Database Management System

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Section	D

Lab 5

SQL – Joins: Inner, Outer; Sub queries: Correlated and Uncorrelated

Task 1 a:

```
+--------+----------+-----------+-----------+----------+-------------+
| PNR    | Train_No | Departure | Arrival   | Distance | fare_per_km |
+--------+----------+-----------+-----------+----------+-------------+
| PNR001 |    62621 | Bengaluru | Chennai   |      362 |           3 |
| PNR002 |    62620 | Chennai   | Bengaluru |      361 |           3 |
| PNR003 |    25261 | Chennai   | Mangaluru |      481 |           1 |
| PNR004 |    25260 | Mangaluru | Chennai   |      481 |           1 |
| PNR005 |    58451 | Bengaluru | Mangaluru |      503 |           1 |
| PNR006 |    58450 | Mangaluru | Bengaluru |      504 |           2 |
| PNR007 |    62621 | Bangarpet | Chennai   |      291 |           2 |
| PNR008 |    62620 | Chennai   | Bangarpet |      290 |           3 |
| PNR010 |    25260 | Mangaluru | Kannur    |      131 |           1 |
| PNR012 |    58451 | Subramanya| Mangaluru |      194 |           3 |
| PNR014 |    25260 | Kannur    | Palakkad  |      220 |           1 |
| PNR015 |    25260 | Palakkad  | Chennai   |      130 |           1 |
+--------+----------+-----------+-----------+----------+-------------+
12 rows in set (0.040 sec)
```

Task 1 b:

```
+----------+-----------+
| PNR      | numbers   |
+----------+-----------+
| PNR001   |         2 |
| PNR002   |         2 |
| PNR003   |         2 |
| PNR004   |         2 |
| PNR005   |         4 |
| PNR006   |         1 |
| PNR007   |         1 |
| PNR008   |         1 |
| PNR010   |         2 |
| PNR011   |         1 |
| PNR012   |         1 |
| PNR014   |         1 |
| PNR015   |         1 |
+----------+-----------+
13 rows in set (0.004 sec)
```

Task 1 c:

transaction_no	bank	card_no	price	pnr
146445	HDFC	1.23433E+15	1008.00	PNR006
243535	UNION BANK	2.43647E+15	582.00	PNR012
342344	IOB	5.62357E+15	2172.00	PNR001
354364	CANARA BANK	5.76879E+15	220.00	PNR014
531343	SBI	8.95327E+15	962.00	PNR004
576768	ICICI	7.56356E+15	582.00	PNR007
676756	CANARA BANK	7.36756E+15	2166.00	PNR002
746745	KOTAK	2.54564E+15	870.00	PNR008
758900	UNION BANK	2.43266E+15	130.00	PNR015
867546	UNION BANK	4.65769E+15	262.00	PNR010
867547	SBI	7.46635E+15	NULL	PNR011
978098	INDIAN BANK	9.88733E+15	2012.00	PNR005
978776	UNION BANK	1I54978597435874	962.00	PNR003

13 rows in set (0.003 sec)

