UE20CS301

Database Management System

Lab 6 – Aggregate Functions

Name : Renita Kurian

SRN : PES1UG20CS331

Roll No. : 13

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

```
MariaDB [railway_system]> select train_no, avg(distance) from route_331 group by train_no;
+----------+---------------+
| train_no | avg(distance) |
+----------+---------------+
|    25260 |      277.1667 |
|    25261 |      277.1667 |
|    58450 |      280.3333 |
|    58451 |      279.8333 |
|    62620 |      184.4000 |
|    62621 |      185.0000 |
+----------+---------------+
6 rows in set (0.047 sec)
```

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

```
MariaDB [railway_system]> select train_no, avg(distance) as dist from route_331 group by train_no order by dist desc;
+----------+----------+
| train_no | dist     |
+----------+----------+
|    58450 | 280.3333 |
|    58451 | 279.8333 |
|    25260 | 277.1667 |
|    25261 | 277.1667 |
|    62621 | 185.0000 |
|    62620 | 184.4000 |
+----------+----------+
6 rows in set (0.004 sec)
```

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

```
MariaDB [railway_system]> select train_no, sum(distance) as total_distance from route_331 group by
 train_no order by total_distance desc;
+----------+----------------+
| train_no | total_distance |
+----------+----------------+
|    62621 |           1850 |
|    62620 |           1844 |
|    58450 |           1682 |
|    58451 |           1679 |
|    25260 |           1663 |
|    25261 |           1663 |
+----------+----------------+
6 rows in set (0.002 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 [railway_system]> select train_no, count(*) from compartment_331 group by train_no order by
count(*) desc limit 1;
+----------+----------+
| train_no | count(*) |
+----------+----------+
|    62621 |        5 |
+----------+----------+
1 row in set (0.015 sec)

MariaDB [railway_system]> select train_no, count(*) from compartment_331 group by train_no order by
count(*) limit 1;
+----------+----------+
| train_no | count(*) |
+----------+----------+
|    58451 |        2 |
+----------+----------+
1 row in set (0.001 sec)
```

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

```
MariaDB [railway_system]> select userID, count_no from (select userID, count(phoneNo) as count_no from
Phone_331 group by userID) as PhoneCount where PhoneCount.userID in ('ADM_001', 'USR_006', 'USR_010');
+---------+----------+
| userID  | count_no |
+---------+----------+
| ADM_001 |        2 |
| USR_006 |        2 |
| USR_010 |        2 |
+---------+----------+
3 rows in set (0.032 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 [railway_system]> select trainType, avg(farePerKm) as avg_fare from fare_table_331 group by
 trainType order by avg_fare desc;
+-----------+--------------------+
| trainType | avg_fare           |
+-----------+--------------------+
| Superfast | 2.1799999872843423 |
| Fast      | 1.8166666825612385 |
| Mail      | 1.5333333214124043 |
+-----------+--------------------+
3 rows in set (0.004 sec)
```

7. Retrieve all details of the oldest passenger.

```
MariaDB [railway_system]> select * from passenger_331 order by age desc limit 1;
+--------+---------+--------+------+
| PNR    | Name    | SeatNo | Age  |
+--------+---------+--------+------+
| PNR012 | Ramya R | F01-13 |   45 |
+--------+---------+--------+------+
1 row in set (0.015 sec)
```

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

```
MariaDB [railway_system]> select * from passenger_331 where name like '%ULLAL%';
+--------+------------+--------+------+
| PNR    | Name       | SeatNo | Age  |
+--------+------------+--------+------+
| PNR005 | Hema Ullal | S01-10 |   27 |
| PNR005 | Hima Ullal | S01-11 |   28 |
| PNR005 | Asha Ullal | S01-12 |   21 |
| PNR005 | Ajit Ullal | S01-9  |   31 |
+--------+------------+--------+------+
4 rows in set (0.002 sec)
```