DATABASE MANAGEMENT SYSTEMS LAB

Week 6

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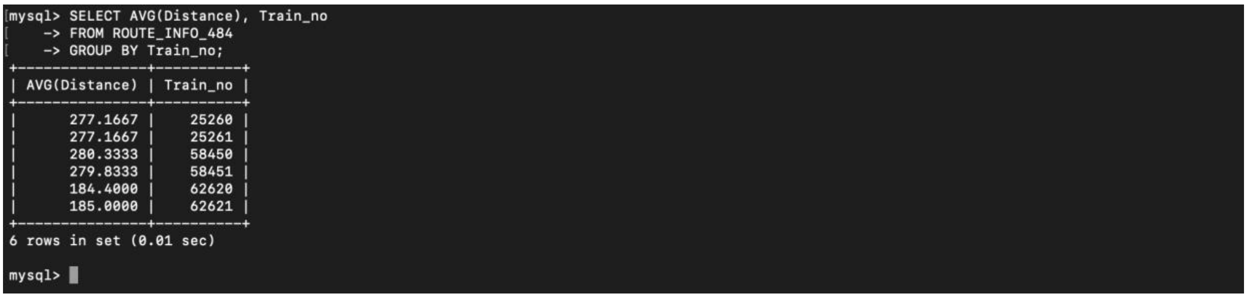
Railway Reservation System

Tasks:

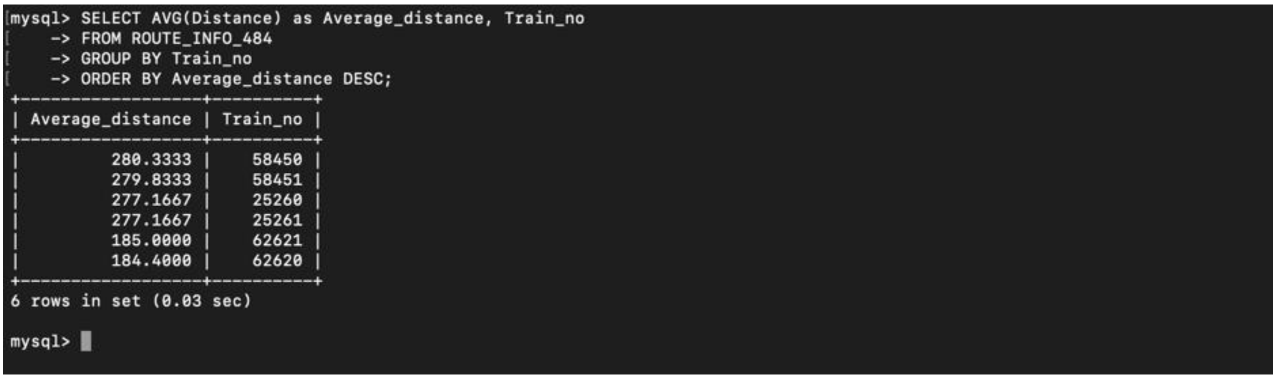
1. Find the average distance between subsequent stations for every train



```
[mysql> SELECT AVG(Distance), Train_no
[    -> FROM ROUTE_INFO_484
[    -> 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 (0.01 sec)

mysql> █
```

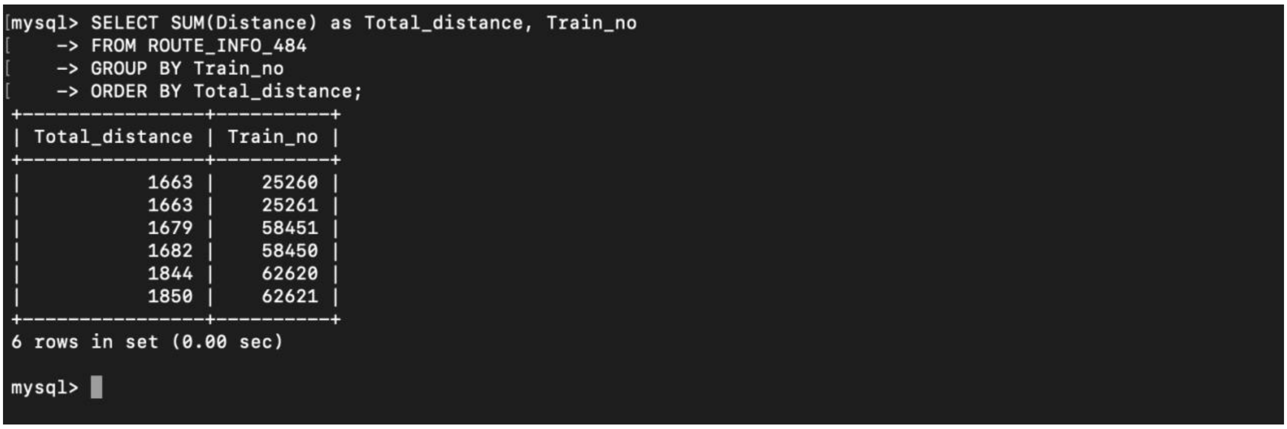
2. Find the average distance between subsequent stations for every train and display them in descending order of distance



```
[mysql> SELECT AVG(Distance) as Average_distance, Train_no
[    -> FROM ROUTE_INFO_484
[    -> GROUP BY Train_no
[    -> ORDER BY Average_distance DESC;
+------------------+----------+
| Average_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 (0.03 sec)

mysql> █
```

