Airline Management System – Queries

Query for Ticket Booking:

Find all Flights, Departure Time, Arrival Time, Fares for each class BETWEEN:

ORIGIN	DESTINATION
OGD(Ogden)	MCO(Orlando)
VGT(Las Vegas)	AIA(Alliance)
JLN(Joplin)	MVL(Morrisville)
BIG(Delta Junction Ft Greely)	RHI(Rhinelander)
CAK(North Canton)	PLB(Plattsburgh)
MMH(Mammoth Lakes)	JVL(Janesville)

on any given day, sorted on lowest fares.

Query:

```
SELECT LEGS.FLIGHT_NUMBER,
       LEGS.ORIGIN_AIRPORT_CODE,
       LEGS.DESTINATION_AIRPORT_CODE,
       LEGS.DEPARTURE_TIME,
       LEGS.ARRIVAL_TIME,
       FLIGHT_FARE.CLASS,
       FLIGHT_FARE.FLIGHT_FARE
FROM LEGS
INNER JOIN FLIGHT_FARE ON LEGS.LEG_ID = FLIGHT_FARE.FLIGHT_LEGID
WHERE LEGS.DESTINATION_AIRPORT_CODE IN ('MCO',
                                        'AIA',
                                        'MVL',
                                        'RHI',
                                        'PLB',
                                        'JVL')
  AND LEGS.ORIGIN_AIRPORT_CODE IN ('OGD',
                                   'VGT',
                                   'JLN',
                                   'BIG',
                                   'CAK',
                                   'MMH')
ORDER BY FLIGHT_FARE.FLIGHT_FARE ASC;
```

Results:

All Rows Fetched: 6 in 0.052 seconds

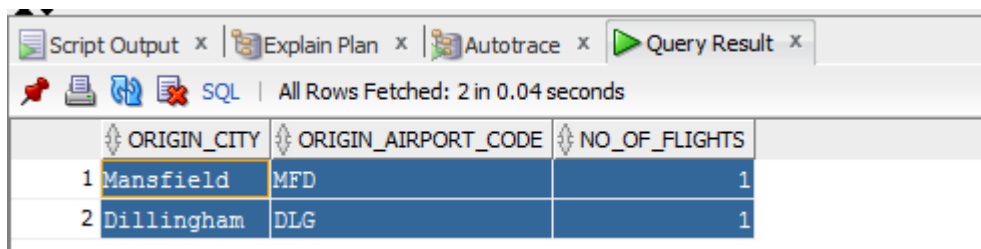|	FLIGHT_NUMBER	ORIGIN_AIRPORT_CODE	DESTINATION_AIRPORT_CODE	DEPARTURE_TIME	ARRIVAL_TIME	CLASS	FLIGHT_FARE
1	AA175	VGT	AIA	6:44 PM	12:11 PM	C000001962	1050
2	AA353	CAK	PLB	2:32 PM	9:01 PM	C000001965	200
3	AA541	MMH	JVL	8:53 PM	6:13 PM	C000001966	350
4	AA574	BIG	RHI	5:16 AM	6:46 AM	C000001964	450
5	AA72	JLN	MVL	8:44 AM	5:07 AM	C000001963	450
6	AA210	OGD	MCO	4:30 AM	1:42 AM	C000001961	550

Query to get inbound flights to ORLANDO:

Display the City name, Airport Code and Number of Daily flights into ORLANDO (MCO), sorted by number of flights in descending order.

Query:

```sql
SELECT AIRPORTS.CITY AS Origin_City,
       LEGS.ORIGIN_AIRPORT_CODE,
       COUNT (LEGS.ORIGIN_AIRPORT_CODE) AS No_of_Flights
FROM LEGS
INNER JOIN AIRPORTS ON LEGS.ORIGIN_AIRPORT_CODE=AIRPORTS.AIRPORT_CODE
WHERE LEGS.DESTINATION_AIRPORT_CODE LIKE'%MCO%'
GROUP BY LEGS.ORIGIN_AIRPORT_CODE,
         AIRPORTS.CITY
ORDER BY No_of_Flights DESC;
```

Result:

	ORIGIN_CITY	ORIGIN_AIRPORT_CODE	NO_OF_FLIGHTS
1	Mansfield	MFD	1
2	Dillingham	DLG	1