Task 2:

```
    -> route_info.To_Station_No,route_info.To_Station_Name,route_info.Distance
    -> FROM train NATURAL JOIN route_info;
+----------+-----------------+----------------+------------------+--------------+----------------+----------+
| Train_No | Train_Name      | From_Station_No | From_Station_name | To_Station_No | To_Station_Name | Distance |
+----------+-----------------+----------------+------------------+--------------+----------------+----------+
|    25260 | Chennai Mail    |              1 | Mangaluru        |            2 | Kannur         |      131 |
|    25260 | Chennai Mail    |              1 | Mangaluru        |            3 | Palakkad       |      351 |
|    25260 | Chennai Mail    |              1 | Mangaluru        |            4 | Chennai        |      481 |
|    25260 | Chennai Mail    |              2 | Kannur           |            3 | Palakkad       |      220 |
|    25260 | Chennai Mail    |              2 | Kannur           |            4 | Chennai        |      350 |
|    25260 | Chennai Mail    |              4 | Palakkad         |            4 | Chennai        |      130 |
|    25261 | Managaluru Mail |              1 | Chennai          |            2 | Palakkad       |      130 |
|    25261 | Managaluru Mail |              1 | Chennai          |            3 | Kannur         |      350 |
|    25261 | Managaluru Mail |              1 | Chennai          |            4 | Mangaluru      |      481 |
|    25261 | Managaluru Mail |              2 | Palakkad         |            3 | Kannur         |      220 |
|    25261 | Managaluru Mail |              2 | Palakkad         |            4 | Mangaluru      |      351 |
|    25261 | Managaluru Mail |              3 | Kannur           |            4 | Mangaluru      |      131 |
|    58450 | MAN-BEN Express |              1 | Mangaluru        |            2 | Subramanya     |      195 |
|    58450 | MAN-BEN Express |              1 | Mangaluru        |            3 | Mysore         |      365 |
|    58450 | MAN-BEN Express |              1 | Mangaluru        |            4 | Bengaluru      |      504 |
|    58450 | MAN-BEN Express |              2 | Subramanya       |            3 | Mysore         |      170 |
|    58450 | MAN-BEN Express |              2 | Subramanya       |            4 | Bengaluru      |      309 |
|    58450 | MAN-BEN Express |              3 | Mysore           |            4 | Bengaluru      |      139 |
|    58451 | BEN-MAN Express |              1 | Bengaluru        |            2 | Mysore         |      139 |
|    58451 | BEN-MAN Express |              1 | Bengaluru        |            3 | Subramanya     |      309 |
|    58451 | BEN-MAN Express |              1 | Bengaluru        |            4 | Mangaluru      |      503 |
|    58451 | BEN-MAN Express |              2 | Mysore           |            3 | Subramanya     |      170 |
|    58451 | BEN-MAN Express |              2 | Mysore           |            4 | Mangaluru      |      364 |
|    58451 | BEN-MAN Express |              3 | Subramanya       |            4 | Mangaluru      |      194 |
|    62620 | CHE-BEN Shatabdi |             1 | Chennai          |            2 | Sholingur      |       90 |
|    62620 | CHE-BEN Shatabdi |             1 | Chennai          |            3 | Katpadi        |      129 |
|    62620 | CHE-BEN Shatabdi |             1 | Chennai          |            4 | Bangarpet      |      290 |
|    62620 | CHE-BEN Shatabdi |             1 | Chennai          |            5 | Bengaluru      |      361 |
|    62620 | CHE-BEN Shatabdi |             2 | Sholingur        |            3 | Katpadi        |       39 |
|    62620 | CHE-BEN Shatabdi |             2 | Sholingur        |            4 | Bangarpet      |      200 |
|    62620 | CHE-BEN Shatabdi |             2 | Sholingur        |            5 | Chennai        |      271 |
|    62620 | CHE-BEN Shatabdi |             3 | Katpadi          |            4 | Bangarpet      |      161 |
|    62620 | CHE-BEN Shatabdi |             3 | Katpadi          |            5 | Chennai        |      232 |
|    62620 | CHE-BEN Shatabdi |             4 | Bangarpet        |            5 | Bengaluru      |       71 |
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|    62620 | CHE-BEN Shatabdi |             2 | Sholingur        |            5 | Chennai        |      271 |
|    62620 | CHE-BEN Shatabdi |             3 | Katpadi          |            4 | Bangarpet      |      161 |
|    62620 | CHE-BEN Shatabdi |             3 | Katpadi          |            5 | Chennai        |      232 |
|    62620 | CHE-BEN Shatabdi |             4 | Bangarpet        |            5 | Bengaluru      |       71 |
|    62621 | BEN-CHE Shatabdi |             1 | Bengaluru        |            2 | Bangarpet      |       71 |
|    62621 | BEN-CHE Shatabdi |             1 | Bengaluru        |            3 | Katpadi        |      232 |
|    62621 | BEN-CHE Shatabdi |             1 | Bengaluru        |            4 | Sholigur       |      272 |
|    62621 | BEN-CHE Shatabdi |             1 | Bengaluru        |            5 | Chennai        |      362 |
|    62621 | BEN-CHE Shatabdi |             2 | Bangarpet        |            3 | Katpadi        |      161 |
|    62621 | BEN-CHE Shatabdi |             2 | Bangarpet        |            4 | Sholigur       |      201 |
|    62621 | BEN-CHE Shatabdi |             2 | Bangarpet        |            5 | Chennai        |      291 |
|    62621 | BEN-CHE Shatabdi |             3 | Katpadi          |            4 | Sholigur       |       40 |
|    62621 | BEN-CHE Shatabdi |             3 | Katpadi          |            5 | Chennai        |      130 |
|    62621 | BEN-CHE Shatabdi |             4 | Sholingur        |            5 | Chennai        |       90 |
+----------+-----------------+----------------+------------------+--------------+----------------+----------+
44 rows in set (0.004 sec)
```

