Lab 6 Database Management Systems

PES1UG20CS084

Aryansh Bhargavan

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

> `select avg(distance) from route_info group by train_no;`

```
MariaDB [lab4_pes1ug20cs084]> select avg(distance) from route_info group by train_no;
+---------------+
| avg(distance) |
+---------------+
|      277.1667 |
|      277.1667 |
|      280.3333 |
|      279.8333 |
|      184.4000 |
|      185.0000 |
+---------------+
6 rows in set (0.020 sec)
```

2) Find the average distance between subsequent stations for every train and display them in

descending order of distance

> `select avg(distance) from route_info group by train_no order by avg(distance) desc;`

```
MariaDB [lab4_pes1ug20cs084]> select avg(distance) from route_info group by train_no order by avg(distance) desc;
+---------------+
| avg(distance) |
+---------------+
|      280.3333 |
|      279.8333 |
|      277.1667 |
|      277.1667 |
|      185.0000 |
|      184.4000 |
+---------------+
6 rows in set (0.002 sec)
```

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

order of the distance traveled

> `select train_no, sum(distance) from route_info group by train_no order by sum(distance) desc;`

```
MariaDB [lab4_pes1ug20cs084]> select train_no, sum(distance) from route_info group by train_no order by sum(distance) de
sc;
+----------+---------------+
| train_no | sum(distance) |
+----------+---------------+
|    62621 |          1850 |
|    62620 |          1844 |
|    58450 |          1682 |
|    58451 |          1679 |
|    25261 |          1663 |
|    25260 |          1663 |
+----------+---------------+
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)

```
select train_number, count(compartment_no) from compartment group by
train_number having count(compartment_no)>=all(select
count(comp.compartment_no) from compartment as comp group by
comp.train_number);
```

```
MariaDB [lab4_pes1ug20cs084]> select train_number, count(compartment_no) from compartment group by train_number having c
ount(compartment_no)>=all(select count(comp.compartment_no) from compartment as comp group by comp.train_number);
+--------------+-----------------------+
| train_number | count(compartment_no) |
+--------------+-----------------------+
|        62621 |                     5 |
+--------------+-----------------------+
1 row in set (0.001 sec)
```

```
select train_number, count(compartment_no) from compartment group by
train_number having count(compartment_no)<=all(select
count(comp.compartment_no) from compartment as comp group by
comp.train_number);
```

```
MariaDB [lab4_pes1ug20cs084]> select train_number, count(compartment_no) from compartment group by train_number having c
ount(compartment_no)<=all(select count(comp.compartment_no) from compartment as comp group by comp.train_number);
+--------------+-----------------------+
| train_number | count(compartment_no) |
+--------------+-----------------------+
|        58451 |                     2 |
|        62620 |                     2 |
+--------------+-----------------------+
2 rows in set (0.001 sec)
```

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

```
select user_id, count(phone_no) from user_phone where user_id in
('ADM_001','USR_006','USR_010') group by user_id;
```

```
MariaDB [lab4_pes1ug20cs084]> select user_id, count(phone_no) from user_phone where user_id
in ('ADM_001','USR_006','USR_010') group by user_id;
+---------+-----------------+
| user_id | count(phone_no) |
+---------+-----------------+
| ADM_001 |               2 |
| USR_006 |               2 |
| USR_010 |               2 |
+---------+-----------------+
3 rows in set (0.009 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

```
select train_type, avg(fare_per_km) as Avg_fare from fare group by train_type
order by Avg_fare desc;
```

```
MariaDB [lab4_pes1ug20cs084]> select train_type, avg(fare_per_km) as Avg_fare from fare grou
p by train_type order by Avg_fare desc;
+------------+----------+
| train_type | Avg_fare |
+------------+----------+
| Superfast  |   2.0000 |
| Fast       |   2.0000 |
| Mail       |   1.3333 |
+------------+----------+
3 rows in set (0.001 sec)
```

7) Retrieve all details of the oldest passenger

```
select * from ticket_passenger as tp where age=(select max(age) from
ticket_passenger);
```

```
MariaDB [lab4_pes1ug20cs084]> select * from ticket_passenger as tp where age=(select max(age) from ticket_passenger);
+---------+---------+------+--------+
| seat_no | name    | age  | pnr    |
+---------+---------+------+--------+
| F01-13  | Ramya R |   45 | PNR012 |
+---------+---------+------+--------+
1 row in set (0.005 sec)
```

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

```
select count(*) from ticket_passenger where name like '%Ullal%';
```

```
MariaDB [lab4_pes1ug20cs084]> select count(*) from ticket_passenger where name like '%Ullal%';
+----------+
| count(*) |
+----------+
|        4 |
+----------+
1 row in set (0.001 sec)
```