RAILWAY DATABASE MANAGEMENT SYSTEM

❖ Show the tables

```
mysql> use railwaydatabase;
Database changed
mysql> select * from passenger;
+-----+------+--------+------------+-------------+-------------+
| pid | tid  | pname  | ticketfare | paymentmode | destination |
+-----+------+--------+------------+-------------+-------------+
| 701 | 1001 | sachin |       1200 | debitcard   | Mumbai      |
| 702 | 1002 | Rahul  |       1120 | Creditcard  | Delhi       |
| 703 | 1003 | Saurav |       1300 | UPI         | Pune        |
| 704 | 1004 | Anil   |       1280 | debitcard   | Delhi       |
| 705 | 1005 | Ramesh |       1400 | Netbanking  | Mumbai      |
| 706 | 1006 | John   |       1120 | Creditcard  | Pune        |
| 707 | 1007 | Sujit  |       1400 | UPI         | Mumbai      |
| 708 | 1008 | Vishal |       1280 | Netbanking  | Delhi       |
| 709 | 1009 | Yash   |       1170 | Creditcard  | Nashik      |
| 710 | 1010 | Rohit  |       1300 | UPI         | Nagpur      |
| 711 | 1011 | Rupesh |       1400 | Netbanking  | Nashik      |
| 712 | 1012 | Aman   |       1480 | UPI         | Kolkata     |
+-----+------+--------+------------+-------------+-------------+
```

12 rows in set (0.00 sec)

❖ Total Number of Passengers:

```
mysql>
mysql> select COUNT(*)  FROM passenger;
+----------+
| COUNT(*) |
+----------+
|       12 |
+----------+
1 row in set (0.00 sec)
```

❖ Highest Ticket Fare:

```
mysql>
mysql> select pid,tid, pname ,ticketfare  from passenger where
ticketfare = (select max(ticketfare) from passenger);
+-----+------+-------+------------+
| pid | tid  | pname | ticketfare |
+-----+------+-------+------------+
| 712 | 1012 | Aman  |       1480 |
+-----+------+-------+------------+
1 row in set (0.00 sec)

mysql>
```

❖ Lowest Ticket Fare

```
mysql> select pname ,ticketfare ,tid from passenger where ticketfare =
(select min(ticketfare) from passenger);
+-------+------------+------+
| pname | ticketfare | tid  |
+-------+------------+------+
| Rahul |       1120 | 1002 |
| John  |       1120 | 1006 |
+-------+------------+------+
2 rows in set (0.00 sec)

mysql>
```

❖ Count the total number of passenger who is a destination mumbai

```
mysql> select count(pname) from passenger where destination = 'Mumbai';
+--------------+
| count(pname) |
+--------------+
|            3 |
+--------------+
1 row in set (0.00 sec)
```

```
mysql>
```

❖ Average Ticket Fare:

```
mysql> select avg(ticketfare) from passenger;
+-----------------+
| avg(ticketfare) |
+-----------------+
|       1287.5000 |
+-----------------+
1 row in set (0.00 sec)

mysql>
```

❖ Total Revenue from Ticket Fares:
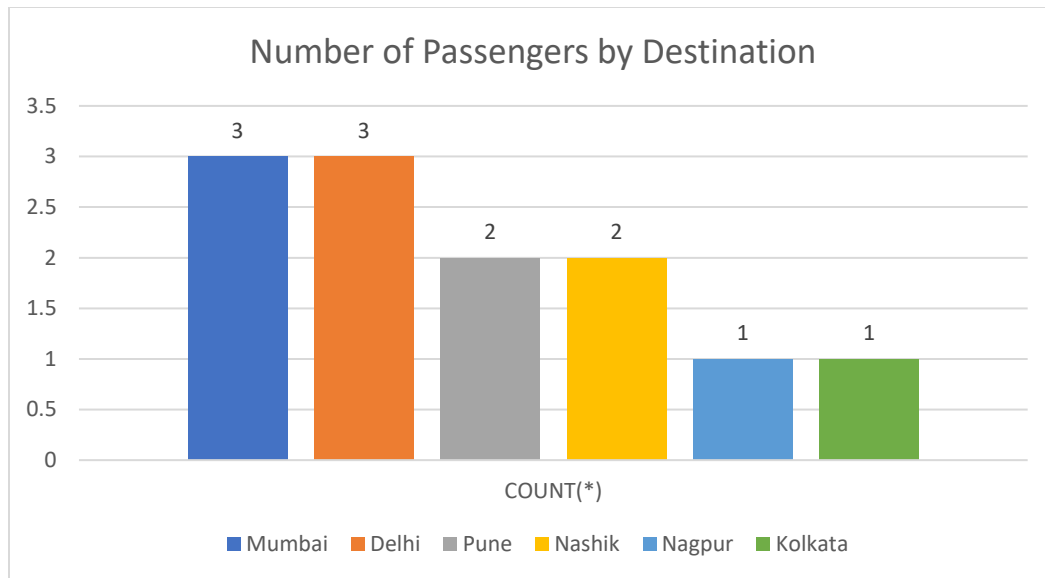
```
mysql> select SUM(ticketfare) FROM passenger;
+-----------------+
| SUM(ticketfare) |
+-----------------+
|           15450 |
+-----------------+
1 row in set (0.00 sec)

mysql>
```

