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CMPS 664 - Project One Documentation

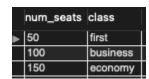
28 April 2021

Tables

- Seat_classes:
 - Contains the available seat classes for all flights



- Seats:
 - o Contains the number of seats for each class of seats



- Pnr:
 - Contains all original data from the given PNR file with any entries containing missing data removed via Python script



- Airports:
 - o Contains original information from the given IATA file



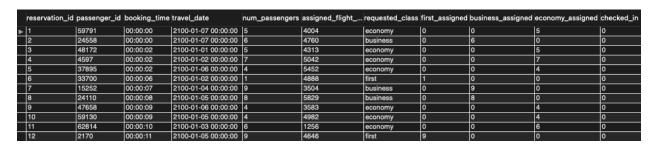
- Passengers:
 - o Contains pertinent information for passengers derived from the PNR file/table

	passenger_id	first_name	last_name	address	age
•	1	Sean	Foster	1621 Note Point,37325,OR	47
	2	Frank	Perez	1011 Fubdi Center,85298,IL	57
	3	Janet	Watson	617 Atgo Highway,80971,RI	70
	4	Jack	Martinez	164 ljdeb Ridge,32947,ND	44
	5	Craig	Henderson	1483 Gokkig Heights,33490,NH	56
	6	Kathleen	Davis	1321 Acidin River,43377,CA	40
	7	Earl	Gonzales	1899 Fimmuk Pike,33545,DC	32
	8	Rachel	Thomas	225 Raluj Grove,25428,MO	77
	9	Julia	Jackson	711 Dise Plaza,02035,PA	74
	10	Timothy	Patterson	75 Eczif Boulevard,38573,NC	37
	11	Donna	Hill	691 Uveca Heights,45798,ND	70

- Flights:
 - o Contains all flights derived from the PNR file/table

	flight_id	departure_date	origin	destination	first_remaining	business_remaining	economy_remaining	total_remaining
Þ	· 1	2100-01-01 00:00:00	ATL	BOS	29	78	132	239
	2	2100-01-02 00:00:00	ATL	BOS	18	61	118	197
	3	2100-01-03 00:00:00	ATL	BOS	32	87	119	238
	4	2100-01-04 00:00:00	ATL	BOS	29	76	140	245
	5	2100-01-05 00:00:00	ATL	BOS	33	79	134	246
	6	2100-01-06 00:00:00	ATL	BOS	27	93	134	254
	7	2100-01-07 00:00:00	ATL	BOS	16	100	119	235
	8	2100-01-01 00:00:00	ATL	BWI	31	51	113	195
	9	2100-01-02 00:00:00	ATL	BWI	48	89	123	260
	10	2100-01-03 00:00:00	ATL	BWI	30	76	143	249
	11	2100-01-04 00:00:00	ATL	BWI	46	87	132	265

- Master reservations:
 - Contains all pertinent information for reservations made on a first come, first serve basis based on the booking time of the reservation request
 - Checked-in attribute defaults to false upon insertion



Example Queries

1). Show the flight schedule between two airports between two dates:

```
CALL flight_schedule("ATL", "BOS", "2100-01-01", "2100-01-07");
```

flight_id	departure_date	origin	destination	first_remaining	business_remaining	economy_remaining	total_remaining
. 1	2100-01-01 00:00:00	ATL	BOS	29	78	132	239
2	2100-01-02 00:00:00	ATL	BOS	18	61	118	197
3	2100-01-03 00:00:00	ATL	BOS	32	87	119	238
4	2100-01-04 00:00:00	ATL	BOS	29	76	140	245
5	2100-01-05 00:00:00	ATL	BOS	33	79	134	246
6	2100-01-06 00:00:00	ATL	BOS	27	93	134	254
7	2100-01-07 00:00:00	ATL	BOS	16	100	119	235

- 2). Rank top 3 {source, destination} airports based on the booking requests for a week.
 - Date used in the procedure call is the beginning of a week to search through



	count_fligh	origin	destination		
▶	102	HNL	IAH	Γ	
	100	MCO	PHX		
	99	ATL	DCA		

3). Next available flight with seats between two given airports.

```
CALL next_available_flight("ATL", "BOS");
```



4). Average occupancy rate for all flights between two cities.

```
CALL avg_occupancy("ATL", "BOS");

average_occupancy num_flights

21.2381 7
```

Demonstrations of Features and Limitations

- Check-In Feature:
 - Reservation we are attempting to check-in for:

```
reservation_id passenger_id booking_time travel_date num_passengers assigned_flight_... requested_class first_assigned business_assigned economy_assigned checked_in | 1 | 59791 | 00:00:00 | 2100-01-07 00:00:00 | 5 | 4004 | economy | 0 | 0 | 5 | 0 |
```

• More than 24 hours before flight departure:

```
CALL update_checkin("2100-01-05 00:00:01", 1);
```

```
Error Code: 1644. Check-In must be performed within 24 hours prior to flight departure!
```

• After flight has departed:

```
CALL update_checkin("2100-01-07 00:00:01", 1);
```

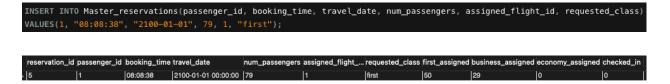
```
Error Code: 1644. Check-In must be performed within 24 hours prior to flight departure!
```

• Within 24 hours of flight departure, but not after (success):

```
CALL update_checkin("2100-01-06 00:00:01", 1);
```



- Checked-in attribute is now set to true
- Making a reservation that splits passengers of the same party amongst seat classes:
 - Flights are currently not populated in these examples!
 - Attempting to accommodate reservation for first class with n_pass as 79:



- Successfully splits the party with 50 passengers in first class, the remaining 29 in business class
- Attempting to accommodate reservation for business class with n_pass as 300 (filling the flight):

- Successfully splits the party with 50 passengers in first class, 100 in business class, the remaining 150 in first class, fully occupying the flight as intended
- Attempting to accommodate reservation for economy class with n pass as 170:

- Successfully splits the party with 150 passengers in economy class, the remaining 20 passengers in business class
- Attempting to make a reservation that cannot be accommodated (canceled):

Flights are already populated with data from the original files in this example, so
 attempting to insert with n_pass as 300 certainly cannot be accommodated

```
INSERT INTO Master_reservations(passenger_id, booking_time, travel_date, num_passengers, assigned_flight_id, requested_class)
VALUES(1, "08:08:38", "2100-01-01", 300, 1, "economy");
```

Error Code: 1643. Reservation cannot be accomodated! Reservation canceled!