | 10   |
| 7788  | SCOTT  | ANALYST | 7566  | 1987-07-13 | 3000.00 | NULL  | 20   |
| 7839  | KING    | PRESIDENT | NULL  | 1981-11-17 | 5000.00 | NULL  | 10   |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00  | 30   |
| 7876  | ADAMS  | CLERK   | 7788  | 1987-05-23 | 1100.00 | NULL  | 20   |
| 7900  | JAMES   | CLERK   | 7698  | 1981-12-03 | 950.00  | NULL  | 30   |
| 7902  | FORD    | ANALYST | 7566  | 1981-12-03 | 3000.00 | NULL  | 20   |
| 7934  | MILLER | CLERK   | 7782  | 1982-01-23 | 1300.00 | NULL  | 10   |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)
```

2)Query to display DEPT table

Command:

```
mysql> select*from DEPT;
+-----+-----+-----+
| Deptno | Dname      | loc        |
+-----+-----+-----+
| 10    | ACCOUNTING | NEW YORK  |
| 20    | RESEARCH   | DALLAS    |
| 30    | SALES      | CHICAGO   |
| 40    | OPERATIONS | BOSTON    |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

3)Query to display DEPT number and location from DEPT table

Command:

```
MySQL 8.0 Command Line Client
mysql> USE trialDB;
Database changed
mysql> SELECT DEPTNO, LOC FROM DEPT;
+-----+-----+
| DEPTNO | LOC   |
+-----+-----+
|      10 | NEW YORK
|      20 | DALLAS
|      30 | CHICAGO
|      40 | BOSTON
+-----+-----+
4 rows in set (0.01 sec)

mysql>
```

4) Query to display employee name, job, salary from EMP table.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT Ename, Job, Sal FROM emp;
+-----+-----+-----+
| Ename | Job    | Sal   |
+-----+-----+-----+
| SMITH | CLERK | 800.00
| ALLEN | SALESMAN | 1600.00
| WARD | SALESMAN | 1250.00
| JONES | MANAGER | 2975.00
| MARTIN | SALESMAN | 1250.00
| BLAKE | MANAGER | 2850.00
| CLARK | MANAGER | 2450.00
| SCOTT | ANALYST | 3000.00
| KING | PRESIDENT | 5000.00
| TURNER | SALESMAN | 1500.00
| ADAMS | CLERK | 1100.00
| JAMES | CLERK | 950.00
| FORD | ANALYST | 3000.00
| MILLER | CLERK | 1300.00
+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>
```

5) Query to raise salary of all employees with 300 in EMP table and display name and salary as newsal from EMP table

Command:

```

MySQL 8.0 Command Line Client

mysql> SELECT ENAME, SAL, (SAL + 300) as "NEWSAL" from EMP;
+-----+-----+-----+
| ENAME | SAL   | NEWSAL |
+-----+-----+-----+
| SMITH | 800.00 | 1100.00 |
| ALLEN | 1600.00 | 1900.00 |
| WARD  | 1250.00 | 1550.00 |
| JONES  | 2975.00 | 3275.00 |
| MARTIN | 1250.00 | 1550.00 |
| BLAKE  | 2850.00 | 3150.00 |
| CLARK  | 2450.00 | 2750.00 |
| SCOTT  | 3000.00 | 3300.00 |
| KING   | 5000.00 | 5300.00 |
| TURNER | 1500.00 | 1800.00 |
| ADAMS  | 1100.00 | 1400.00 |
| JAMES  | 950.00  | 1250.00 |
| FORD   | 3000.00 | 3300.00 |
| MILLER | 1300.00 | 1600.00 |
+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>

```

6) Query to double up the salary of employee in the EMP table and display Emp name, prior salary and new salary.

Command:

```

MySQL 8.0 Command Line Client

mysql> SELECT Ename , job, (sal*2) AS NEWSAL from EMP;
+-----+-----+-----+
| Ename | job   | NEWSAL |
+-----+-----+-----+
| SMITH | CLERK | 1600.00 |
| ALLEN | SALESMAN | 3200.00 |
| WARD  | SALESMAN | 2500.00 |
| JONES  | MANAGER | 5950.00 |
| MARTIN | SALESMAN | 2500.00 |
| BLAKE  | MANAGER | 5700.00 |
| CLARK  | MANAGER | 4900.00 |
| SCOTT  | ANALYST | 6000.00 |
| KING   | PRESIDENT | 10000.00 |
| TURNER | SALESMAN | 3000.00 |
| ADAMS  | CLERK | 2200.00 |
| JAMES  | CLERK | 1900.00 |
| FORD   | ANALYST | 6000.00 |
| MILLER | CLERK | 2600.00 |
+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>

```

7) Query to calculate annual salary of all employees, display employee name, basic salary and annual salary

Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT Ename , sal , (sal*12) AS ANSAL from EMP;
+-----+-----+-----+
| Ename | sal  | ANSAL |
+-----+-----+-----+
| SMITH | 800.00 | 9600.00 |
| ALLEN | 1600.00 | 19200.00 |
| WARD  | 1250.00 | 15000.00 |
| JONES  | 2975.00 | 35700.00 |
| MARTIN | 1250.00 | 15000.00 |
| BLAKE  | 2850.00 | 34200.00 |
| CLARK  | 2450.00 | 29400.00 |
| SCOTT  | 3000.00 | 36000.00 |
| KING   | 5000.00 | 60000.00 |
| TURNER | 1500.00 | 18000.00 |
| ADAMS  | 1100.00 | 13200.00 |
| JAMES  | 950.00  | 11400.00 |
| FORD   | 3000.00 | 36000.00 |
| MILLER | 1300.00 | 15600.00 |
+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

8) Query to increase salary of employee by 200 and calculate annual salary, display emp name prior salary, and new salary.

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME, SAL, (12*SAL) AS PRESAL , (12*(200+SAL)) AS POSTSAL from EMP;
+-----+-----+-----+-----+
| ENAME | SAL  | PRESAL | POSTSAL |
+-----+-----+-----+-----+
| SMITH | 800.00 | 9600.00 | 12000.00 |
| ALLEN | 1600.00 | 19200.00 | 21600.00 |
| WARD  | 1250.00 | 15000.00 | 17400.00 |
| JONES  | 2975.00 | 35700.00 | 38100.00 |
| MARTIN | 1250.00 | 15000.00 | 17400.00 |
| BLAKE  | 2850.00 | 34200.00 | 36600.00 |
| CLARK  | 2450.00 | 29400.00 | 31800.00 |
| SCOTT  | 3000.00 | 36000.00 | 38400.00 |
| KING   | 5000.00 | 60000.00 | 62400.00 |
| TURNER | 1500.00 | 18000.00 | 20400.00 |
| ADAMS  | 1100.00 | 13200.00 | 15600.00 |
| JAMES  | 950.00  | 11400.00 | 13800.00 |
| FORD   | 3000.00 | 36000.00 | 38400.00 |
| MILLER | 1300.00 | 15600.00 | 18000.00 |
+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

9) Query to calculate annual bonus from EMP table where bonus is 50% of monthly salary, display emp name, job, prior salary and annual salary with bonus.

Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME, JOB, SAL, (SAL + (0.5*SAL)) AS ANSALBONUS , (12*(SAL + (0.5*SAL))) AS POSTSALBONUS from EMP;
+-----+-----+-----+-----+-----+
| ENAME | JOB   | SAL   | ANSALBONUS | POSTSALBONUS |
+-----+-----+-----+-----+-----+
| SMITH | CLERK | 800.00 | 1200.000 | 14400.000 |
| ALLEN | SALESMAN | 1600.00 | 2400.000 | 28800.000 |
| WARD | SALESMAN | 1250.00 | 1875.000 | 22500.000 |
| JONES | MANAGER | 2975.00 | 4462.500 | 53550.000 |
| MARTIN | SALESMAN | 1250.00 | 1875.000 | 22500.000 |
| BLAKE | MANAGER | 2850.00 | 4275.000 | 51300.000 |
| CLARK | MANAGER | 2450.00 | 3675.000 | 44100.000 |
| SCOTT | ANALYST | 3000.00 | 4500.000 | 54000.000 |
| KING | PRESIDENT | 5000.00 | 7500.000 | 90000.000 |
| TURNER | SALESMAN | 1500.00 | 2250.000 | 27000.000 |
| ADAMS | CLERK | 1100.00 | 1650.000 | 19800.000 |
| JAMES | CLERK | 950.00 | 1425.000 | 17100.000 |
| FORD | ANALYST | 3000.00 | 4500.000 | 54000.000 |
| MILLER | CLERK | 1300.00 | 1950.000 | 23400.000 |
+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

10) Query to calculate monthly bonus from EMP table where bonus ids 50% of monthly salary, display emp name, monthly salary, and monthly salary with bonus.

Command:

```
MySQL 8.0 Command Line Client

mysql> select ename , sal, sal+ (sal*0.5) from emp;
+-----+-----+-----+
| ename | sal   | sal+ (sal*0.5) |
+-----+-----+-----+
| SMITH | 800.00 | 1200.000 |
| ALLEN | 1600.00 | 2400.000 |
| WARD | 1250.00 | 1875.000 |
| JONES | 2975.00 | 4462.500 |
| MARTIN | 1250.00 | 1875.000 |
| BLAKE | 2850.00 | 4275.000 |
| CLARK | 2450.00 | 3675.000 |
| SCOTT | 3000.00 | 4500.000 |
| KING | 5000.00 | 7500.000 |
| TURNER | 1500.00 | 2250.000 |
| ADAMS | 1100.00 | 1650.000 |
| JAMES | 950.00 | 1425.000 |
| FORD | 3000.00 | 4500.000 |
| MILLER | 1300.00 | 1950.000 |
+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

11) Query to calculate annual salary of employees in emp table with commission of all employees. Demonstrate the use of column alias.