❖ Passengers Grouped by Destination:

```
mysql> select destination, COUNT(*) FROM passenger GROUP BY destination;
+-------------+----------+
| destination | COUNT(*) |
+-------------+----------+
| Mumbai      |        3 |
| Delhi       |        3 |
| Pune        |        2 |
| Nashik      |        2 |
| Nagpur      |        1 |
| Kolkata     |        1 |
+-------------+----------+
6 rows in set (0.00 sec)
```

Number of Passengers by Destination

mysql>
❖ Total Revenue by Payment Mode:

```
mysql> select paymentmode, SUM(ticketfare) FROM passenger GROUP BY
paymentmode;
+-------------+-----------------+
| paymentmode | SUM(ticketfare) |
+-------------+-----------------+
| debitcard   |            2480 |
| Creditcard  |            3410 |
| UPI         |            5480 |
| Netbanking  |            4080 |
+-------------+-----------------+
4 rows in set (0.00 sec)

mysql>
```
❖ Passengers Grouped by Payment Mode:

```
mysql> SELECT paymentmode, COUNT(*) FROM passenger GROUP BY paymentmode;
+-------------+----------+
| paymentmode | COUNT(*) |
+-------------+----------+
| debitcard   |        2 |
| Creditcard  |        3 |
| UPI         |        4 |
| Netbanking  |        3 |
+-------------+----------+
```

4 rows in set (0.00 sec)

mysql>

❖ Passengers to Delhi:

mysql> select pname FROM passenger WHERE destination = 'Delhi';
```
+--------+
| pname  |
+--------+
| Rahul  |
| Anil   |
| Vishal |
+--------+
3 rows in set (0.00 sec)
```

❖ Show the reservation table

mysql> select * from reservation;
```
+------+-------+---------------+
| pid  | class | Dateofjourney |
+------+-------+---------------+
|  700 | AC1   | 2023-04-14    |
|  702 | SC    | 2023-05-04    |
|  701 | AC1   | 2023-04-12    |
|  703 | AC2   | 2023-04-14    |
|  705 | AC2   | 2023-04-15    |
|  706 | AC1   | 2023-04-17    |
|  707 | SC    | 2023-04-15    |
|  711 | AC2   | 2023-04-19    |
|  712 | AC1   | 2023-04-01    |
|  707 | SC    | 2023-04-09    |
|  709 | AC1   | 2023-04-02    |
|  710 | SC    | 2023-04-06    |
|  711 | AC2   | 2023-04-11    |
|  704 | SC    | 2023-04-09    |
+------+-------+---------------+
14 rows in set (0.00 sec)
```

```
mysql>
```

