

Question 1

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.40 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 database workers
-> create database workers;
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 'd
atabase workers' at line 1
mysql> create database workers;
Query OK, 1 row affected (0.05 sec)

mysql> use workers;
Database changed
mysql> create table workers(sln INT(10) , Name Varchar(15) , Designation Varchar(15), Branch varchar(25));
ERROR:
Unknown command '\n'.
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 '\
no INT(10) , Name Varchar(15) , Designation Varchar(15), Branch varchar(25))' at line 1
mysql> create table workers(sln INT(10) , Name Varchar(15) , Designation Varchar(15), Branch varchar(25));
Query OK, 0 rows affected, 1 warning (0.03 sec)

mysql> desc workers;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| slno  | int  | YES  |     | NULL    |       |
| Name  | varchar(15) | YES  |     | NULL    |       |
| Designation | varchar(15) | YES  |     | NULL    |       |
| Branch | varchar(25) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.04 sec)

mysql> alter table workers add column salary int(10);
Query OK, 0 rows affected, 1 warning (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 1

mysql> desc workers;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| slno  | int  | YES  |     | NULL    |       |
| Name  | varchar(15) | YES  |     | NULL    |       |
| Designation | varchar(15) | YES  |     | NULL    |       |
| Branch | varchar(25) | YES  |     | NULL    |       |
| salary | int  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> insert into workers (sln, name, designation, branch) values(1, 'martin','manager','chennai'),(2,'sopna','supervisor','madurai'), (3,'hunter','assit
nt','trichy');
Query OK, 3 rows affected (0.04 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> desc workers;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| slno  | int  | YES  |     | NULL    |       |
| Name  | varchar(15) | YES  |     | NULL    |       |
| Designation | varchar(15) | YES  |     | NULL    |       |
| Branch | varchar(25) | YES  |     | NULL    |       |
| salary | int  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> select * from workers;
+-----+-----+-----+-----+-----+
| slno | Name   | Designation | Branch | salary |
+-----+-----+-----+-----+-----+
| 1    | martin | manager     | chennai | NULL   |
| 2    | sopna  | supervisor  | madurai | NULL   |
| 3    | hunter | assitant    | trichy  | NULL   |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> update workers set salary = 1000 where slno=1;
Query OK, 1 row affected (0.04 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from workers;
+-----+-----+-----+-----+-----+
| slno | Name   | Designation | Branch | salary |
+-----+-----+-----+-----+-----+
| 1    | martin | manager     | chennai | 1000   |
| 2    | sopna  | supervisor  | madurai | NULL   |
| 3    | hunter | assitant    | trichy  | NULL   |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> update workers set salary = 10000 where slno=2;
Query OK, 1 row affected (0.04 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> update workers set salary = 10000 where slno=3;
Query OK, 1 row affected (0.04 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from workers;
+-----+-----+-----+-----+-----+
| slno | Name   | Designation | Branch | salary |
+-----+-----+-----+-----+-----+
| 1    | martin | manager     | chennai | 1000   |
| 2    | sopna  | supervisor  | madurai | 10000  |
| 3    | hunter | assitant    | trichy  | 10000  |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> alter table workers change column name Fullname varchar(15);
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from workers;
+-----+-----+-----+-----+-----+
| slno | Fullname | Designation | Branch | salary |
+-----+-----+-----+-----+-----+
| 1 | martin | manager | chennai | 1000 |
| 2 | sopna | supervisor | madurai | 10000 |
| 3 | hunter | assitant | trichy | 10000 |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> drop table workers;
Query OK, 0 rows affected (0.06 sec)
```

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

```
mysql> delete from workers where slno=2;
Query OK, 1 row affected (0.04 sec)
```

```
mysql> select * from workers;
+-----+-----+-----+-----+-----+
| slno | Fullname | Designation | Branch | salary |
+-----+-----+-----+-----+-----+
| 1 | martin | manager | chennai | 1000 |
| 3 | hunter | assitant | trichy | 10000 |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

Question 2 :

```
mysql> insert into banks(sno, customer, account, balance, branch) values(1,'Ramesh',12378,100000,'Adyar'),(2,'Samran',12367,152500,'MyLapore'),(3,'H
ari',12345,250000,'Anna Salai');
Query OK, 3 rows affected (0.02 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> select * from banks;
+-----+-----+-----+-----+-----+
| sno | customer | account | balance | branch |
+-----+-----+-----+-----+-----+
| 1 | Ramesh | 12378 | 100000 | Adyar |
| 2 | Samran | 12367 | 152500 | MyLapore |
| 3 | Hari | 12345 | 250000 | Anna Salai |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from banks where customer='Ramesh';
+-----+-----+-----+-----+-----+
| sno | customer | account | balance | branch |
+-----+-----+-----+-----+-----+
| 1 | Ramesh | 12378 | 100000 | Adyar |
+-----+-----+-----+-----+-----+
1 row in set (0.02 sec)
```

```
mysql> select * from banks where balance>150000;
+-----+-----+-----+-----+-----+
| sno | customer | account | balance | branch |
+-----+-----+-----+-----+-----+
| 2 | Samran | 12367 | 152500 | MyLapore |
| 3 | Hari | 12345 | 250000 | Anna Salai |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)
```

```
mysql> select * from banks where balance between 100000 and 200000;
+-----+-----+-----+-----+-----+
| sno | customer | account | balance | branch |
+-----+-----+-----+-----+-----+
| 1 | Ramesh | 12378 | 100000 | Adyar |
| 2 | Samran | 12367 | 152500 | Mylapore |
+-----+-----+-----+-----+-----+
2 rows in set (0.02 sec)
```

```
mysql> update banks set customer='Pon' where sno=2;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1 Changed: 0 Warnings: 0
```

```
mysql> select max(balance) as maxbalance from banks;
+-----+
| maxbalance |
+-----+
| 250000 |
+-----+
1 row in set (0.00 sec)
```

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

mysql> use bank;
Database changed
mysql> create table banks(sno int(10), customer varchar(20), account int(20), balance int(20), branch varchar(25));
Query OK, 0 rows affected, 3 warnings (0.07 sec)
```

Question 3 :

```
mysql> insert into trainer(sno, name, designation, branch) values (1,'ramesh','manager','Hyderabad'),(2,'suman','advisor','mumbai'),(3,'sekhar','asst manager','trichy');
Query OK, 3 rows affected (0.04 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> select * from trainer;
+-----+-----+-----+-----+
| sno | name | designation | branch |
+-----+-----+-----+-----+
| 1 | ramesh | manager | Hyderabad |
| 2 | suman | advisor | mumbai |
| 3 | sekhar | asst manager | trichy |
+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

```
mysql> alter table trainer add column salary decimal(10,2);
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> desc trainer;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| sno | int | YES | | NULL | |
| name | varchar(20) | YES | | NULL | |
| designation | varchar(25) | YES | | NULL | |
| branch | varchar(25) | YES | | NULL | |
| salary | decimal(10,2) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.06 sec)
```

```
mysql> delete from trainer where sno=2;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from trainer;
```

sno	name	designation	branch	salary
1	ramesh	manager	Hyderabad	NULL
3	sekhar	asst manager	trichy	NULL

2 rows in set (0.00 sec)

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

```
mysql> desc trainer;
ERROR 1146 (42S02): Table 'trainer.trainer' doesn't exist
mysql> |
```

```
mysql> create database trainer;
Query OK, 1 row affected (0.09 sec)
```

```
mysql> use trainer;
Database changed
```

```
mysql> create table trainer(sno int(10), name varchar(20), designation varchar(25), branch varchar(25));
Query OK, 0 rows affected, 1 warning (0.12 sec)
```

Question 4 :

```
mysql> create database empl;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> use empl;
Database changed
```

```
mysql> CREATE TABLE Emp (
  -> EmpNo INT PRIMARY KEY,
  -> EmpName VARCHAR(50),
  -> Job VARCHAR(50),
  -> Dept VARCHAR(50), -- Assuming department is needed for part (b)
  -> Basic DECIMAL(10, 2),
  -> DA DECIMAL(10, 2),
  -> HRA DECIMAL(10, 2),
  -> PF DECIMAL(10, 2),
  -> GrossPay DECIMAL(10, 2),
  -> NetPay DECIMAL(10, 2)
  -> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> INSERT INTO Emp (EmpNo, EmpName, Job, Dept, Basic, DA, HRA, PF, GrossPay, NetPay)
```

```
  -> VALUES
  -> (1, 'Alice', 'Manager', 'HR', 20000, 0.3 * 20000, 0.4 * 20000, 0.12 * 20000,
  -> 20000 + 0.3 * 20000 + 0.4 * 20000,
  -> 20000 + 0.3 * 20000 + 0.4 * 20000 - 0.12 * 20000),
  -> (2, 'Bob', 'Analyst', 'Finance', 18000, 0.3 * 18000, 0.4 * 18000, 0.12 * 18000,
  -> 18000 + 0.3 * 18000 + 0.4 * 18000,
  -> 18000 + 0.3 * 18000 + 0.4 * 18000 - 0.12 * 18000),
  -> (3, 'Charlie', 'Clerk', 'Admin', 12000, 0.3 * 12000, 0.4 * 12000, 0.12 * 12000,
  -> 12000 + 0.3 * 12000 + 0.4 * 12000,
  -> 12000 + 0.3 * 12000 + 0.4 * 12000 - 0.12 * 12000),
  -> (4, 'Diana', 'Supervisor', 'HR', 15000, 0.3 * 15000, 0.4 * 15000, 0.12 * 15000,
  -> 15000 + 0.3 * 15000 + 0.4 * 15000,
  -> 15000 + 0.3 * 15000 + 0.4 * 15000 - 0.12 * 15000),
  -> (5, 'Eve', 'Assistant', 'Finance', 9500, 0.3 * 9500, 0.4 * 9500, 0.12 * 9500,
  -> 9500 + 0.3 * 9500 + 0.4 * 9500,
  -> 9500 + 0.3 * 9500 + 0.4 * 9500 - 0.12 * 9500);
Query OK, 5 rows affected (0.05 sec)
```

```
Records: 5 Duplicates: 0 Warnings: 0
```

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

EmpNo	EmpName	Job	Dept	Basic	DA	HRA	PF	GrossPay	NetPay
1	Alice	Manager	HR	20000.00	6000.00	8000.00	2400.00	34000.00	31600.00
2	Bob	Analyst	Finance	18000.00	5400.00	7200.00	2160.00	30600.00	28440.00
3	Charlie	Clerk	Admin	12000.00	3600.00	4800.00	1440.00	20400.00	18960.00
4	Diana	Supervisor	HR	15000.00	4500.00	6000.00	1800.00	25500.00	23700.00
5	Eve	Assistant	Finance	9500.00	2850.00	3800.00	1140.00	16150.00	15010.00

5 rows in set (0.04 sec)

```
mysql> SELECT Dept, EmpName, Basic
-> FROM Emp
-> WHERE Basic IN (
->   SELECT MIN(Basic)
->   FROM Emp
->   GROUP BY Dept
-> );
```

Dept	EmpName	Basic
Admin	Charlie	12000.00
HR	Diana	15000.00
Finance	Eve	9500.00

3 rows in set (0.01 sec)

```
mysql> UPDATE Emp
-> SET NetPay = NetPay + 1200
-> WHERE NetPay < 10000;
Query OK, 0 rows affected (0.04 sec)
Rows matched: 0 Changed: 0 Warnings: 0
```

```
mysql> select * from emp;
```

EmpNo	EmpName	Job	Dept	Basic	DA	HRA	PF	GrossPay	NetPay
1	Alice	Manager	HR	20000.00	6000.00	8000.00	2400.00	34000.00	31600.00
2	Bob	Analyst	Finance	18000.00	5400.00	7200.00	2160.00	30600.00	28440.00
3	Charlie	Clerk	Admin	12000.00	3600.00	4800.00	1440.00	20400.00	18960.00
4	Diana	Supervisor	HR	15000.00	4500.00	6000.00	1800.00	25500.00	23700.00
5	Eve	Assistant	Finance	9500.00	2850.00	3800.00	1140.00	16150.00	15010.00

5 rows in set (0.00 sec)

```
mysql> SELECT *
-> FROM Emp
-> WHERE GrossPay BETWEEN 10000 AND 20000;
```

EmpNo	EmpName	Job	Dept	Basic	DA	HRA	PF	GrossPay	NetPay
5	Eve	Assistant	Finance	9500.00	2850.00	3800.00	1140.00	16150.00	15010.00

1 row in set (0.04 sec)

```
mysql> SELECT *
-> FROM Emp
-> WHERE GrossPay = (SELECT MAX(GrossPay) FROM Emp);
```

EmpNo	EmpName	Job	Dept	Basic	DA	HRA	PF	GrossPay	NetPay
1	Alice	Manager	HR	20000.00	6000.00	8000.00	2400.00	34000.00	31600.00

1 row in set (0.04 sec)