All Rows Fetched: 2 in 0.04 seconds

Query to get average passenger capacity per airline:

Generate a report to view the average passenger capacity of every airline operating from every airport in US

Query:

```sql
SELECT A.ORIGIN_AIRPORT_CODE,
       D.AIRPORT_NAME,
       B.MANUFACTURER,
       ROUND(AVG(C.CAPACITY)) AS CAPACITY
FROM FLIGHT_SCHEDULE A
INNER JOIN AIRCRAFT_MODEL B ON TRIM(B.AIRCRAFT_MODEL_ID) = TRIM(A.FLIGHT_NUMBER)
INNER JOIN AIRCRAFT_MODEL C ON TRIM(C.AIRCRAFT_MODEL_ID) = TRIM(B.AIRCRAFT_MODEL_ID)
INNER JOIN AIRPORTS D ON A.ORIGIN_AIRPORT_CODE = D.AIRPORT_CODE
GROUP BY A.ORIGIN_AIRPORT_CODE,
         B.MANUFACTURER,
         D.AIRPORT_NAME;
```

Results:

Script Output ×   Query Result ×

SQL | Fetched 500 rows in 0.385 seconds

	ORIGIN_AIRPORT_CODE	AIRPORT_NAME	MANUFACTURER	CAPACITY
1	MOU	Mountain Village Airport	AIRBUS	307
2	MSY	New Orleans International Airport	AIRBUS	360
3	LBF	North Platte Regional Airport Lee Bird Field	BOMBARDIER	300
4	NUL	Nulato Airport	BOEING	320
5	PTK	Oakland County International Airport	AIRBUS	380
6	ONT	Ontario International Airport	BOEING	210
7	ONT	Ontario International Airport	AIRBUS	375
8	ATW	Outagamie County Regional Airport	BOMBARDIER	250
9	PMD	Palmdale Regional Airport	BOMBARDIER	250

Query to categorize each flight as Cheap/Budget Friendly/Expensive:

Display the flight number, origin airport code, destination airport code, flight fare, and category:
"Cheap" if flight fare <= 200,
"Budget-Friendly", if flight fare >200 but <=699,
"Expensive", if flight fare > 700.

Query:

```
SELECT A.FLIGHT_NUMBER,
       A.ORIGIN_AIRPORT_CODE,
       A.DESTINATION_AIRPORT_CODE,
       B.FLIGHT_FARE,
       CASE
           WHEN FLIGHT_FARE >=700 THEN 'Expensive'
           WHEN FLIGHT_FARE > 200
               AND FLIGHT_FARE <= 699 THEN 'Budget-Friendly'
           WHEN FLIGHT_FARE <= 200 THEN 'Cheap'
           ELSE 'Error'
       END AS RATE
FROM LEGS A,
     FLIGHT_FARE B
WHERE B.FLIGHT_FARE IS NOT NULL
ORDER BY RATE;
```

Result:

Script Output ×   Query Result ×

SQL | Fetched 50 rows in 0.349 seconds

	FLIGHT_NUMBER	ORIGIN_AIRPORT_CODE	DESTINATION_AIRPORT_CODE	FLIGHT_FARE	RATE
1	AA188	WDG	TLT	325	Budget-Friendly
2	AA188	WDG	TLT	300	Budget-Friendly
3	AA188	WDG	TLT	500	Budget-Friendly
4	AA188	WDG	TLT	250	Budget-Friendly
5	AA188	WDG	TLT	250	Budget-Friendly
6	AA188	WDG	TLT	550	Budget-Friendly
7	AA188	WDG	TLT	450	Budget-Friendly
8	AA188	WDG	TLT	550	Budget-Friendly
9	AA188	WDG	TLT	300	Budget-Friendly
10	AA188	WDG	TLT	650	Budget-Friendly
11	AA188	WDG	TLT	250	Budget-Friendly

Query to get details for each flight per airport:

Display the flights running from every airport, their origin and destination, aircraft type, and it's capacity.