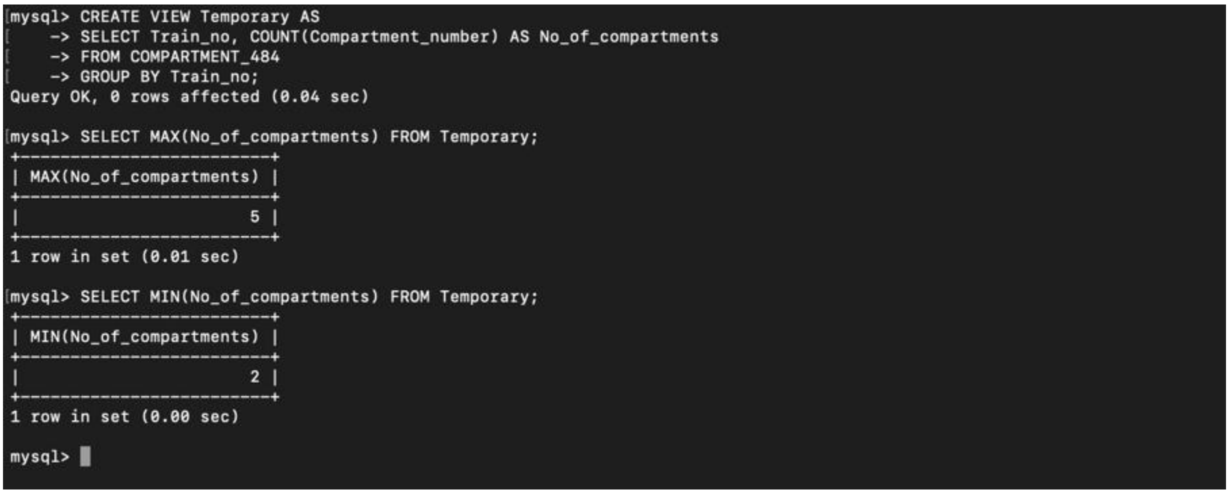
3. Display the list of train numbers and the total distance traveled by each in descending order of the distance traveled



```
[mysql> SELECT SUM(Distance) as Total_distance, Train_no
[    -> FROM ROUTE_INFO_484
[    -> GROUP BY Train_no
[    -> ORDER BY Total_distance;
+----------------+----------+
| Total_distance | Train_no |
+----------------+----------+
|           1663 |    25260 |
|           1663 |    25261 |
|           1679 |    58451 |
|           1682 |    58450 |
|           1844 |    62620 |
|           1850 |    62621 |
+----------------+----------+
6 rows in set (0.00 sec)

mysql> █
```

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)



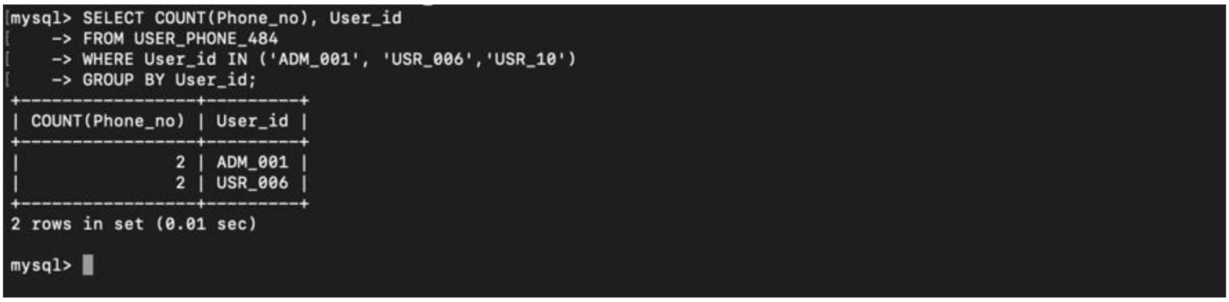
```
[mysql> CREATE VIEW Temporary AS
[    -> SELECT Train_no, COUNT(Compartment_number) AS No_of_compartments
[    -> FROM COMPARTMENT_484
[    -> GROUP BY Train_no;
Query OK, 0 rows affected (0.04 sec)

[mysql> SELECT MAX(No_of_compartments) FROM Temporary;
+-------------------------+
| MAX(No_of_compartments) |
+-------------------------+
|                       5 |
+-------------------------+
1 row in set (0.01 sec)

[mysql> SELECT MIN(No_of_compartments) FROM Temporary;
+-------------------------+
| MIN(No_of_compartments) |
+-------------------------+
|                       2 |
+-------------------------+
1 row in set (0.00 sec)

mysql> █
```

