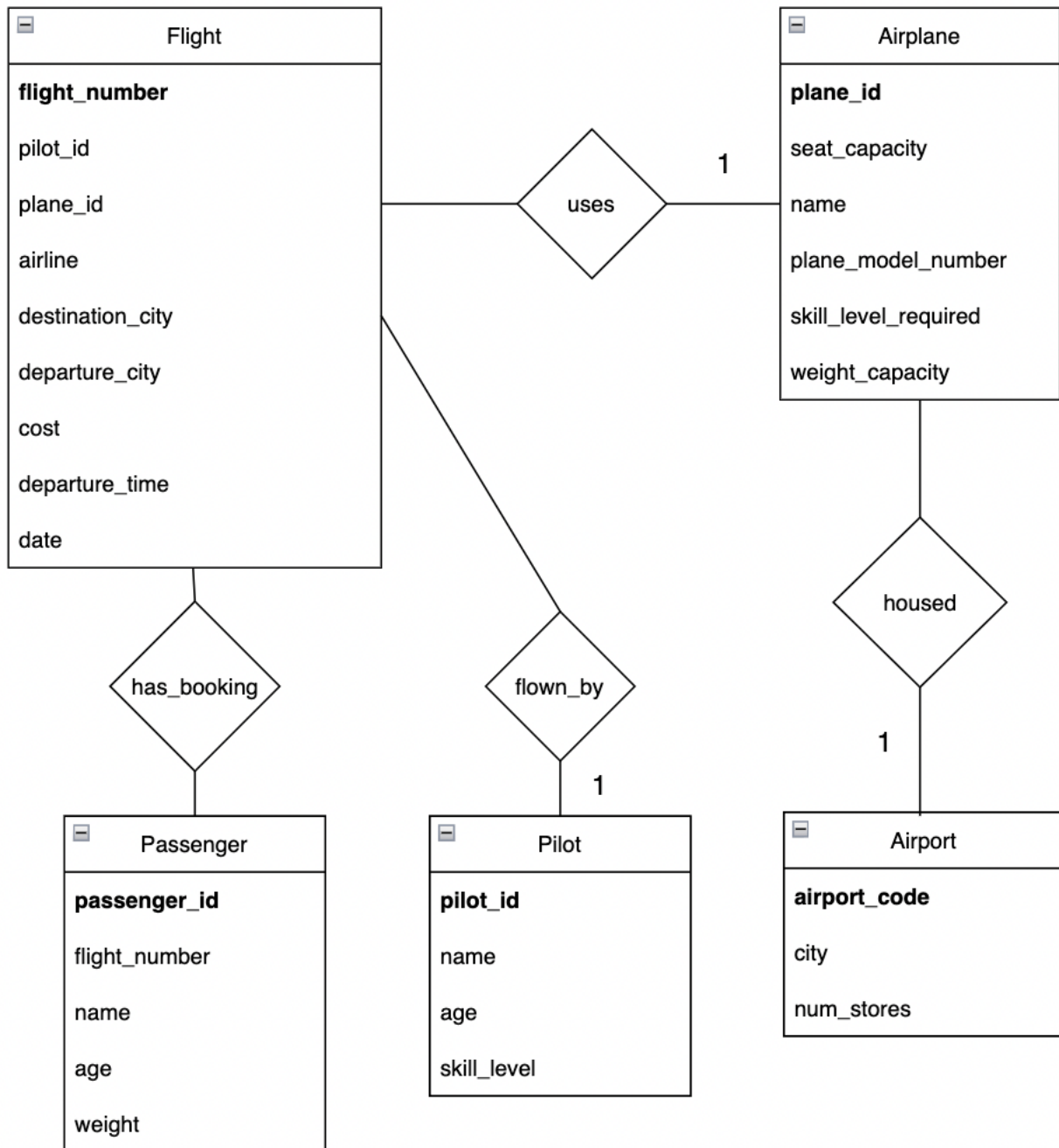


Brian Miller
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Project Reminder:

My PDA is a database to organize flight information for airway control and general information regarding flights. **flown_by**, **uses**, and **has_booking** relations do not need to be added to the sql database as their keys are already a part of both relational sets. All tables have 3000 rows, except for Passenger, which has 30,000 rows.