❖ Total Number of Reservations by Class:

```
mysql> SELECT class, COUNT(*) FROM reservation GROUP BY class;
+-------+----------+
| class | COUNT(*) |
+-------+----------+
| AC1   |        5 |
| SC    |        5 |
| AC2   |        4 |
+-------+----------+
3 rows in set (0.00 sec)

mysql>
```
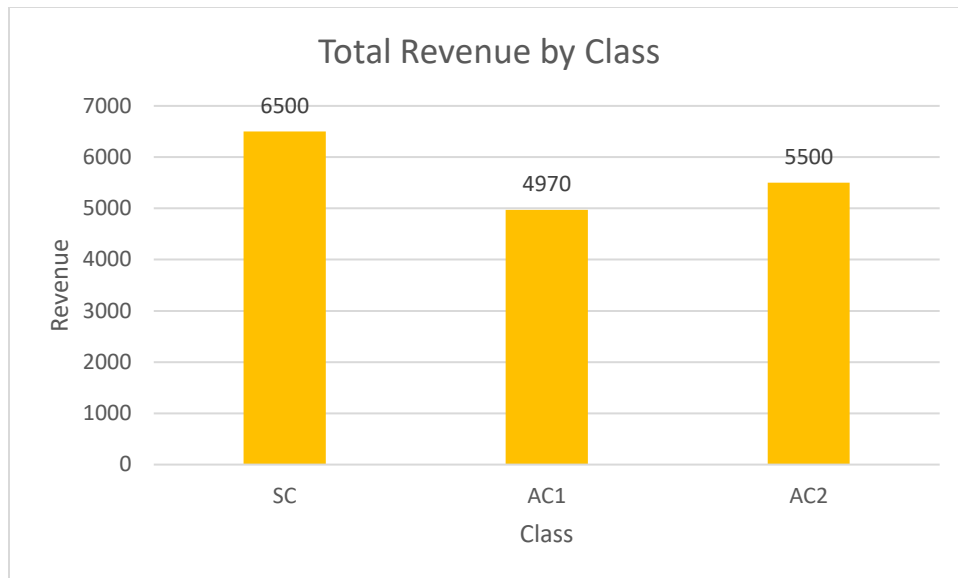
❖ Total Revenue by Class:

```
mysql> SELECT r.class, SUM(p.ticketfare) AS total_revenue
    -> FROM reservation r
    -> JOIN passenger p ON r.pid = p.pid
    -> GROUP BY r.class;
```

```
+-------+---------------+
| class | total_revenue |
+-------+---------------+
| SC    |          6500 |
| AC1   |          4970 |
| AC2   |          5500 |
+-------+---------------+
3 rows in set (0.00 sec)
```

Total Revenue by Class
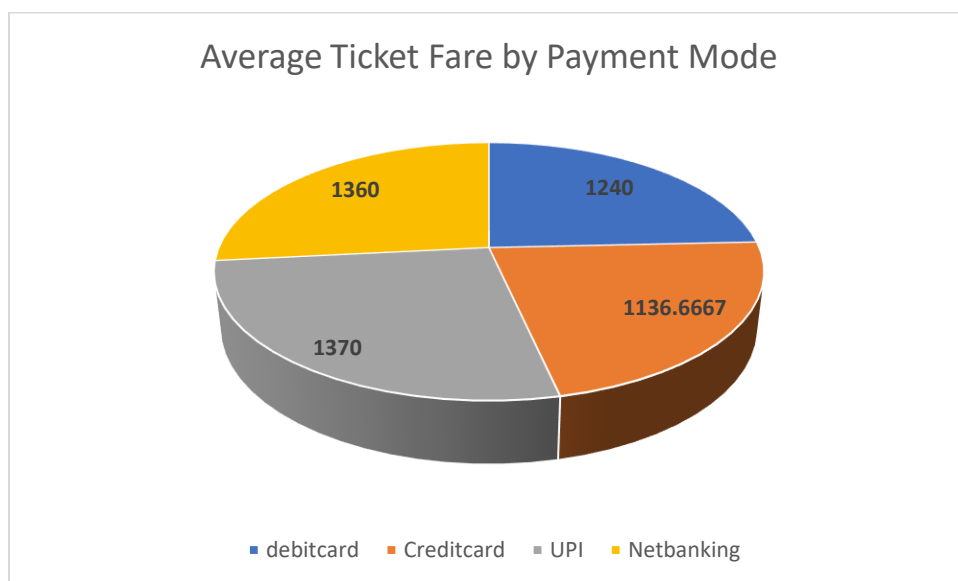
Average Ticket Fare by Payment Mode

```
mysql> SELECT paymentmode, AVG(ticketfare) AS average_ticketfare
    -> FROM passenger
    -> GROUP BY paymentmode;
+-------------+--------------------+
| paymentmode | average_ticketfare |
+-------------+--------------------+
| debitcard   |          1240.0000 |
| Creditcard  |          1136.6667 |
| UPI         |          1370.0000 |
| Netbanking  |          1360.0000 |
+-------------+--------------------+
```


