PROJECT

FLIGHTPASS

In this project, I will be tackling more than 20 challenging SQL questions , many of which are of high difficulty. The project involves working with data related to passengers, flights, and transactions. The three main tables are Transactions , Passenger Details, and Flight Details , with their descriptions provided below.

My name is Priyal Keswani, and through this project, I will be solving complex SQL queries using the data from these tables given below .

TABLES USED WITH COLUMN NAMES

1) transact -

TID , TMode , Amount , Tsuccess

2) pass_details -

PID , pName , Booking_date , Tr_ID,Age , F_No , F_rewards

3) flight_details -

FNo , Pil_Name , Journey_Date,Depart_time,arr_time , source_city , dest_city , crew_members

Q1) Select Average Transaction amount based on Transaction Mode in descending order of average transaction amount.

```
SELECT
    AVG(AMOUNT) AS AVG_AMOUNT, TMODE
FROM
    TRANSACT
GROUP BY TMODE
ORDER BY AVG_AMOUNT DESC;
```

Result Grid | Filter Ro

AVG_AMOUNT	TMODE
8841.2500	CC
7843.3333	NB
6509.0000	DC
6440.9091	UPI

Q2) Select All Transaction mode and Transaction amount along with Passenger Name, Booking_date of passengers where booking date in on weekends.

```sql
SELECT
    T.TMODE,
    T.AMOUNT,
    P.PNAME,
    P.BOOKING_DATE,
    DAYOFWEEK(P.BOOKING_DATE) AS WEEKEND
FROM
    TRANSACT T
        JOIN
    PASS_DETAILS P ON T.TID = P.TR_ID
WHERE
    DAYOFWEEK(P.BOOKING_DATE) IN (1 , 7);
```

Result Grid | Filter Rows: | Export: | Wrap Cell

TMODE	AMOUNT	PNAME	BOOKING_DATE	WEEKEND
DC	5670	Pankaj Verma	2022-03-20	1
DC	7300	Anjali Srivastava	2022-03-20	1
DC	5300	Anil Pandey	2022-03-12	7
CC	7900	James Spencer	2022-03-19	7
CC	5200	Satish Kaushik	2022-03-06	1
UPI	7000	Aaakriti Shukla	2022-03-12	7
UPI	5280	Vicky Trivedi	2022-03-13	1

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Q3) Display all passengers details who have travelled multiple times

```sql
SELECT
    P.*
FROM
    PASS_DETAILS P
        INNER JOIN
    (SELECT
        PNAME, COUNT(PID) AS COUNT_PID
    FROM
        PASS_DETAILS
    GROUP BY PNAME
    HAVING COUNT(PID) > 1) DT ON P.PNAME = DT.PNAME ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Conte

PID	PName	Booking_Date	Tr_ID	Age	F_no	F_Rewards
123	Pankaj Verma	2022-03-01	78965	20	AI-745	0
124	Vipin Verma	2022-03-02	78966	29	AI-745	2
126	Harshit Soni	2022-03-04	78968	23	AI-747	5
127	Pankaj Verma	2022-03-25	78969	20	AI-748	6
128	Vipin Verma	2022-03-14	78970	29	AI-748	10
129	Pankaj Verma	2022-03-20	78971	20	IN-546	10
133	Betty Sharin	2022-03-08	78975	25	IN-548	20
137	Betty Sharin	2022-03-04	78979	25	SJ-325	30

Q4) Select all the passengers who have earned more Flight rewards than the avg flight rewards earned by passengers whose payment mode is Credit or Debit Card

```
SELECT
    *
FROM
    PASS_DETAILS
WHERE
    F_REWARDS > (SELECT
            AVG(F_REWARDS)
        FROM
            PASS_DETAILS P
                JOIN
            TRANSACT T ON T.TID = P.TR_ID
        WHERE
            T.TMODE IN ('CC' , 'DC'));
```

Result Grid | Filter Rows: | Edit: | Export/Impo

PID	PName	Booking_Date	Tr_ID	Age	F_no	F_Rewards
133	Betty Sharin	2022-03-08	78975	25	IN-548	20
137	Betty Sharin	2022-03-04	78979	25	SJ-325	30
138	Sakshi Ghosh	2022-03-18	78980	70	SJ-325	40
146	Garima Singh	2022-03-22	78988	NULL	SJ-328	20
147	Anusha Raina	2022-03-23	78989	24	IN-549	20
148	Aditya Gaur	2022-03-24	78990	25	AI-746	30
151	Andrew Silva	2022-03-23	78993	NULL	AI-749	18
152	Ederson Walker	2022-03-26	78994	28	SJ-329	50

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Q5) Select all the passengers name, flight_rewards, transaction mode of those passengers whose payment mode is Credit or Debit Card and who have earned more Flight rewards than the avg flight rewards earned by all the passengers

```
SELECT
    P.PNAME, T.TMODE, P.F_REWARDS
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON T.TID = P.TR_ID
WHERE
    P.F_REWARDS > (SELECT
            AVG(F_REWARDS) AS AVG_REWARDS
        FROM
            PASS_DETAILS)
        AND TMODE IN ('CC' , 'DC')
ORDER BY PID ;
```

Result Grid | Filter Rows:

PNAME	TMODE	F_REWARDS
Sakshi Ghosh	DC	40
Garima Singh	DC	20
Anusha Raina	CC	20
Aditya Gaur	CC	30
Andrew Silva	DC	18
Ederson Walker	CC	50

Q6) Display count of failed transactions based on transaction mode

```
SELECT
    TMODE, COUNT(*)
FROM
    TRANSACT
WHERE
    TSUCCESS IS NULL
GROUP BY TMODE;
```

Result Grid | Filter

TMODE	COUNT(*)
UPI	3
DC	1

Q7) Select All Transaction mode and Transaction amount along with Passenger Name, of passengers those who have made the payment using 'CC' or 'UPI'. Also display 10% cashback and name the column as Cashback that can be redeemed only if payment mode is 'CC' and 0 cashback otherwise

```sql
SELECT
    T.TMODE,
    T.AMOUNT,
    P.PNAME,
    CASE
        WHEN T.TMODE = 'CC' THEN 0.1 * T.AMOUNT
        ELSE 0
    END AS CASHBACK
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON T.TID = P.TR_ID
WHERE
    T.TMODE IN ('CC' , 'UPI');
```

Result Grid | Filter Rows:

TMODE	AMOUNT	PNAME	CASHBACK
UPI	8440	Vipin Verma	0
CC	9730	Shivang Malhotra	973.0
UPI	3460	Harshit Soni	0
UPI	4535	Betty Sharin	0
CC	12300	Betty Anshu	1230.0
UPI	7300	Anshul Singh	0
UPI	4535	Vaishu Bhutani	0
UPI	9100	Amitabh Verma	0

Q8) Select pilots name who have been allotted multiple flights. Display the names and the count.

```
SELECT
    PIL_NAME AS PILOT_NAME , COUNT(FNO) AS COUNT_FNO
FROM
    FLIGHT_DETAILS
GROUP BY PIL_NAME
HAVING COUNT(FNO) > 1;
```

Result Grid | Filter Rows:

PILOT_NAME	COUNT_FNO
Anusha Raina	2
Aditya Gaur	2
Vincent Spencer	3

Q9) Display the pilots, source_cty, dest_city, journey_date who flew from either Mumbai or Banglore but didn't land in Delhi or Chennai

```sql
SELECT
    PIL_NAME, SOURCE_CITY, DEST_CITY, JOURNEY_DATE
FROM
    FLIGHT_DETAILS
WHERE
    SOURCE_CITY IN ('DELHI' , 'MUMBAI')
        AND DEST_CITY NOT IN ('DELHI' , 'CHENNAI');
```

Result Grid | Filter Rows: | Export: | Wrap Ce

PIL_NAME	SOURCE_CITY	DEST_CITY	JOURNEY_DATE
Siddharth Wadhwa	Delhi	Kolkata	2022-04-15
Aniruddh Sinha	Delhi	Mumbai	2022-04-16
Siddhanth Arora	Delhi	Bangalore	2022-04-17
Vishal Kambley	Delhi	Hyderabad	2022-04-16
Aditya Gaur	Mumbai	Ahemdabad	2022-04-17
Vincent Spencer	Mumbai	Kolkata	2022-04-21

Q10) Display the count of most frequent destination based on Destination city and airlines company (Indigo, Air India and SpiceJet) where the flight arrived more than once

```
SELECT DEST_CITY ,CASE
WHEN FNO LIKE 'AI%' THEN  'AIR_INDIA'
WHEN FNO LIKE 'SJ%' THEN 'SPICEJET'
ELSE 'INDIGO'
END AS AIRLINES , COUNT(DEST_CITY)  AS COUNT
FROM FLIGHT_DETAILS
GROUP BY DEST_CITY , AIRLINES
HAVING COUNT >1
ORDER BY COUNT DESC ;
```

Result Grid | Filter Rows:

DEST_CITY	AIRLINES	COUNT
Delhi	INDIGO	3
Bangalore	SPICEJET	2
Kolkata	SPICEJET	2

Q11) Select PID,PName,Transaction_Mode, transaction_amount, Booking_Date, Age, Flight_No, Journey date, depart time, arrival time, source city and dest city where flight departure time is on or after 6pm

```
SELECT
    P.PID,
    P.PNAME,
    T.TMODE,
    T.AMOUNT,
    P.BOOKING_DATE,
    P.AGE,
    F.FNO,
    F.JOURNEY_DATE,
    F.DEPART_TIME,
    F.ARR_TIME,
    F.SOURCE_CITY
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
        JOIN
    FLIGHT_DETAILS F ON F.FNO = P.F_NO
WHERE
    HOUR(DEPART_TIME) > 18;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

PID	PNAME	TMODE	AMOUNT	BOOKING_DATE	AGE	FNO	JOURNEY_DATE	DEPART_TIME	ARR_TIME	SOURCE_CITY
131	Utkarsh Arora	DC	4535	2022-03-29	30	IN-547	2022-04-17	20:15:00	22:30:00	Mumbai
132	Anjali Srivastava	DC	7300	2022-03-20	27	IN-547	2022-04-17	20:15:00	22:30:00	Mumbai
139	Harshit Soni	DC	5200	2022-03-11	NULL	SJ-326	2022-04-22	19:30:00	21:30:00	Kolkata
140	Anil Pandey	DC	5300	2022-03-12	56	SJ-326	2022-04-22	19:30:00	21:30:00	Kolkata
141	Amitabh Verma	UPI	9100	2022-03-17	70	SJ-330	2022-04-15	23:30:00	01:45:00	Bangalore
152	Ederson Walker	CC	8000	2022-03-26	28	SJ-329	2022-04-16	23:15:00	03:00:00	Chennai

Q12) Select passenger id, passenger names,depart time,arrival time, transaction mode, time diff in minutes(including hours time) between arr_time and dest_time for passengers where Transcation mode is 'NB' or 'CC'

```sql
SELECT
    P.PID,
    P.PNAME,
    F.DEPART_TIME,
    F.ARR_TIME,
    T.TMODE,
    HOUR(TIMEDIFF(F.DEPART_TIME, F.ARR_TIME)) * 60 +
    MINUTE(TIMEDIFF(F.DEPART_TIME, F.ARR_TIME)) +
    SECOND((TIMEDIFF(F.DEPART_TIME, F.ARR_TIME) / 60)) TIME_DIFF_IN_MINTUES
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
        JOIN
    FLIGHT_DETAILS F ON F.FNO = P.F_NO
WHERE
    TMODE IN ('NB' , 'CC');
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

PID	PNAME	DEPART_TIME	ARR_TIME	TMODE	TIME_DIFF_IN_MINTUES
123	Pankaj Verma	09:45:00	11:30:00	NB	146
125	Shivang Malhotra	13:30:00	15:30:00	CC	153
127	Pankaj Verma	15:45:00	17:30:00	NB	146
128	Vipin Verma	15:45:00	17:30:00	NB	146
134	Betty Anshu	11:30:00	14:45:00	CC	220
137	Betty Sharin	09:45:00	11:30:00	NB	146
142	James Spencer	09:45:00	11:30:00	CC	146
143	Satish Kaushik	09:45:00	11:30:00	CC	146
147	Anusha Raina	17:15:00	18:45:00	CC	106
148	Aditya Gaur	10:15:00	11:45:00	CC	106
152	Ederson Walker	23:15:00	03:00:00	CC	1273
154	Aditya Srivastava	17:15:00	18:45:00	CC	106

Q13) Select Count of passengers per flight no

```
SELECT
    COUNT(P.PID), F.FNO
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
        JOIN
    FLIGHT_DETAILS F ON F.FNO = P.F_NO
GROUP BY F.FNO;
```

Result Grid | Filter Rows

	COUNT(P.PID)	FNO
	2	AI-746
	2	IN-545
	1	AI-749
	1	SJ-329
	2	AI-750

Q14) Display count of passengers based on airlines(Indigo, SpiceJet, Air India) in descending order of count values

```
SELECT
    COUNT(P.PID) AS COUNTPASS, LEFT(F.FNO, 2) AS AIRLINES
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
        JOIN
    FLIGHT_DETAILS F ON F.FNO = P.F_NO
GROUP BY AIRLINES
ORDER BY COUNTPASS DESC;
```

Result Grid | Filter Rows:

	COUNTPASS	AIRLINES
▶	11	AI
	12	IN
	13	SJ

Q15) Select all pilots details (name,passengerID) who are travelling as passengers. Also display their flight_number,transaction amount and transaction mode

```
SELECT
    P.PID, P.PNAME, P.F_NO, T.TMODE, T.AMOUNT
FROM
    PASS_DETAILS P,
    FLIGHT_DETAILS F,
    TRANSACT T
WHERE
    P.PNAME = F.PIL_NAME AND T.TID = P.TR_ID;
```

Result Grid | Filter Rows: | Export

PID	PNAME	F_NO	TMODE	AMOUNT
147	Anusha Raina	IN-549	CC	10500
147	Anusha Raina	IN-549	CC	10500
148	Aditya Gaur	AI-746	CC	9600
148	Aditya Gaur	AI-746	CC	9600
149	Harvey Becker	IN-545	DC	6600

Q16) Display the passenger names, their IDs, FNo,age whose age is greater than avg age of all passengers whose airlines is either Air India or Spice Jet (Using sub query)

```
SELECT
    P.PNAME, P.PID, P.F_NO, P.AGE
FROM
    PASS_DETAILS P
WHERE
    P.AGE > (SELECT
            AVG(AGE)
        FROM
            PASS_DETAILS
        WHERE
            F_NO LIKE 'AI%' OR F_NO LIKE 'SJ%');
```

Result Grid | Filter Rows:

PNAME	PID	F_NO	AGE
Anshul Singh	135	SJ-324	50
Sakshi Ghosh	138	SJ-325	70
Anil Pandey	140	SJ-326	56
Amitabh Verma	141	SJ-330	70
James Spencer	142	SJ-327	69

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Q17) Select all passengers names, PID, flight_number, transaction_success details who have failed transcations

```
SELECT
    P.PNAME, P.PID, P.F_NO , T.TSUCCESS
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
WHERE
    T.TSUCCESS = 1;
```

Result Grid | Filter Rows:

PNAME	PID	F_NO	TSUCCESS
Pankaj Verma	123	AI-745	1
Vipin Verma	124	AI-745	1
Shivang Malhotra	125	AI-747	1
Pankaj Verma	127	AI-748	1
Vipin Verma	128	AI-748	1

Result 4

Q18) Allot 15% cashback to the passengers who are senior citizens(people aged 55 and above) on their transaction amount. Display PID, passenger names,Flight number, age, and transaction amount renamed as DiscountedAmt

```
SELECT
    P.AGE,
    P.PID,
    P.PNAME,
    P.F_NO,
    T.AMOUNT,
    CASE
        WHEN P.AGE > 55 THEN .85 * T.AMOUNT
        ELSE T.AMOUNT
    END AS DISCOUNT
FROM
    PASS_DETAILS P
        JOIN
    TRANSACT T ON P.TR_ID = T.TID
```

Result Grid | Filter Rows: | Export: | Wrap C

AGE	PID	PNAME	F_NO	AMOUNT	DISCOUNT
20	123	Pankaj Verma	AI-745	5670	5670
29	124	Vipin Verma	AI-745	8440	8440
NULL	125	Shivang Malhotra	AI-747	9730	9730
23	126	Harshit Soni	AI-747	3460	3460
20	127	Pankaj Verma	AI-748	5450	5450

Result 2

Q19) Select transaction mode wise maximum age from tables oredered in ascending order of maximum age. Use sub query

```sql
SELECT
    TMODE, MAX(AGE) AS MAX_AGE
FROM
    (SELECT
        T.TMODE, P.AGE
    FROM
        PASS_DETAILS P
    JOIN TRANSACT T ON P.TR_ID = T.TID) DT
GROUP BY TMODE
ORDER BY MAX_AGE;
```

Result Grid

	TMODE	MAX_AGE
▶	NB	35
	DC	70
	UPI	71
	CC	77

Q20) Find PID,passenger Names, Booking_date, Tr_ID, Age in each airlines(Indigo,SpiceJet,Air India) whose age is more than avg age of passengers travellling in that airlines.

```sql
SELECT
    P.PID,
    P.PNAME,
    P.BOOKING_DATE,
    P.TR_ID,
    LEFT(P.F_NO, 2),
    P.AGE
FROM
    PASS_DETAILS P
WHERE
    P.AGE > (SELECT
            AVG(P1.AGE)
        FROM
            PASS_DETAILS P1
        WHERE
            LEFT(P1.F_NO, 2) = LEFT(P.F_NO, 2)
        GROUP BY LEFT(P1.F_NO, 2)
        ORDER BY LEFT(P.F_NO, 2));
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content

PID	PNAME	BOOKING_DATE	TR_ID	LEFT(P.F_NO, 2)	AGE
124	Vipin Verma	2022-03-02	78966	AI	29
128	Vipin Verma	2022-03-14	78970	AI	29
131	Utkarsh Arora	2022-03-29	78973	IN	30
138	Sakshi Ghosh	2022-03-18	78980	SJ	70
141	Amitabh Verma	2022-03-17	78983	SJ	70
142	James Spencer	2022-03-19	78984	SJ	69

Result 8

Q21) Display all transaction details for the passengers where the flight duration is not more than 2.30hrs

```sql
SELECT
    F.FNO,
    T.*,
    F.DEPART_TIME,
    F.ARR_TIME,
    TIMEDIFF(F.DEPART_TIME, F.ARR_TIME) AS TIME_GAP
FROM
    FLIGHT_DETAILS F
        JOIN
    PASS_DETAILS P ON P.F_NO = F.FNO
        JOIN
    TRANSACT T ON T.TID = P.TR_ID
HAVING TIME_GAP <= '02:30:00';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FNO	TID	TMode	Amount	TSuccess	DEPART_TIME	ARR_TIME	TIME_GAP
AI-745	78965	NB	5670	1	09:45:00	11:30:00	-01:45:00
AI-745	78966	UPI	8440	1	09:45:00	11:30:00	-01:45:00
AI-747	78967	CC	9730	1	13:30:00	15:30:00	-02:00:00
AI-747	78968	UPI	3460	0	13:30:00	15:30:00	-02:00:00
AI-748	78969	NB	5450	1	15:45:00	17:30:00	-01:45:00
AI-748	78970	NB	3640	1	15:45:00	17:30:00	-01:45:00
IN-546	78971	DC	5670	0	15:30:00	18:45:00	-03:15:00

Result 10

Thank you!