Query:

```sql
SELECT A1.AIRPORT_NAME,
       A2.FLIGHT_NUMBER,
       A2.ORIGIN_AIRPORT_CODE,
       A2.DESTINATION_AIRPORT_CODE,
       A4.MODEL,
       A4.CAPACITY
FROM AIRPORTS A1
INNER JOIN FLIGHT_SCHEDULE A2 ON A1.AIRPORT_CODE=A2.ORIGIN_AIRPORT_CODE
INNER JOIN AIRCRAFT A3 ON TRIM(A2.FLIGHT_NUMBER)=TRIM(A3.FLIGHT_NUMBER)
INNER JOIN AIRCRAFT_MODEL A4 ON TRIM(A3.FLIGHT_NUMBER)=TRIM(A4.AIRCRAFT_MODEL_ID)
ORDER BY A1.AIRPORT_NAME;
```

Result:

SQL | Fetched 50 rows in 0.056 seconds

	AIRPORT_NAME	FLIGHT_NUMBER	ORIGIN_AIRPORT_CODE	DESTINATION_AIRPORT_CODE	MODEL	CAPACITY
1	Aberdeen Regional Airport	AA271	ABR	CDW	BOEING210	210
2	Aberdeen Regional Airport	AA194	ABR	ADQ	BOMBARDIER375	375
3	Aberdeen Regional Airport	AA52	ABR	CGX	BOEING300	300
4	Abilene Regional Airport	AA217	ABI	DFW	BOEING220	220
5	Aguadilla Airport	AA248	BQN	MDY	BOEING280	280
6	Akron-Canton Airport	AA35	CAK	PLB	AIRBUS200	200
7	Albuquerque International Sunport	AA439	ABQ	PTK	BOEING300	300
8	Albuquerque International Sunport	AA316	ABQ	MIV	BOEING250	250
9	Alexandria International Airport	AA318	AEX	BNA	BOMBARDIER360	360
10	Alexandria International Airport	AA197	AEX	SAV	BOEING280	280
11	Allegheny County Airport	AA448	AGC	3T7	BOMBARDIER300	300

Query to generate report for booked flights:

Generate a report on the booked flights with the factors being origin, destination, passengers and the air fare.

Query:

```sql
SELECT P1.RESERVATION_ID,
       R3.FLIGHT_NUMBER,
       R2.LEG_ID,
       R3.ORIGIN_AIRPORT_CODE,
       R3.DESTINATION_AIRPORT_CODE,
       R3.DEPARTURE_TIME,
       R3.ARRIVAL_TIME,
       R4.FIRST_NAME,
       R4.MIDDLE_NAME,
       P1.TOTAL_PAYMENT
FROM PAYMENTS P1
INNER JOIN RESERVATION R1 ON P1.RESERVATION_ID=R1.RESERVATION_ID
INNER JOIN PASSENGER R4 ON R1.PASSENGER_ID=R4.PASSENGER_ID
INNER JOIN ITINERARY_LEGS R2 ON R1.RESERVATION_ID= R2.RESERVATION_ID
INNER JOIN LEGS R3 ON R3.LEG_ID=R2.LEG_ID;
```

Result:

	RESERVATION_ID	FLIGHT_NUMBER	LEG_ID	ORIGIN_AIRPORT_CODE	DESTINATION_AIRPORT_CODE	DEPARTURE_TIME	ARRIVAL_TIME	FIRST_NAME	MIDDLE_NAME	TOTAL_PAYM
1	PID00000988	AA210	LG000001467	OGD	MCO	4:30 AM	1:42 AM	Sarita	L	400
2	PID00001076	AA175	LG000001468	VGT	AIA	6:44 PM	12:11 PM	William	J	650
3	PID00000164	AA72	LG000001469	JLN	MVL	8:44 AM	5:07 AM	Jordan	A	900
4	PID00000260	AA574	LG000001470	BIG	RHI	5:16 AM	6:46 AM	Chastity	J	900
5	PID00001094	AA353	LG000001471	CAK	PLB	2:32 PM	9:01 PM	Michael	L	550
6	PID00000974	AA541	LG000001472	MMH	JVL	8:53 PM	6:13 PM	Joy	B	950
7	PID00000492	AA350	LG000001473	BIG	PDT	12:57 PM	11:07 AM	Robert	J	850
8	PID00000448	AA609	LG000001474	WBB	SFB	8:06 AM	4:15 PM	Lisa	W	650
9	PID00000048	AA524	LG000001475	HON	MVY	8:30 AM	3:15 AM	Julia	K	450
10	PID00001134	AA127	LG000001476	MRI	HND	4:47 AM	11:15 PM	Jennifer	S	550