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) |
+----------------+
| 15:00:01       |
+----------------+
```

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()     |
+----------------+
| dbms1_134 |
+----------------+
```

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 12 | 2 AS bitwise_or,12 ^ 2 AS bitwise_xor,12 & 2 AS bitwise_and;
Output:

```
+------------+-------------+-------------+
| bitwise_or | bitwise_xor | bitwise_and |
+------------+-------------+-------------+
|         14 |          14 |           0 |
+------------+-------------+-------------+
```

k. Find the difference between two dates and print in terms of the number of days.
SQL Query: SELECT DATEDIFF('2024-07-25 23:59:59','2005-10-14');
Output:

```
+----------------------------------------------+
| DATEDIFF('2024-07-23 23:59:59','2005-10-14') |
+----------------------------------------------+
|                                         6859 |
+----------------------------------------------+
```

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(3.14), ceil(3.14);
Output:

```
+-------------+------------+
| floor(3.14) | ceil(3.14) |
+-------------+------------+
|           3 |          4 |
+-------------+------------+
```

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 'Harry' REGEXP '^h' THEN 'Name starts with h'
               ->         ELSE 'Name does not start with h'
               ->     END AS result;
```

Output:

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

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 |
+-------+-------+
|    81 | B     |
+-------+-------+
```

r. Use IFNULL to check whether a mathematical expression gives a NULL value or not
SQL Query: SELECT IFNULL (10 / 5, 'Result is NULL') AS result;
Output:

```
+--------+
| result |
+--------+
| 2.0000 |
+--------+
```