

## Assignment #3

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### Questions :

- a) Display a list of all flights, airline should be sorted alphabetically.

```
SELECT Flight_number, Airline  
FROM FLIGHT  
ORDER BY Airline;
```

- b) For the fares with amount over 50 \$, display the Restrictions and amount after taxes. Note: Taxes = 15%

```
SELECT Restrictions, Amount * 1,15 AS Amount_After_Taxes  
FROM FARE  
WHERE Amount > 50;
```

- c) Delete 5% From the records in SEAT-Reservation table.

```
DELETE TOP(5) PERCENT  
FROM SEAT-RESERVATION;
```

- d) For each AIRPLANE-TYPE, display a list of Airplane-type-name and the number of seats the airplane has.

```
SELECT Airplane_type-name, max_seats  
FROM AIRPLANE-TYPE;
```

- e) Retrieve the name of airplane type whose name starts with E and ends with T.

```
SELECT Airplane_type-name  
FROM AIRPLANE-TYPE  
WHERE Airplane_type-name LIKE 'E%T';
```

f) Write a SQL query to list all flights along with their departure and arrival airport names, departure and arrival times, and the airplane type used for each flight leg. Ensure that only flights scheduled on a specific weekday (Monday) are included in the results.

```
SELECT F.Flight-number,
       A1.Name AS Departure-airport,
       A2.Name AS Arrival-airport,
       FL.scheduled-departure-time,
       FL.scheduled-arrival-time,
       AP.Airplane-type
FROM FLIGHT F
JOIN FLIGHT-LEG FL ON F.Flight-number = FL.Flight-number
JOIN AIRPORT A1 ON FL.Departure-airport-code = A1.Airport-code
JOIN AIRPORT A2 ON FL.Arrival-airport-code = A2.Airport-code
JOIN LEG-INSTANCE LI ON FL.Flight-number = LI.Flight-number
                     AND FL.Leg-number = LI.Leg-number
JOIN AIRPLANE AP ON LI.Airplane-id = AP.Airplane-id
WHERE F.Weekdays LIKE 'MONDAY';
```

g) Write a SQL query to find all flights operated by airlines whose name contains the word 'Air'. The query should return the flight number, airline name, departure airport name, arrival airport name, and scheduled departure and arrival times for each leg of the flight.

```
SELECT F.Flight-number, F.Airline, A1.Name AS Departure-airport,
       A2.Name AS Arrival-airport, FL.scheduled-departure-time,
       FL.scheduled-arrival-time
FROM FLIGHT F
JOIN FLIGHT-LEG FL ON F.Flight-number = FL.Flight-number
JOIN AIRPORT A1 ON FL.Departure-airport-code = A1.Airport-code
JOIN AIRPORT A2 ON FL.Arrival-airport-code = A2.Airport-code
WHERE F.Airline LIKE '%Air%';
```

BONUS QUESTIONS:

1. Inserted records in the tables:

AIRPLANE

Airplane_id	Total_number_of_seats	Airplane_type
000001	180	A320
000002	175	A320
000003	156	A319
000004	150	A319
000005	145	A319
000006	188	707
000007	187	707
000008	124	727
000009	123	737
000010	120	737
000011	550	747
000012	500	747
000013	225	757
000014	290	767
000015	285	767
000016	440	777
000017	323	787
000018	50	ERJ145
000019	50	ERJ145
000020	110	190
000021	80	170
000022	44	CRJ440

000023	40	CRJ440
000024	50	CRJ100
000025	70	CRJ700
000026	75	CRJ700
000027	77	CRJ700
000028	166	MD80
000029	200	A321
000030	180	A332

AIRPLANE\_TYPE

Airplane_type_name	Max_seats	Company
A320	180	Airbus
A319	156	Airbus
A321	236	Airbus
A332	200	Airbus
707	189	Boeing
737	124	Boeing
747	550	Boeing
757	228	Boeing
727	189	Boeing
767	290	Boeing
777	440	Boeing
787	323	Boeing
ERJ145	50	Embraer
190	114	Embraer
170	80	Embraer
CRJ440	44	Bombardier
CRJ100	50	Bombardier
CRJ700	78	Bombardier
MD80	166	McDonnell-Douglas