Command:

```
MySQL 8.0 Command Line Client
mysql> Select ename, (sal*12) as "Annualsalary" from EMP;
+-----+-----+
| ename | Annualsalary |
+-----+-----+
| SMITH |      9600.00 |
| ALLEN |     19200.00 |
| WARD  |     15000.00 |
| JONES |     35700.00 |
| MARTIN |    15000.00 |
| BLAKE |    34200.00 |
| CLARK |    29400.00 |
| SCOTT |    36000.00 |
| KING  |    60000.00 |
| TURNER |   18000.00 |
| ADAMS |   13200.00 |
| JAMES |   11400.00 |
| FORD  |   36000.00 |
| MILLER |  15600.00 |
+-----+
14 rows in set (0.00 sec)

mysql>
```

12) Query to display emp name, job of employees whose department no. is 30 (from Emp).  
Command:

```
MySQL 8.0 Command Line Client
mysql> Select ename, job from EMP where DEPTNO='30';
+-----+-----+
| ename | job      |
+-----+-----+
| ALLEN | SALESMAN |
| WARD  | SALESMAN |
| MARTIN | SALESMAN |
| BLAKE | MANAGER  |
| TURNER | SALESMAN |
| JAMES | CLERK    |
+-----+
6 rows in set (0.00 sec)

mysql>
```

13) Query to display emp name and salary of those employees whose salary is more than 3000  
Command:

```
MySQL 8.0 Command Line Client

mysql> select ename, sal from emp where sal>3000;
+-----+-----+
| ename | sal   |
+-----+-----+
| KING  | 5000.00 |
+-----+-----+
1 row in set (0.00 sec)

mysql> -
```

14) Query to display emp name and salary of those whose salary is  $\leq 1000$   
Command:

```
MySQL 8.0 Command Line Client

mysql> select ename, sal from emp where sal<1000;
+-----+-----+
| ename | sal   |
+-----+-----+
| SMITH | 800.00 |
| JAMES | 950.00 |
+-----+-----+
2 rows in set (0.00 sec)

mysql> -
```

15) Query to display emp name and salary of those whose salary is between 1500 and 5000  
Command:

```
MySQL 8.0 Command Line Client

mysql> select ename, sal from emp where sal between 1500 and 5000;
+-----+-----+
| ename | sal  |
+-----+-----+
| ALLEN | 1600.00 |
| JONES  | 2975.00 |
| BLAKE  | 2850.00 |
| CLARK  | 2450.00 |
| SCOTT  | 3000.00 |
| KING   | 5000.00 |
| TURNER | 1500.00 |
| FORD   | 3000.00 |
+-----+
8 rows in set (0.01 sec)

mysql>
```

16) Query to display name and salary of employee whose salary is 3000,5000 or 1600.  
Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME, SAL FROM EMP where SAL=3000 OR SAL=5000 OR SAL=1600;
+-----+-----+
| ENAME | SAL  |
+-----+-----+
| ALLEN | 1600.00 |
| SCOTT  | 3000.00 |
| KING   | 5000.00 |
| FORD   | 3000.00 |
+-----+
4 rows in set (0.00 sec)

mysql>
```

17) Query to display emp name, job, hire date, of those employees whose hire date is 2nd April '81, 9th june 83 and 3 December, '81.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME ,JOB, HIREDATE FROM EMP where HIREDATE='1981-04-02' OR HIREDATE='1981-06-09' OR HIREDATE='1981-12-03';
+-----+-----+-----+
| ENAME | JOB    | HIREDATE   |
+-----+-----+-----+
| JONES | MANAGER | 1981-04-02 |
| CLARK | MANAGER | 1981-06-09 |
| JAMES | CLERK   | 1981-12-03 |
| FORD  | ANALYST | 1981-12-03 |
+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>
```

#### 18) Query to display name of emp whose name starts with letter M

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME FROM EMP where ENAME LIKE 'M%';
+-----+
| ENAME  |
+-----+
| MARTIN |
| MILLER |
+-----+
2 rows in set (0.01 sec)

mysql>
```

#### 19)Display name of employees whose name contains 'IP Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME FROM EMP where ENAME LIKE 'I%' AND ENAME LIKE 'P%';
Empty set (0.00 sec)
mysql>
```

20) Query to display name of employees whose 3rd letter is r.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME FROM EMP where ENAME LIKE '__R%';
+-----+
| ENAME |
+-----+
| WARD |
| MARTIN |
| TURNER |
| FORD |
+-----+
4 rows in set (0.00 sec)

mysql>
```

21) Query to display name, salary and department number of those employees whose salary is >2000 and department no. is 10.

Command: