DBMS Lab 5

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.sql file

```sql
create view cp as select
ticket.PNR,ticket.Train_no,ticket.Departure,ticket.Arrival,route_info.distance,fare
_table.fare_per_km from ticket,route_info,fare as fare_table where
(ticket.train_no=route_info.train_no and ticket.Departure =
route_info.From_station_name and  ticket.Arrival = route_info.To_station_name and
fare_table.Train_type = ticket.Train_type and  fare_table.compartment_type =
ticket.compartment_type);

create view pv as select pnr, count(pnr) as number from ticket_passenger group by
pnr;

update payment_info as p INNER JOIN cp on p.pnr = cp.pnr INNER JOIN pv on cp.pnr =
pv.pnr set p.price = cp.distance * cp.fare_per_km * pv.number;
-- Natural join
select source, destination, distance from train natural join route_info where
source=from_station_name and destination=to_station_name;

-- Inner join
select firstname, lastname from train_user inner join (select * from ticket natural
join payment_info where ticket.pnr=payment_info.pnr) as i where
user_id=i.passenger_id and i.price > 500;

select train_no from train inner join compartment where source="Bengaluru" and
destination="Chennai" and train_no=train_number and compartment.availability>10;

-- Left outer join

select firstname, lastname, dob, pnr from train_user left outer join ticket on
user_id=passenger_id;

select firstname, lastname, dob, pnr from train_user left outer join ticket on
user_id=passenger_id where pnr is null;

-- Right outer join

select pnr, train_no, travel_date, firstname, lastname from ticket right outer join
train_user on user_id=passenger_id;

select distinct user_id, train_no, train_name from user_train right outer join
train on train_id=train_no;
```

```
-- Nested queries
select train_no, train_name from train where destination!="Mangaluru" and train_no
not in ( select route_info.train_no from route_info left outer join ticket on
route_info.train_no=ticket.train_no where distance < 100 and departure and
departure_time=TIME('8:30:00') union select route_info.train_no from route_info
right outer join ticket on route_info.train_no=ticket.train_no where distance < 100
and departure and departure_time=TIME('8:30:00') );

select passenger_id from ticket join payment_info on ticket.pnr=payment_info.pnr
where payment_info.price>(select AVG(payment_info.price) from payment_info);
```

Output Relations

```
[MariaDB [pes1ug20cs645_railway]> source /Applications/XAMPP/xamppfiles/bin/PES1UG20CS645_lab05.sql
Query OK, 0 rows affected (0.041 sec)

Query OK, 0 rows affected (0.019 sec)

Query OK, 12 rows affected (0.023 sec)
Rows matched: 12  Changed: 12  Warnings: 0

+-----------+-------------+----------+
| source    | destination | distance |
+-----------+-------------+----------+
| Mangaluru | Chennai     |      481 |
| Chennai   | Mangaluru   |      481 |
| Mangaluru | Bengaluru   |      504 |
| Bengaluru | Mangaluru   |      503 |
| Chennai   | Bengaluru   |      361 |
| Bengaluru | Chennai     |      362 |
+-----------+-------------+----------+
6 rows in set (0.002 sec)

+-----------+----------+
| 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)
```
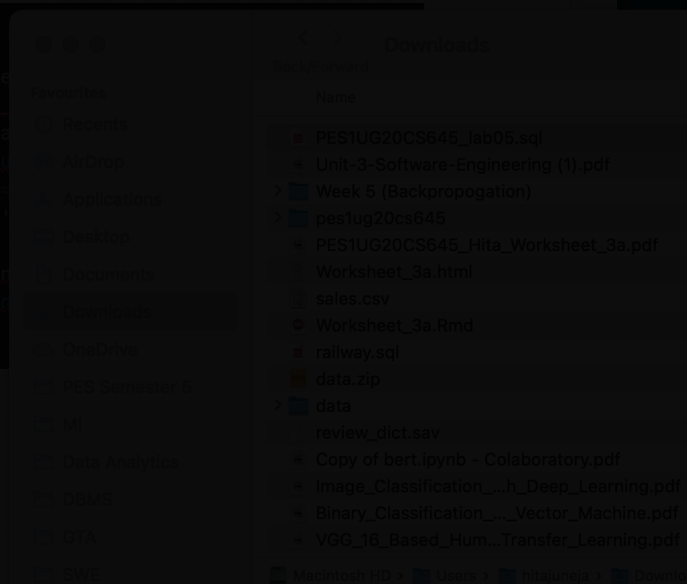
```
+----------+
| train_no |
+----------+
|    62621 |
+----------+
1 row in set (0.001 sec)

+------------+-----------+------------+--------+
| 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 |
| Ajit       | Ullal     | 1971-01-01 | NULL   |
| Muhammed   | Ali       | 2000-10-09 | PNR005 |
| Muhammed   | Ali       | 2000-10-09 | PNR006 |
| Sai Deepak | Reddy     | 1996-12-12 | NULL   |
| Rudra      | Agarwal   | 1996-12-13 | NULL   |
| Rahul      | Khanna    | 1997-12-14 | NULL   |
| Nirmala    | Seturaman | 1998-12-15 | NULL   |
| Smriti     | Irani     | 1999-12-16 | PNR010 |
| Ajit       | Sethi     | 1966-04-14 | PNR011 |
| Arjun      | Allu      | 1967-04-08 | PNR012 |
| Samanta    | Prabhu    | 1968-04-14 | PNR014 |
| Kiran      | Bedi      | 1969-04-14 | NULL   |
| Rahul      | Gandhi    | 1970-04-08 | PNR015 |
| Rashkit    | Shetty    | 1971-04-14 | NULL   |
| Rishi      | Sunak     | 1972-04-14 | NULL   |
| Vedavalli  | Srinath   | 1973-04-14 | NULL   |
| Subbu      | Saravana  | 1974-04-14 | NULL   |
| Sheela     | Dixit     | 1975-04-08 | NULL   |
| Margaret   | Alva      | 1976-04-14 | NULL   |
```

Margaret	Alva	1976-04-14	NULL
Arun	Kumar	1977-04-14	NULL
Anshu	Bhardwaj	1978-04-14	NULL
Suma	Sampat	1979-04-08	NULL
Srihari	Udupa	1980-04-14	NULL
Satish	Kotian	1981-04-14	NULL
Shradha	Nayar	1982-04-08	NULL
Manisha	Solanki	1983-04-08	NULL
Bharti	Devgan	1984-04-14	NULL
Roopa	Ram	1985-04-14	NULL
Pallavi	Ram	1986-04-08	NULL
Ravi	Naik	1987-04-14	NULL
Virat	Murthy	1988-04-14	NULL
+-------------+-----------+------------+------+

37 rows in set (0.001 sec)

+-------------+-----------+------------+------+
| firstname | lastname | dob | pnr |
+-------------+-----------+------------+------+
Ajit	Ullal	1971-01-01	NULL
Sai Deepak	Reddy	1996-12-12	NULL
Rudra	Agarwal	1996-12-13	NULL
Rahul	Khanna	1997-12-14	NULL
Nirmala	Seturaman	1998-12-15	NULL
Kiran	Bedi	1969-04-14	NULL
Rashkit	Shetty	1971-04-14	NULL
Rishi	Sunak	1972-04-14	NULL
Vedavalli	Srinath	1973-04-14	NULL
Subbu	Saravana	1974-04-14	NULL
Sheela	Dixit	1975-04-08	NULL
Margaret	Alva	1976-04-14	NULL
Arun	Kumar	1977-04-14	NULL
Anshu	Bhardwaj	1978-04-14	NULL
Suma	Sampat	1979-04-08	NULL
Srihari	Udupa	1980-04-14	NULL
Satish	Kotian	1981-04-14	NULL
Shradha	Nayar	1982-04-08	NULL
Manisha	Solanki	1983-04-08	NULL
Bharti	Devgan	1984-04-14	NULL
Roopa	Ram	1985-04-14	NULL
Pallavi	Ram	1986-04-08	NULL

Pallavi	Ram	1986-04-08	NULL
Ravi	Naik	1987-04-14	NULL
Virat	Murthy	1988-04-14	NULL

24 rows in set (0.000 sec)

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

37 rows in set (0.000 sec)

+----------+-----------+------------------+
| user_id | train_no | train_name |
+----------+-----------+------------------+
ADM_003	25260	Chennai Mail
USR_007	25260	Chennai Mail
ADM_001	25261	Managaluru Mail
ADM_002	25261	Managaluru Mail
ADM_003	25261	Managaluru Mail
USR_004	25261	Managaluru Mail
USR_005	25261	Managaluru Mail
USR_009	25261	Managaluru Mail
USR_015	25261	Managaluru Mail
ADM_001	58450	MAN-BEN Express
ADM_002	58450	MAN-BEN Express
ADM_003	58450	MAN-BEN Express
USR_003	58450	MAN-BEN Express
USR_004	58450	MAN-BEN Express
USR_006	58450	MAN-BEN Express
USR_010	58450	MAN-BEN Express
USR_012	58450	MAN-BEN Express
USR_014	58450	MAN-BEN Express
USR_018	58450	MAN-BEN Express
USR_019	58450	MAN-BEN Express
USR_020	58450	MAN-BEN Express
USR_021	58450	MAN-BEN Express
USR_022	58450	MAN-BEN Express
USR_023	58450	MAN-BEN Express
USR_026	58450	MAN-BEN Express
ADM_001	58451	BEN-MAN Express
ADM_002	58451	BEN-MAN Express
ADM_003	58451	BEN-MAN Express
USR_001	58451	BEN-MAN Express
USR_002	58451	BEN-MAN Express

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| USR_003 |   58451 | BEN-MAN Express |
| USR_005 |   58451 | BEN-MAN Express |
| USR_006 |   58451 | BEN-MAN Express |
| USR_007 |   58451 | BEN-MAN Express |
| USR_008 |   58451 | BEN-MAN Express |
| USR_009 |   58451 | BEN-MAN Express |
| USR_010 |   58451 | BEN-MAN Express |
| USR_011 |   58451 | BEN-MAN Express |
| USR_012 |   58451 | BEN-MAN Express |
| USR_013 |   58451 | BEN-MAN Express |
| USR_014 |   58451 | BEN-MAN Express |
| USR_015 |   58451 | BEN-MAN Express |
| USR_016 |   58451 | BEN-MAN Express |
| USR_017 |   58451 | BEN-MAN Express |
| USR_018 |   58451 | BEN-MAN Express |
| USR_019 |   58451 | BEN-MAN Express |
| USR_020 |   58451 | BEN-MAN Express |
| USR_022 |   58451 | BEN-MAN Express |
| USR_024 |   58451 | BEN-MAN Express |
| USR_026 |   58451 | BEN-MAN Express |
| USR_027 |   58451 | BEN-MAN Express |
| USR_028 |   58451 | BEN-MAN Express |
| USR_030 |   58451 | BEN-MAN Express |
| ADM_001 |   62620 | CHE-BEN Shatabdi |
| ADM_002 |   62620 | CHE-BEN Shatabdi |
| ADM_003 |   62620 | CHE-BEN Shatabdi |
| USR_003 |   62620 | CHE-BEN Shatabdi |
| USR_004 |   62620 | CHE-BEN Shatabdi |
| USR_005 |   62620 | CHE-BEN Shatabdi |
| USR_009 |   62620 | CHE-BEN Shatabdi |
| USR_017 |   62620 | CHE-BEN Shatabdi |
| USR_025 |   62620 | CHE-BEN Shatabdi |
| ADM_001 |   62621 | BEN-CHE Shatabdi |
| ADM_002 |   62621 | BEN-CHE Shatabdi |
| ADM_003 |   62621 | BEN-CHE Shatabdi |
| USR_003 |   62621 | BEN-CHE Shatabdi |
| USR_005 |   62621 | BEN-CHE Shatabdi |
| USR_006 |   62621 | BEN-CHE Shatabdi |
| USR_007 |   62621 | BEN-CHE Shatabdi |
| USR_008 |   62621 | BEN-CHE Shatabdi |
| USR_011 |   62621 | BEN-CHE Shatabdi |
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| USR_011 |    62621 | BEN-CHE Shatabdi |
| USR_015 |    62621 | BEN-CHE Shatabdi |
| USR_016 |    62621 | BEN-CHE Shatabdi |
| USR_021 |    62621 | BEN-CHE Shatabdi |
| USR_023 |    62621 | BEN-CHE Shatabdi |
| USR_029 |    62621 | BEN-CHE Shatabdi |
+---------+----------+------------------+
76 rows in set (0.001 sec)

+----------+------------------+
| train_no | train_name       |
+----------+------------------+
|    25260 | Chennai Mail     |
|    58450 | MAN-BEN Express  |
|    62620 | CHE-BEN Shatabdi |
|    62621 | BEN-CHE Shatabdi |
+----------+------------------+
4 rows in set, 30 warnings (0.003 sec)

+--------------+
| passenger_id |
+--------------+
| USR_002      |
| ADM_001      |
| ADM_001      |
| USR_002      |
+--------------+
4 rows in set (0.001 sec)

MariaDB [pes1ug20cs645_railway]>
```