Task 3:

```
+----------+------------------+
| Train_No | Train_Name       |
+----------+------------------+
|    62621 | BEN-CHE Shatabdi |
+----------+------------------+
1 row in set (0.001 sec)
```

Task 4:

```
+-----------+-----------+
| firstName | lastName  |
+-----------+-----------+
| Muhammed  | Ali       |
| Arjun     | Allu      |
| Narendra  | Modi      |
| Manmohan  | Singh     |
| Droupadi  | Murmu     |
| Narendra  | Modi      |
| Droupadi  | Murmu     |
| Muhammed  | Ali       |
| Manmohan  | Singh     |
+-----------+-----------+
9 rows in set (0.001 sec)
```

Task 5:

```
+-----------+-----------+------------+----------+
| firstname | lastname  | dob        | pnr      |
+-----------+-----------+------------+----------+
| Narendra  | Modi      | 1989-04-14 | PNR001   |
| Narendra  | Modi      | 1989-04-14 | PNR002   |
| Droupadi  | Murmu     | 1990-04-14 | PNR007   |
| Droupadi  | Murmu     | 1990-04-14 | PNR008   |
| Manmohan  | Singh     | 1991-04-08 | PNR003   |
| Manmohan  | Singh     | 1991-04-08 | PNR004   |
| Muhammed  | Ali       | 2000-10-09 | PNR005   |
| Muhammed  | Ali       | 2000-10-09 | PNR006   |
| Smriti    | Irani     | 1999-12-16 | PNR010   |
| Ajit      | Sethi     | 1966-04-14 | PNR011   |
| Arjun     | Allu      | 1967-04-08 | PNR012   |
| Samanta   | Prabhu    | 1968-04-14 | PNR014   |
| Rahul     | Gandhi    | 1970-04-08 | PNR015   |
+-----------+-----------+------------+----------+
13 rows in set (0.001 sec)
```

Task 6:

```
+-----------------+-----------------+
| firstname       | lastname        |
+-----------------+-----------------+
| Narendra        | Modi            |
| Narendra        | Modi            |
| Droupadi        | Murmu           |
| Droupadi        | Murmu           |
| Manmohan        | Singh           |
| Manmohan        | Singh           |
| Muhammed        | Ali             |
| Muhammed        | Ali             |
| Smriti          | Irani           |
| Ajit            | Sethi           |
| Arjun           | Allu            |
| Samanta         | Prabhu          |
| Rahul           | Gandhi          |
+-----------------+-----------------+
13 rows in set (0.001 sec)
```