Question 5

```
mysql> CREATE DATABASE company;
Query OK, 1 row affected (0.06 sec)

mysql> use company;
Database changed
mysql> CREATE TABLE Dept (
  ->     DeptNo INT PRIMARY KEY,
  ->     DName VARCHAR(50),
  ->     Loc VARCHAR(50)
  -> );
Query OK, 0 rows affected (0.07 sec)

mysql>
mysql> CREATE TABLE Emp (
  ->     EmpNo INT PRIMARY KEY,
  ->     EName VARCHAR(50),
  ->     Job VARCHAR(50),
  ->     Mgr INT,
  ->     HireDate DATE,
  ->     Sal DECIMAL(10, 2),
  ->     Comm DECIMAL(10, 2),
  ->     DeptNo INT,
  ->     FOREIGN KEY (DeptNo) REFERENCES Dept(DeptNo)
  -> );
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> INSERT INTO Dept (DeptNo, DName, Loc)
  -> VALUES
  -> (10, 'HR', 'New York'),
  -> (20, 'Finance', 'Chicago'),
  -> (30, 'IT', 'San Francisco'),
  -> (40, 'Admin', 'Los Angeles');
Query OK, 4 rows affected (0.04 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Emp (EmpNo, EName, Job, Mgr, HireDate, Sal, Comm, DeptNo)
  -> VALUES
  -> (1, 'Alice', 'Manager', NULL, '1995-06-15', 70000, 5000, 10),
  -> (2, 'Bob', 'Analyst', 1, '2005-09-25', 50000, 3000, 20),
  -> (3, 'Charlie', 'Clerk', 2, '2010-12-01', 30000, 1500, 30),
  -> (4, 'Diana', 'Supervisor', 1, '1990-03-10', 60000, 4000, 40),
  -> (5, 'Eve', 'Assistant', 3, '2015-05-20', 25000, 1000, 30),
  -> (6, 'Frank', 'Developer', 4, '2018-08-15', 45000, 2000, 30);
Query OK, 6 rows affected (0.04 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

```
mysql> select * from dept;
+-----+-----+-----+
| DeptNo | DName | Loc |
+-----+-----+-----+
| 10 | HR | New York |
| 20 | Finance | Chicago |
| 30 | IT | San Francisco |
| 40 | Admin | Los Angeles |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| EmpNo | EName | Job | Mgr | HireDate | Sal | Comm | DeptNo |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Alice | Manager | NULL | 1995-06-15 | 70000.00 | 5000.00 | 10 |
| 2 | Bob | Analyst | 1 | 2005-09-25 | 50000.00 | 3000.00 | 20 |
| 3 | Charlie | Clerk | 2 | 2010-12-01 | 30000.00 | 1500.00 | 30 |
| 4 | Diana | Supervisor | 1 | 1990-03-10 | 60000.00 | 4000.00 | 40 |
| 5 | Eve | Assistant | 3 | 2015-05-20 | 25000.00 | 1000.00 | 30 |
| 6 | Frank | Developer | 4 | 2018-08-15 | 45000.00 | 2000.00 | 30 |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> UPDATE Emp
-> SET Sal = Sal * 1.15
-> WHERE TIMESTAMPDIFF(YEAR, HireDate, CURDATE()) > 10;
Query OK, 4 rows affected (0.01 sec)
Rows matched: 4 Changed: 4 Warnings: 0
```

```
mysql> SELECT * FROM EMP;
```

EmpNo	ENAME	Job	Mgr	HireDate	Sal	Comm	DeptNo
1	Alice	Manager	NULL	1995-06-15	80500.00	5000.00	10
2	Bob	Analyst	1	2005-09-25	57500.00	3000.00	20
3	Charlie	Clerk	2	2010-12-01	34500.00	1500.00	30
4	Diana	Supervisor	1	1990-03-10	69000.00	4000.00	40
5	Eve	Assistant	3	2015-05-20	25000.00	1000.00	30
6	Frank	Developer	4	2018-08-15	45000.00	2000.00	30

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

```
mysql> DELETE FROM Emp
-> WHERE TIMESTAMPDIFF(YEAR, HireDate, CURDATE()) >= 30;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SELECT * FROM EMP;
```

EmpNo	ENAME	Job	Mgr	HireDate	Sal	Comm	DeptNo
1	Alice	Manager	NULL	1995-06-15	80500.00	5000.00	10
2	Bob	Analyst	1	2005-09-25	57500.00	3000.00	20
3	Charlie	Clerk	2	2010-12-01	34500.00	1500.00	30
5	Eve	Assistant	3	2015-05-20	25000.00	1000.00	30
6	Frank	Developer	4	2018-08-15	45000.00	2000.00	30

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

```
mysql> SELECT Mgr AS ManagerID, COUNT(*) AS EmployeeCount
-> FROM Emp
-> WHERE Mgr IS NOT NULL
-> GROUP BY Mgr
-> ORDER BY EmployeeCount DESC
-> LIMIT 1;
```

ManagerID	EmployeeCount
1	1

```
1 row in set (0.00 sec)
```