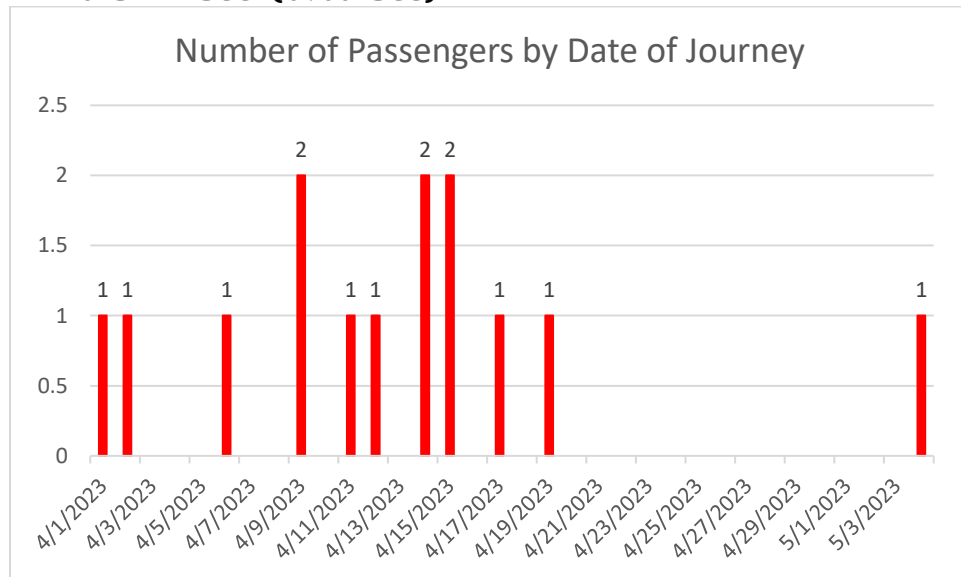Average Ticket Fare by Payment Mode

```
mysql>
```

❖ **Number of Passengers by Date of Journey**

```
mysql> SELECT Dateofjourney, COUNT(*) AS passenger_count
    -> FROM reservation
    -> GROUP BY Dateofjourney;
+---------------+-----------------+
| Dateofjourney | passenger_count |
+---------------+-----------------+
| 2023-04-14    |               2 |
| 2023-05-04    |               1 |
| 2023-04-12    |               1 |
| 2023-04-15    |               2 |
| 2023-04-17    |               1 |
| 2023-04-19    |               1 |
| 2023-04-01    |               1 |
| 2023-04-09    |               2 |
| 2023-04-02    |               1 |
| 2023-04-06    |               1 |
| 2023-04-11    |               1 |
+---------------+-----------------+
11 rows in set (0.00 sec)
```

Number of Passengers by Date of Journey

❖ **Details of Passengers Traveling in AC1:**

```
mysql> SELECT p.pname, r.Dateofjourney
    -> FROM passenger p
    -> JOIN reservation r ON p.pid = r.pid
    -> WHERE r.class = 'AC1';
+--------+---------------+
| pname  | Dateofjourney |
+--------+---------------+
| sachin | 2023-04-12    |
| John   | 2023-04-17    |
| Aman   | 2023-04-01    |
```

```
| Yash   | 2023-04-02    |
+--------+---------------+
4 rows in set (0.00 sec)

mysql>
```
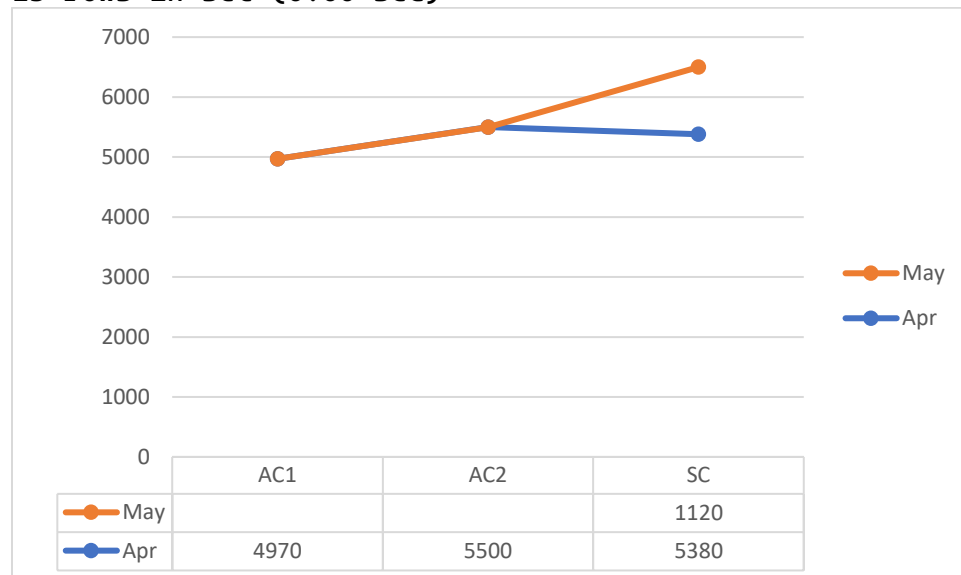
❖ Inner Join

```
mysql> SELECT p.pid, p.pname, p.ticketfare, r.class, r.Dateofjourney
    -> FROM passenger p
    -> INNER JOIN reservation r ON p.pid = r.pid;
+-----+--------+------------+-------+---------------+
| pid | pname  | ticketfare | class | Dateofjourney |
+-----+--------+------------+-------+---------------+
| 702 | Rahul  |       1120 | SC    | 2023-05-04    |
| 701 | sachin |       1200 | AC1   | 2023-04-12    |
| 703 | Saurav |       1300 | AC2   | 2023-04-14    |
| 705 | Ramesh |       1400 | AC2   | 2023-04-15    |
| 706 | John   |       1120 | AC1   | 2023-04-17    |
| 707 | Sujit  |       1400 | SC    | 2023-04-15    |
| 711 | Rupesh |       1400 | AC2   | 2023-04-19    |
| 712 | Aman   |       1480 | AC1   | 2023-04-01    |
| 707 | Sujit  |       1400 | SC    | 2023-04-09    |
| 709 | Yash   |       1170 | AC1   | 2023-04-02    |
| 710 | Rohit  |       1300 | SC    | 2023-04-06    |
| 711 | Rupesh |       1400 | AC2   | 2023-04-11    |
| 704 | Anil   |       1280 | SC    | 2023-04-09    |
+-----+--------+------------+-------+---------------+
13 rows in set (0.00 sec)
```


