

Kyle Calabro

Dr. Dutta

CMPS 664 - Project One Documentation

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Tables

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

class
business
economy
first
NULL

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

num_seats	class
50	first
100	business
150	economy

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

first_name	last_name	address	age	origin	destination	travel_date	class	booking_time	num_passengers
Sean	Foster	1621 Note Point,37325,OR	47	MSP	JFK	2100-01-02	business	02:01:15	5
Frank	Perez	1011 Fubdl Center,85298,IL	57	PHL	MDW	2100-01-03	economy	11:56:01	7
Janet	Watson	617 Atgo Highway,80971,RI	70	IAD	MIA	2100-01-02	economy	08:08:38	5
Jack	Martinez	164 Ijdeb Ridge,32947,ND	44	SAN	EWB	2100-01-01	business	01:50:18	9
Craig	Henderson	1483 Gokkig Heights,33490,NH	56	DCA	MSP	2100-01-05	first	09:20:23	1
Kathleen	Davis	1321 Acidin River,43377,CA	40	LAS	FLL	2100-01-02	business	10:11:38	10
Earl	Gonzales	1899 Fimmuk Pike,33545,DC	32	EWB	ATL	2100-01-02	business	22:10:43	5
Rachel	Thomas	225 Raluj Grove,25428,MO	77	BWI	IAH	2100-01-01	business	10:12:30	2
Julia	Jackson	711 Dise Plaza,02035,PA	74	FLL	PHL	2100-01-07	economy	19:31:14	1
Timothy	Patterson	75 Eczif Boulevard,38573,NC	37	ORD	HNL	2100-01-05	economy	09:50:30	1

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

iata_code
▶ ATL
BOS
BWI
CLT
DCA
DEN
DFW
DTW
EWB
FLL
HNL

- Passengers:
 - 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 Ijdeb 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:
 - Contains all flights derived from the PNR file/table

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
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

	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
2		24558	00:00:00	2100-01-07 00:00:00	6	4760	business	0	6	0	0
3		48172	00:00:02	2100-01-01 00:00:00	5	4313	economy	0	0	5	0
4		4597	00:00:02	2100-01-02 00:00:00	7	5042	economy	0	0	7	0
5		37895	00:00:02	2100-01-06 00:00:00	4	5452	economy	0	0	4	0
6		33700	00:00:06	2100-01-02 00:00:00	1	4888	first	1	0	0	0
7		15252	00:00:07	2100-01-04 00:00:00	9	3504	business	0	9	0	0
8		24110	00:00:08	2100-01-05 00:00:00	8	5829	business	0	8	0	0
9		47658	00:00:09	2100-01-06 00:00:00	4	3583	economy	0	0	4	0
10		59130	00:00:09	2100-01-05 00:00:00	4	4982	economy	0	0	4	0
11		62814	00:00:10	2100-01-03 00:00:00	6	1256	economy	0	0	6	0
12		2170	00:00:11	2100-01-05 00:00:00	9	4646	first	9	0	0	0

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

```
CALL top_airports("2100-01-01");
```

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

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

- 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:

```
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", 79, 1, "first");
```

reservation_id	passenger_id	booking_time	travel_date	num_passengers	assigned_flight_id	requested_class	first_assigned	business_assigned	economy_assigned	checked_in
5	1	08:08:38	2100-01-01 00:00:00	79	1	first	50	29	0	0

- 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):

```
INSERT INTO Master_reservations(passenger_id, booking_time, travel_date, num_passengers, assigned_flight_id, requested_class)
VALUES(1, "08:08:39", "2100-01-01", 300, 1, "business");
```

reservation_id	passenger_id	booking_time	travel_date	num_passengers	assigned_flight_id	requested_class	first_assigned	business_assigned	economy_assigned	checked_in
6	1	08:08:39	2100-01-01 00:00:00	300	1	business	50	100	150	0

- 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:

```
INSERT INTO Master_reservations(passenger_id, booking_time, travel_date, num_passengers, assigned_flight_id, requested_class)
VALUES(1, "08:08:39", "2100-01-01", 170, 1, "economy");
```

reservation_id	passenger_id	booking_time	travel_date	num_passengers	assigned_flight_id	requested_class	first_assigned	business_assigned	economy_assigned	checked_in
7	1	08:08:39	2100-01-01 00:00:00	170	1	economy	0	20	150	0

- 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!
```