1. **Write SQL queries in MySQL for the following**.

a. Write an SQL Query to find the year from date.

SQL Query: select year(current date);

Output:

```
+--------------------+
| year (current date) |
+--------------------+
|           2024 |
+--------------------+
```

b. Check whether date passed to Query is the date of a given format or not.

SQL Query:

```
select if (date format(current_date,'%d-%m-%Y') = current_date, 'Yes', 'No');
```

Output:

```
+-------------------------------------------------------------------------+
| if(date_format(current_date,'%d-%m-%Y') = current_date, 'Yes' , 'No') |
+-------------------------------------------------------------------------+
| No                                                                      |
+-------------------------------------------------------------------------+
```

c. Find the size of the SCHEMA/USER.

SQL Query:

```
SELECT SUM(DATA_LENGTH + INDEX_LENGTH) AS size
    FROM information_schema.TABLES
    WHERE TABLE_SCHEMA = 'mysql';
```

Output:

```
+---------+
| size    |
+---------+
| 2752512 |
+---------+
```

d. Display the current time.

SQL Query: SELECT(CURRENT_TIME);

Output:

```
+----------------+
| (current_time) |
+----------------+
| 15:15:20       |
+----------------+
```

e. Given a date, retrieve the next days date.

SQL Query: SELECT DATE_ADD(current_date,INTERVAL 1 DAY);

Output:

```
+---------------------------------------+
| DATE_ADD(current_date,INTERVAL 1 DAY) |
+---------------------------------------+
| 2024-07-26                            |
+---------------------------------------+
```

f. Get database date.

SQL Query: select curdate() as database_date;

Output:

```
+---------------+
| database_date |
+---------------+
| 2024-07-25    |
+---------------+
```

g. Returns the default(current) database name.
SQL Query: select database();
Output:

```
+----------------+
| database()     |
+----------------+
| Vaishnavi_106122072 |
+----------------+
```

h. Retrieve the current MySQL user name and host name.
SQL Query: SELECT USER() AS mysql_user_host;
Output:

```
+-----------------+
| mysql_user_host |
+-----------------+
| root@localhost  |
+-----------------+
```

i. Find the string that tells the MySQL server version.
SQL Query: SELECT VERSION() AS mysql_server_version;
Output:

```
+-------------------------+
| mysql_server_version    |
+-------------------------+
| 8.0.37-0ubuntu0.20.04.3 |
+-------------------------+
```

j. Perform Bitwise OR, Bitwise XOR and Bitwise AND.
SQL Query: SELECT 2 | 3 AS bitwise_or,2 ^ 3 AS bitwise_xor,2 & 3 AS bitwise_and;
Output:

```
+------------+-------------+-------------+
| bitwise_or | bitwise_xor | bitwise_and |
+------------+-------------+-------------+
|          3 |           1 |           2 |
+------------+-------------+-------------+
```

k. Find the difference between two dates and print in terms of the number of days.
SQL Query: SELECT DATEDIFF('2007-12-31 23:59:59','2007-12-30');
Output:

```
+-----------------------------------------------+
| DATEDIFF('2007-12-31 23:59:59','2007-12-30') |
+-----------------------------------------------+
|                                             1 |
+-----------------------------------------------+
```

l. Add one day to the current date.
SQL Query: SELECT DATE_ADD(current_date,INTERVAL 1 DAY);
Output:

```
+---------------------------------------+
| DATE_ADD(current_date,INTERVAL 1 DAY) |
+---------------------------------------+
| 2024-07-26                            |
+---------------------------------------+
```

m. Add two hours and 5000 minutes to the current date and print the new date.
SQL Query: SELECT DATE_ADD(current_date,INTERVAL '2:5000' HOUR_MINUTE);
Output:

```
+-----------------------------------------------------+
| DATE_ADD(current_date,INTERVAL '2:5000' HOUR_MINUTE) |
+-----------------------------------------------------+
| 2024-07-28 13:20:00                                 |
+-----------------------------------------------------+
```

n. Find the floor and ceil values of a floating point number. Also operate on the power, log, modulus, round off and truncate functions.
SQL Query: select floor(4.3), ceil(6.3);
Output:

```
+------------+-----------+
| floor(4.3) | ceil(6.3) |
+------------+-----------+
|          4 |         7 |
+------------+-----------+
```

SQL Query: SELECT POWER(2, 3), LOG10(100);
Output:

```
+-------------+------------+
| POWER(2, 3) | LOG10(100) |
+-------------+------------+
|           8 |          2 |
+-------------+------------+
```

SQL Query: SELECT MOD(10, 3), ROUND(3.14159, 2), TRUNCATE(3.14159, 2);
Output:

```
+------------+-------------------+----------------------+
| MOD(10, 3) | ROUND(3.14159, 2) | TRUNCATE(3.14159, 2) |
+------------+-------------------+----------------------+
|          1 |              3.14 |                 3.14 |
+------------+-------------------+----------------------+
```

o. In the first name of the employee, match the following using regular expressions.
SQL Query: SELECT

```
    -> CASE
    ->   WHEN 'Nisha' REGEXP '^n' THEN 'Name starts with n'
    ->   ELSE 'Name does not start with n'
    -> END AS result;
```

Output:

```
+--------------------+
| result             |
+--------------------+
| Name starts with n |
+--------------------+
```

p. Compare two strings and print the value ‘yes’ if they are equal, else print ‘no’.
SQL Query: SELECT CASE WHEN 'apple' = 'banana' THEN 'yes' ELSE 'no' END AS result;
Output:

```
+--------+
| result |
+--------+
| no     |
+--------+
```

q. Simulate the construct in MySQL for a mark and grade setup.

SQL Query: SELECT
```
    -> 85 AS marks,
    -> CASE
    ->   WHEN 85 >= 90 AND 85 <= 100 THEN 'A'
    ->   WHEN 85 >= 80 AND 85 < 90 THEN 'B'
    ->   WHEN 85 >= 70 AND 85 < 80 THEN 'C'
    ->   WHEN 85 >= 60 AND 85 < 70 THEN 'D'
    ->   WHEN 85 >= 0 AND 85 < 60 THEN 'F'
    ->   ELSE 'Invalid marks'
    -> END AS grade;
```
Output:
```
+-------+-------+
| marks | grade |
+-------+-------+
|   85 | B     |
+-------+-------+
```

r. Use IFNULL to check whether a mathematical expression gives a NULL value or not

SQL Query: SELECT IFNULL (20 / 10, 'Result is NULL') AS result;

Output:
```
+--------+
| result |
+--------+
| 2.0000 |
+--------+
```