DBMS

# Lab 6 – Aggregate Function

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SRN: PES1UG20CS648

Section: K

Roll No: 43

1. Find the average distance between subsequent stations for every train

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT AVG(distance), train_no FROM route_info GROUP BY train_no;
+---------------+----------+
| AVG(distance) | train_no |
+---------------+----------+
|      277.1667 |    25260 |
|      277.1667 |    25261 |
|      280.3333 |    58450 |
|      279.8333 |    58451 |
|      184.4000 |    62620 |
|      185.0000 |    62621 |
+---------------+----------+
6 rows in set (0.022 sec)
```

2. Find the average distance between subsequent stations for every train and display them in descending order of distance

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT AVG(distance), train_no FROM route_info GROUP BY train_no ORDER BY AVG(dista
nce) DESC;
+---------------+----------+
| AVG(distance) | train_no |
+---------------+----------+
|      280.3333 |    58450 |
|      279.8333 |    58451 |
|      277.1667 |    25260 |
|      277.1667 |    25261 |
|      185.0000 |    62621 |
|      184.4000 |    62620 |
+---------------+----------+
6 rows in set (0.001 sec)
```

3. Display the list of train numbers and the total distance traveled by each in descending order of the distance travelled

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT train.train_no, distance FROM train, route_info WHERE
    -> from_station_name = source AND to_station_name = destination ORDER BY distance DESC;
+----------+----------+
| train_no | distance |
+----------+----------+
|    58450 |      504 |
|    58451 |      503 |
|    25260 |      481 |
|    25261 |      481 |
|    62621 |      362 |
|    62620 |      361 |
+----------+----------+
6 rows in set (0.019 sec)
```

4. List those trains that have maximum and minimum number compartments and also display number of compartments they have. (2 queries one to find max and other to find min)

```
MariaDB [cs_pes1ug20cs648_railways]> WITH X AS (SELECT train_number, COUNT(*) as compartment_number FROM compartment GRO
UP BY train_number) SELECT train_number, compartment_number FROM X ORDER BY compartment_number ASC LIMIT 1;
+--------------+--------------------+
| train_number | compartment_number |
+--------------+--------------------+
|        58451 |                  2 |
+--------------+--------------------+
1 row in set (0.016 sec)

MariaDB [cs_pes1ug20cs648_railways]> WITH X AS (SELECT train_number, COUNT(*) as compartment_number FROM compartment GRO
UP BY train_number) SELECT train_number, compartment_number FROM X ORDER BY compartment_number DESC LIMIT 1;
+--------------+--------------------+
| train_number | compartment_number |
+--------------+--------------------+
|        25261 |                  5 |
+--------------+--------------------+
1 row in set (0.000 sec)
```

5. Display the number of phone numbers corresponding to the user_id(s) ADM_001, USR_006, USR_10

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT user_id, phone_no FROM user_phone WHERE user_id IN ('ADM_001', 'USR_006', 'U
SR_010');
+---------+------------+
| user_id | phone_no   |
+---------+------------+
| ADM_001 | 9845012345 |
| ADM_001 | 9900123456 |
| USR_006 | 9845012345 |
| USR_006 | 9900123456 |
| USR_010 | 9845012345 |
| USR_010 | 9900123456 |
+---------+------------+
6 rows in set (0.021 sec)
```

6. Find the average fare per km for each train type specified and display the train type and corresponding average fare per km as ‘Avg_Fare’ in decreasing order of Avg_Fare

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT train_type, AVG(fare_per_km) as Avg_Fare FROM fare GROUP BY train_type ORDER
 BY Avg_Fare DESC;
+------------+----------+
| train_type | Avg_Fare |
+------------+----------+
| Fast       |   2.0000 |
| Superfast  |   2.0000 |
| Mail       |   1.3333 |
+------------+----------+
3 rows in set (0.021 sec)
```

7. Retrieve all details of the oldest passenger.

```
MariaDB [cs_pes1ug20cs648_railways]> select * from ticket_passenger where Age = (select max(Age) as max_age from ticket_
passenger);
+---------+---------+------+--------+
| seat_no | name    | age  | pnr    |
+---------+---------+------+--------+
| F01-13  | Ramya R |   45 | PNR012 |
+---------+---------+------+--------+
1 row in set (0.016 sec)
```

8. Count the number of passengers whose name consists of ‘Ullal’. (Hint: Use the LIKE operator)

```
MariaDB [cs_pes1ug20cs648_railways]> SELECT COUNT(*) FROM ticket_passenger WHERE name LIKE '%Ullal%';
+----------+
| COUNT(*) |
+----------+
|        4 |
+----------+
1 row in set (0.012 sec)
```