# AIRPORT

Airport_code	Name	City	State
SFO	San Francisco International	San Francisco	CA
OAK	Oakland International	Oakland	CA
LAS	McCarran International	Las Vegas	NV
HNL	Honolulu International	Honolulu	HI
JFK	John F Kennedy International	New York	NY
FAT	Fresno Yosemite International	Fresno	CA
MSY	Louis Armstrong	New Orleans	LA
ORD	Chicago-Hare-International	Chicago	IL
MDW	Midway	Chicago	IL
SMF	Sacramento International	Sacramento	CA
SCK	Stockton Metropolitan	Stockton	CA
PHX	Phoenix Sky Harbor	Phoenix	AZ
DEN	Denver International	Denver	CO
EWR	Newark International	Newark	NJ

IAH	Bush Intercontinental	Houston	TX
LAX	Los Angeles International	Los Angeles	CA
DCA	Ronald Reagan National	Arlington	VA
IAD	Washington Dulles International	Dulles	VA
MSN	Dane County Regional	Madison	WI
MSP	Minneapolis St Paul	Minneapolis	MN
SLC	Salt Lake City International	Salt Lake City	UT
DFW	Dallas Fort Worth	DFW	TX
SAN	San Diego International	San Diego	CA
IWA	Phoenix Mesa Gateway	Phoenix	AZ
SJC	San Jose International	San Jose	CA
ONT	Ontario International	Ontario	CA

## FLIGHT

Flight_number	Airline	Weekdays
AA100	American Airlines	Monday
AA200	American Airlines	Monday
AL300	Allegiant	Sunday
DL400	Delta	Wednesday
HA500	Hawaiian Airlines	Tuesday

## Orders

order_id	item	amount	customer_id
1	Keyboard	400	4
2	Mouse	300	4
3	Monitor	12000	3
4	Keyboard	400	1
5	Mousepad	250	2

## Shippings

shipping_id	status	customer
1	Pending	2
2	Pending	4
3	Delivered	3
4	Pending	5
5	Delivered	1

**Customers**

customer_id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

**FARE**

Flight_number	Fare_code	Amount	Restrictions
UA560	L	350	No
G4154	Y	106	No
G4155	Y	142	No
DL5841	Y	100	Yes
DL1149	B	500	Yes
HA48	F	1000	Yes
AA1522	Y	250	No
AA3472	Y	150	Yes
WN380	Y	256	No
B6624	Y	98	No

CAN\_LAND

Airplane_type_name	Airport_code
MD80	SCK
MD80	SAN
MD80	IWA
MD80	LAS
ERJ145	IWA
ERJ145	FAT
ERJ145	ORD
ERJ145	MSN
CRJ440	MSN
CRJ440	MSP
CRJ100	MSN
CRJ100	MSP
CRJ700	MSN
CRJ700	SLC
CRJ700	ORD
170	OAK
170	LAX
190	SLC
190	OAK
707	HNL
707	OAK
707	MDW
777	LAX
777	IAD
787	IAH
787	JFK
787	EWR
A321	DFW
A321	DEN
A332	OAK
A332	HNL
A320	JFK
A320	LAX
A320	IAH
A319	SLC
A319	PHX
A319	MSP
A319	SFO
A319	MDW

707	SJC
727	SMF
727	SJC
727	LAX
737	OAK
737	SFO
737	ORD
737	MDW
737	ONT
737	SMF
737	SJC
737	SAN
737	LAS
747	SFO
747	JFK
747	ORD
747	MSP
747	DEN
757	LAS
757	PHX
757	DCA
757	LAX
757	HNL
777	ORD

LEG\_INSTANCE

Flight_number	Leg_number	Date	Number_of_available_seats	Airplane_id
G4155	1	2024-11-01	70	000006
G4154	1	2024-11-01	60	000005
DL5841	1	2024-11-01	45	000003
DL1149	1	2024-11-01	50	000011
HA48	1	2024-11-01	30	000012
AA1522	1	2024-11-01	75	000009
WN380	1	2024-11-01	50	000008
WN380	2	2024-11-01	50	000008
B6624	1	2024-11-01	40	000002

