

## DBMS Lab-6

Name: **Vrushank G**

SRN: **PES1UG20CS516**

Section: **I**

### Lab 6 – Aggregate Function

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

```
MariaDB [pes1ug20cs516]> select (train_no,max(distance)/(max(to_station_no)-min(from_station_no)) as avg_distance from route_info where distance in  
-> (select distance from route_info where (to_station_no,from_station_no) in (select max(to_station_no),min(from_station_no) from route_info group by train_no)) group by train_no;
```

train_no	avg_distance
25260	160.3333
25261	160.3333
58450	168.0000
58451	167.6667
62620	90.2500
62621	90.5000

6 rows in set (0.001 sec)

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

```
MariaDB [pes1ug20cs516]> select (train_no,max(distance)/(max(to_station_no)-min(from_station_no)) as avg_distance_desc from route_info where distance in  
-> (select distance from route_info where (to_station_no,from_station_no) in (select max(to_station_no),min(from_station_no) from route_info group by train_no)) group by train_no order by avg_distance_desc d  
esc;
```

train_no	avg_distance_desc
58450	168.0000
58451	167.6667
25260	160.3333
25261	160.3333
62621	90.5000
62620	90.2500

6 rows in set (0.001 sec)

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

```
MariaDB [pes1ug20cs516]> select (train_no,max(distance) as distance_total_desc from route_info where distance in  
-> (select distance from route_info where (to_station_no,from_station_no) in (select max(to_station_no),min(from_station_no) from route_info group by train_no)) group by train_no order by distance_total_desc  
desc;
```

train_no	distance_total_desc
58450	504
58451	503
25260	481
25261	481
62621	362
62620	361

6 rows in set (0.001 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 [pes1ug20cs516]> select train_number, count(compartment_no) as max_compartment from compartment group by train_number order by max_compartment desc limit 1;select train_number, count(compartment_no) as m  
in_compartment from compartment group by train_number order by min_compartment asc limit 1;
```

train_number	max_compartment
62621	5

1 row in set (0.001 sec)

train_number	min_compartment
58451	2

1 row in set (0.001 sec)

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**Section: I**

5. Display the number of phone numbers corresponding to the user\_id(s) ADM\_001,USR\_006, USR\_010

```
MariaDB [peslug20cs516]> select user_id, count(phone_no) as Phone_Numbers from user_phone where user_id in ("ADM_001", "USR_006", "USR_010") group by user_id;
```

user_id	Phone_Numbers
ADM_001	2
USR_006	2
USR_010	2

```
3 rows in set (0.001 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 [peslug20cs516]> 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
Superfast	3.0000
Fast	2.3333
Mail	1.3333

```
3 rows in set (0.001 sec)
```

7. Retrieve all details of the oldest passenger.

```
MariaDB [peslug20cs516]> select * from ticket_passenger where age = (select max(age) from ticket_passenger);
```

seat_no	name	age	pnr
F01-13	Ramya R	45	PNR012

```
1 row in set (0.004 sec)
```

8. Count the number of passengers whose name consists of 'Ulla'. (Hint: Use the LIKE operator)

```
MariaDB [peslug20cs516]> select count(*) as num_passenger from ticket_passenger where name like "%Ulla%";
```

num_passenger
4

```
1 row in set (0.001 sec)
```