LAB Assignment-5

1. Create a table **EMP** with following structure.

E_ID	FNAME	LNAME	HIRE_ DATE	JOB_ID	SAL	DEPT_ID
PK	NOT NULL	NOT NULL	NOT NULL	NOT NULL	NOT NULL	Should be greater than or equal to 10

2.

3.

EMP_ID	FIRST_ NAME	LAST_ NAME	HIRE_ DATE	JOB_ID	SAL	DEPT_ IDselect
198	Donald	Connell	21-Jun-99	SH_CLERK	2600	50
199	Douglas	Grant	13-Jan-98	SH_CLERK	3000	50
200	Jennifer	Whalen	17-Sep-87	AD_ASST	4400	10
201	Michael	Hartstein	19-Jan-99	IT_PROG	6000	20
202	Pat	Fay	25-Oct-89	AC_MGR	6500	20
203	Susan	Mavris	26-Nov-76	AD_VP	7500	40
204	Hermann	Baer	23-Aug-95	AD_PRES	9500	90
205	Shelley	Higgins	24-Feb-98	AC_MGR	2300	60
206	William	Gitz	12-Mar-01	IT_PROG	5000	60
100	Steven	King	15-Jun-02	AD_ASST	8956	100
101	Neena	Kochar	10-Jul-03	SH_CLERK	3400	30

QUERY: CREATE TABLE EMP (EMP_ID INT PRIMARY KEY, FIRST_NAME VARCHAR(20) NOT NULL, LAST_NAME VARCHAR(20) NOT NULL, HIRE_DATE DATE NOT NULL, JOB_ID VARCHAR(20) NOT NULL, SAL DECIMAL(10,2) CHECK (SAL >= 10) NOT NULL, DEPT_ID INT NOT NULL);

```
mysql> CREATE TABLE EMP (EMP_ID INT PRIMARY KEY, FIRST_NAME VARCHAR(20) NOT NULL, LAST_NAME VARCHAR(20) NOT NULL, HIRE_DATE DATE NOT NULL, JOB_ID VARCHAR(20
) NOT NULL, SAL DECIMAL(10,2) CHECK (SAL >= 10) NOT NULL, DEPT_ID INT NOT NULL);
Query OK, 0 rows affected (1.223 sec)

mysql> INSERT INTO EMP VALUES (198,'Donald','Connell','1999-06-21','SH_CLERK',2600,50),(199,'Douglas','Grant','1998-01-13','SH_CLERK',3000,50),(200,'Jennife
r','Whalen','1987-09-17','AD_ASST',4400,10),(201,'Michael','Hartstein','1999-01-19','IT_PROG',6000,20),(202,'Pat','Fay','1989-10-25','AC_MGR',6500,20),(203,
'Susan','Mavris','1976-11-26','AD_VP',7500,40),(204,'Hermann','Baer','1995-08-23','AD_PRES',9500,90),(205,'Shelley','Higgins','1998-02-24','AC_MGR',2300,60)
,(206,'William','Gitz','2001-03-12','IT_PROG',5000,60),(100,'Steven','King','2002-06-15','AD_ASST',8956,100),(101,'Neena','Kochar','2003-07-10','SH_CLERK',3
400,30);
Query OK, 11 rows affected (0.272 sec)
Records: 11  Duplicates: 0  Warnings: 0
```

4. Display the fname of all employees in ascending order. Give appropriate alias name to the column.
QUERY: SELECT FNAME FROM EMP ORDER BY FNAME;

```
mysql> SELECT FIRST_NAME FROM EMP ORDER BY FIRST_NAME;
+------------+
| FIRST_NAME |
+------------+
| Donald     |
| Douglas    |
| Hermann    |
| Jennifer   |
| Michael    |
| Neena      |
| Pat        |
| Shelley    |
| Steven     |
| Susan      |
| William    |
+------------+
11 rows in set (0.010 sec)
```

5. Display the fname of all employees in descending order. Give appropriate alias name to the column.
QUERY: SELECT FIRST_NAME AS FNAME FROM EMP ORDER BY FIRST_NAME DESC;

```
mysql> SELECT FIRST_NAME AS FNAME FROM EMP ORDER BY FIRST_NAME DESC;
+----------+
| FNAME    |
+----------+
| William  |
| Susan    |
| Steven   |
| Shelley  |
| Pat      |
| Neena    |
| Michael  |
| Jennifer |
| Hermann  |
| Douglas  |
| Donald   |
+----------+
11 rows in set (0.016 sec)
```

6. Display the hire date of all employees in ascending order.
QUERY: SELECT HIRE_DATE FROM EMP ORDER BY HIRE_DATE;

```
mysql> SELECT HIRE_DATE FROM EMP ORDER BY HIRE_DATE;
+------------+
| HIRE_DATE  |
+------------+
| 1976-11-26 |
| 1987-09-17 |
| 1989-10-25 |
| 1995-08-23 |
| 1998-01-13 |
| 1998-02-24 |
| 1999-01-19 |
| 1999-06-21 |
| 2001-03-12 |
| 2002-06-15 |
| 2003-07-10 |
+------------+
11 rows in set (0.017 sec)
```

7. Display the employee details whose fname starts with either J or M. Sort the result by employee lname.
QUERY: SELECT * FROM EMP WHERE FIRST_NAME LIKE 'J%' OR FIRST_NAME LIKE 'M%' ORDER BY LAST_NAME;

```
mysql> SELECT * FROM EMP WHERE FIRST_NAME LIKE 'J%' OR FIRST_NAME LIKE 'M%' ORDER BY LAST_NAME;
+--------+------------+-----------+------------+---------+---------+---------+
| EMP_ID | FIRST_NAME | LAST_NAME | HIRE_DATE  | JOB_ID  | SAL     | DEPT_ID |
+--------+------------+-----------+------------+---------+---------+---------+
|    201 | Michael    | Hartstein | 1999-01-19 | IT_PROG | 6000.00 |      20 |
|    200 | Jennifer   | Whalen    | 1987-09-17 | AD_ASST | 4400.00 |      10 |
+--------+------------+-----------+------------+---------+---------+---------+
2 rows in set (0.135 sec)
```

8. Find the highest, lowest, average and sum of salary of all employees. Give alias names to all the columns as 'Max', 'Min', 'Avg', 'Sum' respectively.
QUERY: SELECT MAX(SALARY) AS MAX, MIN(SALARY) AS MIN, AVG(SALARY) AS AVG, SUM(SALARY) AS SUM FROM EMP;

```
mysql> SELECT MAX(SAL) AS MAX, MIN(SAL) AS MIN, AVG(SAL) AS AVG, SUM(SAL) AS SUM FROM EMP;
+---------+---------+-------------+----------+
| MAX     | MIN     | AVG         | SUM      |
+---------+---------+-------------+----------+
| 9500.00 | 2300.00 | 5377.818182 | 59156.00 |
+---------+---------+-------------+----------+
1 row in set (0.114 sec)
```

9. Find the highest, lowest, average and sum of salary of all employees of each individual job type.
QUERY: SELECT MAX(SAL), MIN(SALARY), AVG(SALARY), SUM(SAL), JOB_ID FROM EMP GROUP BY JOB_ID;

```
mysql> SELECT MAX(SAL), MIN(SAL), AVG(SAL), SUM(SAL), JOB_ID FROM EMP GROUP BY JOB_ID;
+----------+----------+-------------+----------+----------+
| MAX(SAL) | MIN(SAL) | AVG(SAL)    | SUM(SAL) | JOB_ID   |
+----------+----------+-------------+----------+----------+
|  8956.00 |  4400.00 | 6678.000000 | 13356.00 | AD_ASST  |
|  3400.00 |  2600.00 | 3000.000000 |  9000.00 | SH_CLERK |
|  6000.00 |  5000.00 | 5500.000000 | 11000.00 | IT_PROG  |
|  6500.00 |  2300.00 | 4400.000000 |  8800.00 | AC_MGR   |
|  7500.00 |  7500.00 | 7500.000000 |  7500.00 | AD_VP    |
|  9500.00 |  9500.00 | 9500.000000 |  9500.00 | AD_PRES  |
+----------+----------+-------------+----------+----------+
6 rows in set (0.077 sec)
```

10. Display the number of people under each job.
QUERY: SELECT COUNT(*), JOB_ID FROM EMP GROUP BY JOB_ID;

```
mysql> SELECT COUNT(*), JOB_ID FROM EMP GROUP BY JOB_ID;
+----------+----------+
| COUNT(*) | JOB_ID   |
+----------+----------+
|        2 | AD_ASST  |
|        3 | SH_CLERK |
|        2 | IT_PROG  |
|        2 | AC_MGR   |
|        1 | AD_VP    |
|        1 | AD_PRES  |
+----------+----------+
6 rows in set (0.018 sec)
```

11. Display the number of managers in the company without listing their emp_id or names.
QUERY: SELECT COUNT(*), JOB_ID FROM EMP WHERE JOB_ID LIKE '%MGR' GROUP BY JOB_ID;

```
mysql> SELECT COUNT(*), JOB_ID FROM EMP WHERE JOB_ID LIKE '%MGR' GROUP BY JOB_ID;
+----------+--------+
| COUNT(*) | JOB_ID |
+----------+--------+
|        2 | AC_MGR |
+----------+--------+
1 row in set (0.022 sec)
```

12. Find the difference between the highest and the lowest salaries.

QUERY: SELECT (MAX(SAL) – MIN(SAL)) AS SALARY_DIFFERENCE FROM EMP;

```
mysql> SELECT (MAX(SAL) - MIN(SAL)) AS SALARY_DIFFERENCE FROM EMP;
+-------------------+
| SALARY_DIFFERENCE |
+-------------------+
|           7200.00 |
+-------------------+
1 row in set (0.093 sec)
```

13. Display the maximum and average salary of the engineers.
QUERY:

14. Display the employee fname that is first and the employee fname that is last in the alphabetized list of all employees.
QUERY: SELECT MIN(FIRST_NAME) AS FIRST_EMPLOYEE, MAX(FIRST_NAME) AS LAST_EMPLOYEE FROM EMP;

```
mysql> SELECT MIN(FIRST_NAME) AS FIRST_EMPLOYEE, MAX(FIRST_NAME) AS LAST_EMPLOYEE
    -> FROM EMP;
+----------------+---------------+
| FIRST_EMPLOYEE | LAST_EMPLOYEE |
+----------------+---------------+
| Donald         | William       |
+----------------+---------------+
1 row in set (0.009 sec)
```

15. Display the date when the first employee was hired and last date of hiring the employees. Rename the column as ‘First Hire_Date’ and ‘Last Hire_Date’.
QUERY: SELECT MIN(HIRE_DATE) AS "First Hire_Date", MAX(HIRE_DATE) AS "Last Hire_Date" FROM EMP;

```
mysql> SELECT MIN(HIRE_DATE) AS "First Hire_Date", MAX(HIRE_DATE) AS "Last Hire_Date"
    -> FROM EMP;
+-----------------+----------------+
| First Hire_Date | Last Hire_Date |
+-----------------+----------------+
| 1976-11-26      | 2003-07-10     |
+-----------------+----------------+
1 row in set (0.017 sec)
```

16. Display the maximum and average salary of the clerks.
QUERY: SELECT MAX(SAL) AS MAX_SALARY, AVG(SAL) AS AVG_SALARY FROM EMP WHERE JOB_ID LIKE '%CLERK%';

```
mysql> SELECT MAX(SAL) AS MAX_SALARY, AVG(SAL) AS AVG_SALARY
    -> FROM EMP
    -> WHERE JOB_ID LIKE '%CLERK%';
+------------+-------------+
| MAX_SALARY | AVG_SALARY  |
+------------+-------------+
|    3400.00 | 3000.000000 |
+------------+-------------+
1 row in set (0.012 sec)
```

17. Display the dept no. and the salary of the lowest paid employee for each department. Give an alias name to the minimum salary column.
QUERY: SELECT DEPT_ID, MIN(SAL) AS MIN_SALARY
FROM EMP GROUP BY DEPT_ID;

```
mysql> SELECT DEPT_ID, MIN(SAL) AS MIN_SALARY
    -> FROM EMP
    -> GROUP BY DEPT_ID;
+---------+------------+
| DEPT_ID | MIN_SALARY |
+---------+------------+
|     100 |    8956.00 |
|      30 |    3400.00 |
|      50 |    2600.00 |
|      10 |    4400.00 |
|      20 |    6000.00 |
|      40 |    7500.00 |
|      90 |    9500.00 |
|      60 |    2300.00 |
+---------+------------+
8 rows in set (0.012 sec)
```

18. Display the dept no. and the salary of the lowest paid employee for each department. Exclude any groups where the minimum salary is 3000 or less. Sort the output in descending order of salary.
QUERY: SELECT DEPT_ID, MIN(SAL) AS MIN_SALARY FROM EMP
GROUP BY DEPT_ID HAVING MIN(SAL) > 3000 ORDER BY MIN_SALARY DESC;

```
mysql> SELECT DEPT_ID, MIN(SAL) AS MIN_SALARY
    -> FROM EMP
    -> GROUP BY DEPT_ID
    -> HAVING MIN(SAL) > 3000
    -> ORDER BY MIN_SALARY DESC;
+---------+------------+
| DEPT_ID | MIN_SALARY |
+---------+------------+
|      90 |    9500.00 |
|     100 |    8956.00 |
|      40 |    7500.00 |
|      20 |    6000.00 |
|      10 |    4400.00 |
|      30 |    3400.00 |
+---------+------------+
6 rows in set (0.084 sec)
```

19. Display the following for all rows of the table:
<First_name > whose designation is <job_id> gets <Salary> but wants to earn <3*Salary>.

QUERY: SELECT CONCAT(FIRST_NAME, ' whose designation is ', JOB_ID,
' gets ', SAL, ' but wants to earn ', SAL * 3) AS DETAIL FROM EMP;

```
mysql> SELECT CONCAT(FIRST_NAME, ' whose designation is ', JOB_ID,
    ->                ' gets ', SAL, ' but wants to earn ', SAL * 3) AS DETAILS
    -> FROM EMP;
+-------------------------------------------------------------------------------+
| DETAILS                                                                       |
+-------------------------------------------------------------------------------+
| Steven whose designation is AD_ASST gets 8956.00 but wants to earn 26868.00   |
| Neena whose designation is SH_CLERK gets 3400.00 but wants to earn 10200.00   |
| Donald whose designation is SH_CLERK gets 2600.00 but wants to earn 7800.00   |
| Douglas whose designation is SH_CLERK gets 3000.00 but wants to earn 9000.00  |
| Jennifer whose designation is AD_ASST gets 4400.00 but wants to earn 13200.00 |
| Michael whose designation is IT_PROG gets 6000.00 but wants to earn 18000.00  |
| Pat whose designation is AC_MGR gets 6500.00 but wants to earn 19500.00       |
| Susan whose designation is AD_VP gets 7500.00 but wants to earn 22500.00      |
| Hermann whose designation is AD_PRES gets 9500.00 but wants to earn 28500.00  |
| Shelley whose designation is AC_MGR gets 2300.00 but wants to earn 6900.00    |
| William whose designation is IT_PROG gets 5000.00 but wants to earn 15000.00  |
+-------------------------------------------------------------------------------+
11 rows in set (0.085 sec)
```

20. Display the details of all employees in the following format:

198, Donald, Connell, 21-Jun-99, SH_CLERK, 2600, 50

QUERY: SELECT CONCAT(EMP_ID, ', ', FIRST_NAME, ', ', LAST_NAME, ', ',
DATE_FORMAT(HIRE_DATE, '%d-%b-%y'), ', ', JOB_ID, ', ',

SAL, ', ', DEPT_ID) AS EMP_DETAILS FROM EMP;

```
mysql> SELECT CONCAT(EMP_ID, ', ', FIRST_NAME, ', ', LAST_NAME, ', ',
    ->              DATE_FORMAT(HIRE_DATE, '%d-%b-%y'), ', ', JOB_ID, ', ',
    ->              SAL, ', ', DEPT_ID) AS EMP_DETAILS
    -> FROM EMP;
+-------------------------------------------------------------+
| EMP_DETAILS                                                 |
+-------------------------------------------------------------+
| 100, Steven, King, 15-Jun-02, AD_ASST, 8956.00, 100         |
| 101, Neena, Kochar, 10-Jul-03, SH_CLERK, 3400.00, 30        |
| 198, Donald, Connell, 21-Jun-99, SH_CLERK, 2600.00, 50      |
| 199, Douglas, Grant, 13-Jan-98, SH_CLERK, 3000.00, 50       |
| 200, Jennifer, Whalen, 17-Sep-87, AD_ASST, 4400.00, 10      |
| 201, Michael, Hartstein, 19-Jan-99, IT_PROG, 6000.00, 20    |
| 202, Pat, Fay, 25-Oct-89, AC_MGR, 6500.00, 20               |
| 203, Susan, Mavris, 26-Nov-76, AD_VP, 7500.00, 40           |
| 204, Hermann, Baer, 23-Aug-95, AD_PRES, 9500.00, 90         |
| 205, Shelley, Higgins, 24-Feb-98, AC_MGR, 2300.00, 60       |
| 206, William, Gitz, 12-Mar-01, IT_PROG, 5000.00, 60         |
+-------------------------------------------------------------+
11 rows in set (0.111 sec)
```

21. Display today's date. Rename the column as TODAY.
QUERY: SELECT CURDATE() AS TODAY;

```
mysql> SELECT CURDATE() AS TODAY;
+------------+
| TODAY      |
+------------+
| 2025-10-27 |
+------------+
1 row in set (0.077 sec)
```

22. Display the Employee id, the day and the year in which the employees were hired.
QUERY: SELECT EMP_ID,
DAYNAME(HIRE_DATE) AS DAY, YEAR(HIRE_DATE) AS YEAR FROM EMP;

```
mysql> SELECT EMP_ID,
    ->        DAYNAME(HIRE_DATE) AS DAY,
    ->        YEAR(HIRE_DATE) AS YEAR
    -> FROM EMP;
+--------+-----------+------+
| EMP_ID | DAY       | YEAR |
+--------+-----------+------+
|    100 | Saturday  | 2002 |
|    101 | Thursday  | 2003 |
|    198 | Monday    | 1999 |
|    199 | Tuesday   | 1998 |
|    200 | Thursday  | 1987 |
|    201 | Tuesday   | 1999 |
|    202 | Wednesday | 1989 |
|    203 | Friday    | 1976 |
|    204 | Wednesday | 1995 |
|    205 | Tuesday   | 1998 |
|    206 | Monday    | 2001 |
+--------+-----------+------+
11 rows in set (0.108 sec)
```

23. Display the employee name and the hire date of all employees in the format 'dd-month-yy'.
QUERY: SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME,
DATE_FORMAT(HIRE_DATE, '%d-%M-%y') AS HIRE_DATE FROM EMP;

```
mysql> SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME,
    ->        DATE_FORMAT(HIRE_DATE, '%d-%M-%y') AS HIRE_DATE
    -> FROM EMP;
+------------------+----------------+
| EMP_NAME         | HIRE_DATE      |
+------------------+----------------+
| Steven King      | 15-June-02     |
| Neena Kochar     | 10-July-03     |
| Donald Connell   | 21-June-99     |
| Douglas Grant    | 13-January-98  |
| Jennifer Whalen  | 17-September-87 |
| Michael Hartstein | 19-January-99  |
| Pat Fay          | 25-October-89  |
| Susan Mavris     | 26-November-76 |
| Hermann Baer     | 23-August-95   |
| Shelley Higgins  | 24-February-98 |
| William Gitz     | 12-March-01    |
+------------------+----------------+
11 rows in set (0.012 sec)
```

24. Display the employee_id, months in which the employees were hired.
QUERY: SELECT EMP_ID, MONTHNAME(HIRE_DATE) AS HIRE_MONTH FROM EMP;

```
mysql> SELECT EMP_ID,
    ->        MONTHNAME(HIRE_DATE) AS HIRE_MONTH
    -> FROM EMP;
+--------+------------+
| EMP_ID | HIRE_MONTH |
+--------+------------+
|    100 | June       |
|    101 | July       |
|    198 | June       |
|    199 | January    |
|    200 | September  |
|    201 | January    |
|    202 | October    |
|    203 | November   |
|    204 | August     |
|    205 | February   |
|    206 | March      |
+--------+------------+
11 rows in set (0.106 sec)
```

25. Display the employee name, Employee id and the hire date of all employees in the format 'dd-mon-yyyy'.
QUERY: SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME, EMP_ID, DATE_FORMAT(HIRE_DATE, '%d-%b-%Y') AS HIRE_DATE
FROM EMP;

```
mysql> SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME, EMP_ID,
    ->        DATE_FORMAT(HIRE_DATE, '%d-%b-%Y') AS HIRE_DATE
    -> FROM EMP;
+------------------+--------+-------------+
| EMP_NAME         | EMP_ID | HIRE_DATE   |
+------------------+--------+-------------+
| Steven King      |    100 | 15-Jun-2002 |
| Neena Kochar     |    101 | 10-Jul-2003 |
| Donald Connell   |    198 | 21-Jun-1999 |
| Douglas Grant    |    199 | 13-Jan-1998 |
| Jennifer Whalen  |    200 | 17-Sep-1987 |
| Michael Hartstein|    201 | 19-Jan-1999 |
| Pat Fay          |    202 | 25-Oct-1989 |
| Susan Mavris     |    203 | 26-Nov-1976 |
| Hermann Baer     |    204 | 23-Aug-1995 |
| Shelley Higgins  |    205 | 24-Feb-1998 |
| William Gitz     |    206 | 12-Mar-2001 |
+------------------+--------+-------------+
11 rows in set (0.009 sec)
```

26. Display the employee name, Employee id and the hire date of all employees in the format 'month-dd-yyyy'.
QUERY: SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME, EMP_ID, DATE_FORMAT(HIRE_DATE, '%M-%d-%Y') AS HIRE_DATE FROM EMP;

```
mysql> SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS EMP_NAME, EMP_ID,
    ->        DATE_FORMAT(HIRE_DATE, '%M-%d-%Y') AS HIRE_DATE
    -> FROM EMP;
+------------------+--------+------------------+
| EMP_NAME         | EMP_ID | HIRE_DATE        |
+------------------+--------+------------------+
| Steven King      |    100 | June-15-2002     |
| Neena Kochar     |    101 | July-10-2003     |
| Donald Connell   |    198 | June-21-1999     |
| Douglas Grant    |    199 | January-13-1998  |
| Jennifer Whalen  |    200 | September-17-1987 |
| Michael Hartstein |    201 | January-19-1999  |
| Pat Fay          |    202 | October-25-1989  |
| Susan Mavris     |    203 | November-26-1976 |
| Hermann Baer     |    204 | August-23-1995   |
| Shelley Higgins  |    205 | February-24-1998 |
| William Gitz     |    206 | March-12-2001    |
+------------------+--------+------------------+
11 rows in set (0.011 sec)
```

27. Display the system year in full spelling.(Ex: Nineteen Ninety Nine for 1999)
QUERY:

28. Find date, 15 days after today's date, 15 days before today's date.
QUERY: SELECT CURDATE() AS TODAY, DATE_ADD(CURDATE(), INTERVAL 15 DAY) AS `15_DAYS_AFTER`, DATE_SUB(CURDATE(), INTERVAL 15 DAY) AS `15_DAYS_BEFORE`;

29. Ensure the domain constraint and entity integrity constraint from the above table.
QUERY: ALTER TABLE EMP MODIFY SAL DEPT_ID (DEPT_ID >= 10);
ALTER TABLE EMP ADD CONSTRAINT PK_EMP PRIMARY KEY (EMP_ID);

30. Drop the domain constraint from the table.
QUERY: ALTER TABLE EMP DROP CHECK

31. Drop the primary key from the table.
QUERY: ALTER TABLE EMP DROP PRIMARY KEY;

```
mysql> ALTER TABLE EMP DROP PRIMARY KEY;
Query OK, 11 rows affected (0.999 sec)
Records: 11  Duplicates: 0  Warnings: 0
```

32. Drop the created table.

QUERY: DROP TABLE EMP;

```
mysql> DROP TABLE EMP;
Query OK, 0 rows affected (0.300 sec)
```