	AC1	AC2	SC
May			1120
Apr	4970	5500	5380

```
mysql>
```

❖ LEFT JOIN

```
mysql> SELECT p.pid, p.pname, p.ticketfare, r.class, r.Dateofjourney
    -> FROM passenger p
```

```
    -> LEFT JOIN reservation r ON p.pid = r.pid;
+-----+--------+------------+-------+--------------+
| pid | pname  | ticketfare | class | Dateofjourney |
+-----+--------+------------+-------+--------------+
| 701 | sachin |       1200 | AC1   | 2023-04-12   |
| 702 | Rahul  |       1120 | SC    | 2023-05-04   |
| 703 | Saurav |       1300 | AC2   | 2023-04-14   |
| 704 | Anil   |       1280 | SC    | 2023-04-09   |
| 705 | Ramesh |       1400 | AC2   | 2023-04-15   |
| 706 | John   |       1120 | AC1   | 2023-04-17   |
| 707 | Sujit  |       1400 | SC    | 2023-04-09   |
| 707 | Sujit  |       1400 | SC    | 2023-04-15   |
| 708 | Vishal |       1280 | NULL  | NULL         |
| 709 | Yash   |       1170 | AC1   | 2023-04-02   |
| 710 | Rohit  |       1300 | SC    | 2023-04-06   |
| 711 | Rupesh |       1400 | AC2   | 2023-04-11   |
| 711 | Rupesh |       1400 | AC2   | 2023-04-19   |
| 712 | Aman   |       1480 | AC1   | 2023-04-01   |
+-----+--------+------------+-------+--------------+
14 rows in set (0.00 sec)
mysql>
```

❖ RIGHT JOIN

```
mysql> SELECT p.pid, p.pname, p.ticketfare, r.class, r.Dateofjourney
    -> FROM passenger p
    -> RIGHT JOIN reservation r ON p.pid = r.pid;
+------+--------+------------+-------+--------------+
| pid  | pname  | ticketfare | class | Dateofjourney |
+------+--------+------------+-------+--------------+
| NULL | NULL   |       NULL | AC1   | 2023-04-14   |
|  702 | Rahul  |       1120 | SC    | 2023-05-04   |
|  701 | sachin |       1200 | AC1   | 2023-04-12   |
|  703 | Saurav |       1300 | AC2   | 2023-04-14   |
|  705 | Ramesh |       1400 | AC2   | 2023-04-15   |
|  706 | John   |       1120 | AC1   | 2023-04-17   |
|  707 | Sujit  |       1400 | SC    | 2023-04-15   |
|  711 | Rupesh |       1400 | AC2   | 2023-04-19   |
|  712 | Aman   |       1480 | AC1   | 2023-04-01   |
|  707 | Sujit  |       1400 | SC    | 2023-04-09   |
|  709 | Yash   |       1170 | AC1   | 2023-04-02   |
|  710 | Rohit  |       1300 | SC    | 2023-04-06   |
|  711 | Rupesh |       1400 | AC2   | 2023-04-11   |
|  704 | Anil   |       1280 | SC    | 2023-04-09   |
+------+--------+------------+-------+--------------+
14 rows in set (0.00 sec)
```