Task 7:

pnr	train_No	travel_Date	firstname	lastname
PNR001	62621	2022-08-07	Narendra	Modi
PNR002	62620	2022-08-14	Narendra	Modi
PNR007	62621	2022-08-07	Droupadi	Murmu
PNR008	62620	2022-08-02	Droupadi	Murmu
PNR003	25261	2022-08-01	Manmohan	Singh
PNR004	25260	2022-08-15	Manmohan	Singh
NULL	NULL	NULL	Ajit	Ullal
PNR005	58451	2022-08-03	Muhammed	Ali
PNR006	58450	2033-08-04	Muhammed	Ali
NULL	NULL	NULL	Sai Deepak	Reddy
NULL	NULL	NULL	Rudra	Agarwal
NULL	NULL	NULL	Rahul	Khanna
NULL	NULL	NULL	Nirmala	Seturaman
PNR010	25260	2022-08-19	Smriti	Irani
PNR011	62621	2022-08-22	Ajit	Sethi
PNR012	58451	2022-08-11	Arjun	Allu
PNR014	25260	2022-08-17	Samanta	Prabhu
NULL	NULL	NULL	Kiran	Bedi
PNR015	25260	2022-08-05	Rahul	Gandhi
NULL	NULL	NULL	Rashkit	Shetty
NULL	NULL	NULL	Rishi	Sunak
NULL	NULL	NULL	Vedavalli	Srinath
NULL	NULL	NULL	Subbu	Saravana
NULL	NULL	NULL	Sheela	Dixit
NULL	NULL	NULL	Margaret	Alva
NULL	NULL	NULL	Arun	Kumar
NULL	NULL	NULL	Anshu	Bhardwaj
NULL	NULL	NULL	Suma	Sampat
NULL	NULL	NULL	Srihari	Udupa
NULL	NULL	NULL	Satish	Kotian
NULL	NULL	NULL	Shradha	Nayar
NULL	NULL	NULL	Manisha	Solanki
NULL	NULL	NULL	Bharti	Devgan
NULL	NULL	NULL	Roopa	Ram
NULL	NULL	NULL	Pallavi	Ram
NULL	NULL	NULL	Ravi	Naik
NULL	NULL	NULL	Virat	Murthy

Task 8:

```
+----------------+-----------+-----------------------+
| passenger_id   | train_No  | train_name            |
+----------------+-----------+-----------------------+
| ADM_003        |     25260 | Chennai Mail          |
| USR_007        |     25260 | Chennai Mail          |
| USR_010        |     25260 | Chennai Mail          |
| USR_012        |     25260 | Chennai Mail          |
| ADM_003        |     25261 | Managaluru Mail       |
| USR_002        |     58450 | MAN-BEN Express       |
| USR_002        |     58451 | BEN-MAN Express       |
| USR_009        |     58451 | BEN-MAN Express       |
| ADM_001        |     62620 | CHE-BEN Shatabdi      |
| ADM_002        |     62620 | CHE-BEN Shatabdi      |
| ADM_001        |     62621 | BEN-CHE Shatabdi      |
| ADM_002        |     62621 | BEN-CHE Shatabdi      |
| USR_008        |     62621 | BEN-CHE Shatabdi      |
+----------------+-----------+-----------------------+
13 rows in set (0.001 sec)
```

Task 9:

```
+----------+---------------------+
| train_no | train_name          |
+----------+---------------------+
|    25260 | Chennai Mail        |
|    25260 | Chennai Mail        |
|    25260 | Chennai Mail        |
|    25260 | Chennai Mail        |
|    25261 | Managaluru Mail     |
|    58450 | MAN-BEN Express     |
|    58451 | BEN-MAN Express     |
|    58451 | BEN-MAN Express     |
|    62620 | CHE-BEN Shatabdi    |
|    62620 | CHE-BEN Shatabdi    |
|    62621 | BEN-CHE Shatabdi    |
|    62621 | BEN-CHE Shatabdi    |
|    62621 | BEN-CHE Shatabdi    |
+----------+---------------------+
13 rows in set (0.001 sec)
```

Task 10:

```
+------------------+
| passenger_id     |
+------------------+
| ADM_001          |
| ADM_002          |
| ADM_003          |
| USR_002          |
+------------------+
4 rows in set (0.005 sec)
```