Description:

The program is called `check_flight_requirements`. It ensures that all of the flight requirements have been met, before the flight can take off. The user input (written in the script at the top) is the `flight_number`, the output is a boolean `TRUE/FALSE` whether or not the flight satisfies all of the requirements and is cleared for flight. The requirements are as such:

- The total number of passengers on the flight is less than or equal to the plane's seat capacity
- The total weight of all of the passengers on the flight is less than or equal to the `weight_capacity` of the plane
- The pilots `skill_level` is greater than or equal to the plane's `skill_level_required`

Code:

```
#!/usr/bin/env python3
import mysql.connector

#### USER INPUT ####
flight_number = "AABFJFNZATRXXGO"

#### SQL CONNECTION ####
mydb = mysql.connector.connect(
    user='pysql',      # could be root, or a user you created, I created 'testuser'
    passwd='ilovesql', # the password for that use
    database='aircontrol', # the database to connect to
    host='127.0.0.1',   # localhost
    allow_local_infile='1' # needed so can load local files
)
myc = mydb.cursor()
myc.execute('set global local_infile = 1') # allow loading of local files

# use the correct database
myc.execute ("use aircontrol")

#### SQL COMMANDS ####
myc.execute ("""SELECT plane_id FROM flight F WHERE F.flight_number = "{}"; """.format(flight_number))
plane_id_int = myc.fetchall()[0][0]

myc.execute ("""SELECT pilot_id FROM flight F WHERE F.flight_number = "{}"; """.format(flight_number))
pilot_id_int = myc.fetchall()[0][0]

myc.execute ("""SELECT COUNT(*) FROM passenger P WHERE P.flight_number = "{}"; """.format(flight_number))
```

```

num_passengers_int = myc.fetchall()[0][0]

myc.execute("""SELECT SUM(weight) FROM passenger P WHERE P.flight_number = "{}";
            """.format(flight_number))
sum_passenger_weight_int = myc.fetchall()[0][0]

myc.execute("""SELECT seat_capacity FROM airplane A WHERE A.plane_id = "{}"; """.format(plane_id_int))
plane_seat_capacity_int = myc.fetchall()[0][0]

myc.execute("""SELECT weight_capacity FROM airplane A WHERE A.plane_id = "{}"; """.format(plane_id_int))
plane_weight_capacity_int = myc.fetchall()[0][0]

myc.execute("""SELECT skill_level_required FROM airplane A WHERE A.plane_id = "{}";
            """.format(plane_id_int))
plane_skill_level_required_int = myc.fetchall()[0][0]

myc.execute("""SELECT skill_level FROM pilot P WHERE P.pilot_id = "{}"; """.format(pilot_id_int))
pilot_skill_level_int = myc.fetchall()[0][0]

#### CHECK FLIGHT REQUIREMENTS ####
req_seat_capacity = num_passengers_int <= plane_seat_capacity_int
req_weight_capacity = sum_passenger_weight_int <= plane_weight_capacity_int
req_pilot_skill = pilot_skill_level_int >= plane_skill_level_required_int

if ((req_seat_capacity == True) & (req_weight_capacity == True) & (req_pilot_skill == True)):
    all_requirements_satisfied = True
else:
    all_requirements_satisfied = False

print("Flight Number: {} \n".format(flight_number))
print("Seat Capacity Requirement Satisfied: {}".format(req_seat_capacity))
print("Number of total passengers: {}".format(num_passengers_int))
print("Plane seat capacity: {} \n".format(plane_seat_capacity_int))
print("Weight Requirement Satisfied: {}".format(req_weight_capacity))
print("Total weight of passengers (lbs): {}".format(sum_passenger_weight_int))
print("Plane weight capacity (lbs): {} \n".format(plane_weight_capacity_int))
print("Pilot Skill Level Requirement Satisfied: {}".format(req_pilot_skill))
print("Pilot skill level: {}".format(pilot_skill_level_int))
print("Plane skill level requires: {} \n".format(plane_skill_level_required_int))

print("RESULT: flight {} is cleared for flight: {}".format(flight_number, all_requirements_satisfied))

```

```
#### END SQL SESSION ####
```

```
mydb.commit()
```

```
mydb.close()
```

Example Output:

```
Flight Number: AABFJFNZATRXXG0
```

```
Seat Capacity Requirement Satisfied: True
```

```
Number of total passengers: 15
```

```
Plane seat capacity: 108
```

```
Weight Requirement Satisfied: True
```

```
Total weight of passengers (lbs): 2003
```

```
Plane weight capacity (lbs): 16200
```

```
Pilot Skill Level Requirement Satisfied: False
```

```
Pilot skill level: 3
```

```
Plane skill level requires: 6
```

```
RESULT: flight AABFJFNZATRXXG0 is cleared for flight: False
```