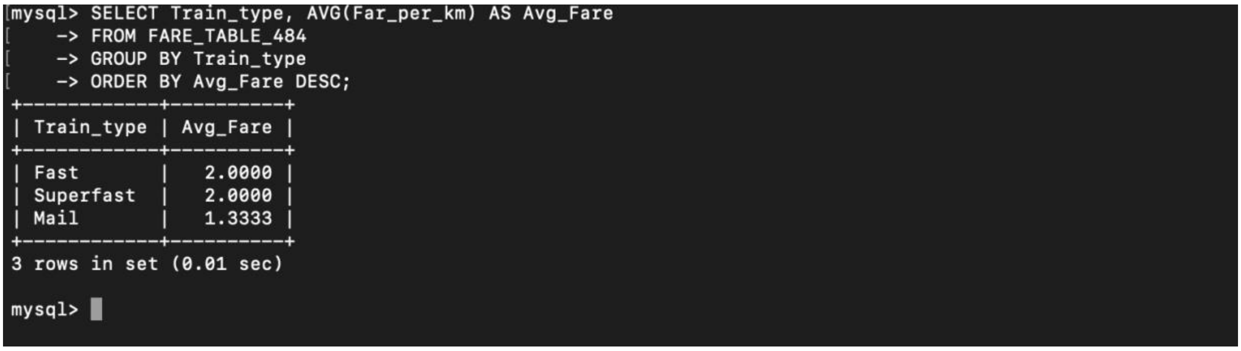
5. Display the number of phone numbers corresponding to the user_id(s) ADM_001, USR_006, USR_10



```
[mysql> SELECT COUNT(Phone_no), User_id
[    -> FROM USER_PHONE_484
[    -> WHERE User_id IN ('ADM_001', 'USR_006','USR_10')
[    -> GROUP BY User_id;
+-----------------+---------+
| COUNT(Phone_no) | User_id |
+-----------------+---------+
|               2 | ADM_001 |
|               2 | USR_006 |
+-----------------+---------+
2 rows in set (0.01 sec)

mysql> █
```

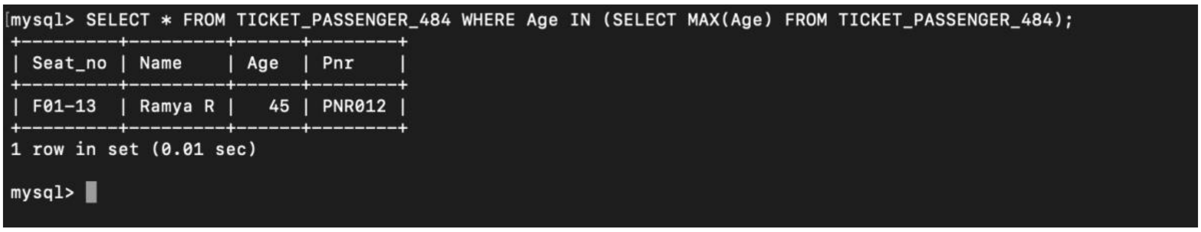
6. Find the average fare per km for each train type specified and display the train type and corresponding average fare per km as ‘Avg_Fare’ in decreasing order of Avg_Fare



```
[mysql> SELECT Train_type, AVG(Far_per_km) AS Avg_Fare
[    -> FROM FARE_TABLE_484
[    -> 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 (0.01 sec)

mysql> █
```

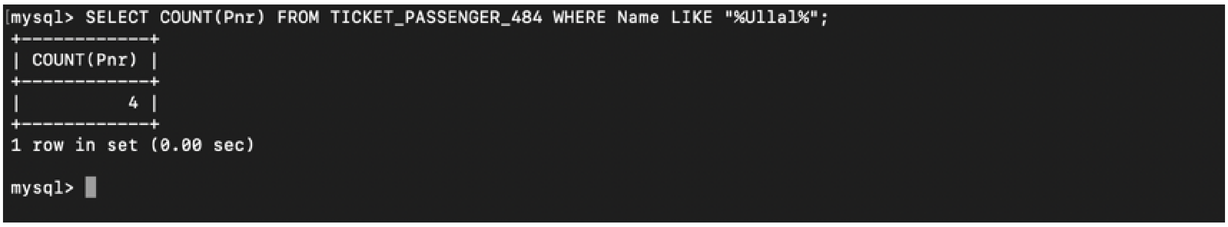
7. Retrieve all details of the oldest passenger.



```
[mysql> SELECT * FROM TICKET_PASSENGER_484 WHERE Age IN (SELECT MAX(Age) FROM TICKET_PASSENGER_484);
+---------+---------+------+--------+
| Seat_no | Name    | Age  | Pnr    |
+---------+---------+------+--------+
| F01-13  | Ramya R |   45 | PNR012 |
+---------+---------+------+--------+
1 row in set (0.01 sec)

mysql> 
```

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



```
[mysql> SELECT COUNT(Pnr) FROM TICKET_PASSENGER_484 WHERE Name LIKE "%Ullal%";
+------------+
| COUNT(Pnr) |
+------------+
|          4 |
+------------+
1 row in set (0.00 sec)

mysql> 
```