Departure_airport_code	Departure_time	Arrival_airport_code	Arrival_time
SCK	17:35:00	IWA	20:19:00
SCK	16:06:00	IWA	16:51:00
OAK	12:45:00	LAX	14:05:00
LAX	18:45:00	HNL	22:43:00
HNL	14:15:00	OAK	21:10:00
SFO	00:05:00	ORD	06:04:00
MDW	07:55:00	ONT	10:10:00
ONT	10:45:00	SMF	11:45:00
LAX	21:15:00	JFK	05:22:00



SEAT\_RESERVATION

Flight_number	Leg_number	Date	Seat_number	Customer_name	Customer_phone
G4155	1	2024-11-01	1A	Alice	1234567890
G4155	1	2024-11-01	1B	Bob	0987654321
G4154	1	2024-11-01	2A	Charlie	1231231234
G4154	1	2024-11-01	2B	David	3213214321
DL5841	1	2024-11-01	3A	Eve	4564564567
DL5841	1	2024-11-01	3B	Frank	6546547654
DL1149	1	2024-11-01	4A	Grace	7897897890
DL1149	1	2024-11-01	4B	Heidi	9879870987
HA48	1	2024-11-01	5A	Ivan	1112223333
HA48	1	2024-11-01	5B	Judy	2223334444
AA1522	1	2024-11-01	6A	Mallory	3334445555
AA1522	1	2024-11-01	6B	Niaj	4445556666
WN380	1	2024-11-01	7A	Olivia	5556667777
WN380	1	2024-11-01	7B	Peggy	6667778888
WN380	2	2024-11-01	8A	Rupert	7778889999
WN380	2	2024-11-01	8B	Sybil	8889990000
B6624	1	2024-11-01	9A	Trent	9990001111
B6624	1	2024-11-01	9B	Victor	0001112222
B6624	1	2024-11-01	10A	Walter	1112223333

2.

Airplane:

Airplane_id	Total_number_of_seats	Airplane_type
000001	180	A320
000002	175	A320
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000004	150	A319
000005	145	A319
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A332	200	Airbus
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747	550	Boeing
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767	290	Boeing
777	440	Boeing
787	323	Boeing
ERJ145	50	Embraer
190	114	Embraer
170	80	Embraer
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CRJ100	50	Bombardier
CRJ700	78	Bombardier
MD80	166	McDonnell-Douglas

Fare:

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AA3472	Y	150	Yes
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Airport:

Output			
Airport_code	Name	City	State
SFO	San Francisco International	San Francisco	CA
OAK	Oakland International	Oakland	CA
LAS	McCarran International	Las Vegas	NV
HNL	Honolulu International	Honolulu	HI
JFK	John F Kennedy International	New York	NY
FAT	Fresno Yosemite International	Fresno	CA
MSY	Louis Armstrong	New Orleans	LA
ORD	Chicago-Hare-International	Chicago	IL
MDW	Midway	Chicago	IL
SMF	Sacramento International	Sacramento	CA
SCK	Stockton Metropolitan	Stockton	CA
PHX	Phoenix Sky Harbor	Phoenix	AZ
DEN	Denver International	Denver	CO
EWB	Newark International	Newark	NJ
IAH	Bush Intercontinental	Houston	TX
LAX	Los Angeles International	Los Angeles	CA
DCA	Ronald Reagan National	Arlington	VA
IAD	Washington Dulles International	Dulles	VA
MSN	Dane County Regional	Madison	WI
MSP	Minneapolis St Paul	Minneapolis	MN
SLC	Salt Lake City International	Salt Lake City	UT
DFW	Dallas Fort Worth	DFW	TX
SAN	San Diego International	San Diego	CA
IWA	Phoenix Mesa Gateway	Phoenix	AZ
SJC	San Jose International	San Jose	CA
ONT	Ontario International	Ontario	CA

Flight:

Flight_number	Airline	Weekdays
AA100	American Airlines	Monday
AA200	American Airlines	Monday
AL300	Allegiant	Sunday
DL400	Delta	Wednesday
HA500	Hawaiian Airlines	Tuesday

Flight Leg:

Flight_number	Leg_number	Departure_airport_code	Scheduled_departure_time	Arrival_airport_code	Scheduled_arrival_time
G4155	1	SCK	17:35:00	IWA	20:19:00
G4154	1	SCK	16:06:00	IWA	16:51:00
DL5841	1	OAK	12:45:00	LAX	14:05:00
DL1149	1	LAX	18:45:00	HNL	22:43:00
HA48	1	HNL	14:15:00	OAK	21:10:00
AA1522	1	SFO	00:05:00	ORD	06:04:00
WN380	1	MDW	07:55:00	ONT	10:10:00
WN380	2	ONT	10:45:00	SMF	11:45:00
B6624	1	LAX	21:15:00	JFK	05:22:00

Leg Instance:


Flight_number	Leg_number	Date	Number_of_available_seats	Airplane_id	Departure_airport_code	Departure_time	Arrival_airport_code	Arrival_time
G4155	1	2024-11-01	70	000006	SCK	17:35:00	IWA	20:19:00
G4154	1	2024-11-01	60	000005	SCK	16:06:00	IWA	16:51:00
DL5841	1	2024-11-01	45	000003	OAK	12:45:00	LAX	14:05:00
DL1149	1	2024-11-01	50	000011	LAX	18:45:00	HNL	22:43:00
HA48	1	2024-11-01	30	000012	HNL	14:15:00	OAK	21:10:00
AA1522	1	2024-11-01	75	000009	SFO	00:05:00	ORD	06:04:00
WN380	1	2024-11-01	50	000008	MDW	07:55:00	ONT	10:10:00
WN380	2	2024-11-01	50	000008	ONT	10:45:00	SMF	11:45:00
B6624	1	2024-11-01	40	000002	LAX	21:15:00	JFK	05:22:00

## Can Land:

Airplane_type_name	Airport_code
MD80	SCK
MD80	SAN
MD80	IWA
MD80	LAS
ERJ145	IWA
ERJ145	FAT
ERJ145	ORD
ERJ145	MSN
CRJ440	MSN
CRJ440	MSP
CRJ100	MSN
CRJ100	MSP
CRJ700	MSN
CRJ700	SLC
CRJ700	ORD
170	OAK
170	LAX
190	SLC
190	OAK
707	HNL
707	OAK
707	MDW
707	SJC
727	SMF
727	SJC
727	LAX
737	OAK
737	SFO
737	ORD
737	MDW
737	ONT
737	SMF
737	SJC
737	SAN
737	LAS
747	SFO
747	JFK
747	ORD
747	MSP
747	DEN
757	LAS
757	PHX
757	DCA
757	LAX
757	HNL
777	ORD
777	LAX
777	IAD
787	IAH
787	JFK
787	EWB
A321	DFW
A321	DEN
A332	OAK
A332	HNL
A320	JFK
A320	LAX
A320	IAH
A319	SLC
A319	PHX
A319	MSP
A319	SFO
A319	MDW

## Seat Reservation:

Flight_number	Leg_number	Date	Seat_number	Customer_name	Customer_phone
G4155	1	2024-11-01	1A	Alice	1234567890
G4155	1	2024-11-01	1B	Bob	0987654321
G4154	1	2024-11-01	2A	Charlie	1231231234
G4154	1	2024-11-01	2B	David	3213214321
DL5841	1	2024-11-01	3A	Eve	4564564567
DL5841	1	2024-11-01	3B	Frank	6546547654
DL1149	1	2024-11-01	4A	Grace	7897897890
DL1149	1	2024-11-01	4B	Heidi	9879870987
HA48	1	2024-11-01	5A	Ivan	112223333
HA48	1	2024-11-01	5B	Judy	2223334444
AA1522	1	2024-11-01	6A	Mallory	3334445555
AA1522	1	2024-11-01	6B	Niaj	4445556666
WN380	1	2024-11-01	7A	Olivia	5556667777
WN380	1	2024-11-01	7B	Peggy	6667778888
WN380	2	2024-11-01	8A	Rupert	7778889999
WN380	2	2024-11-01	8B	Sybil	8889990000
B6624	1	2024-11-01	9A	Trent	9990001111
B6624	1	2024-11-01	9B	Victor	0001112222
B6624	1	2024-11-01	10A	Walter	112223333

Please note that the data points for the above table were retrieved from a database available on GitHub, while some modifications were made to fit the  model provided in the assignment. Link for the Data: [Airline Reservation System Sample Data](#)

relational  
database  
Schema