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Team 75
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CS4400 Project - Phase 2

1. Relational Schema
route = (routeID)

routeContains = (routeID[fk1], legID[fk2], sequence)
Fk1: routeID -> route.routeID, routeID is non-null
Fk2: legID -> leg.legID

flight = (flightID, cost, flightFollows[fk3])
Fk3: flightFollows -> route.routeID, flightFollows is non-null

leg = (legID, distance, departs[fk4], arrives[fk5])
Fk4: departs -> airport.airportID, departs is non-null
Fk5: arrives -> airport.airportID, arrives is non-null

airport = (airportID, airportName, city, state, country, locID[fk6])
Fk6: locID -> location.locID

airline = (airlineID, revenue)

airplane = (airlineID[fk7], tail_num, speed, seat_capacity, locID[fk8])
Fk7: airlineID -> Airline.airlineID
Fk8: locID -> location.locID

supports = (flightID[fk9], airlineID, tail_num[fk10], suppProgress, suppStatus, next_time
Fk9: flightID -> flight.flightID
Fk10: airlineID -> airplane.airlineID, tail_num -> airplane.tail_num

Prop = (airplaneID, tail_num[fk11], props, skids)
Fk11: airplaneID, tail_num -> airplane.airlineID, airplane.tail_num

Jet = (airplaneID, tail_num[fk12], engines)
Fk12: airplaneID, tail_num -> airplane.airlineID, airplane.tail_num

Person = (personID, firstName, lastName, occupies[fk13])
Fk13: occupies -> location.locID, occupies is non-null

passenger = (personID[fk14], funds, miles, occupies[fk15])
Fk14: personID -> Person.personID
Fk15: occupies -> Person.occupies, occupies is non-null

vacation = (passengerID[fk16], destination, sequence)
Fk16: passengerID -> passenger.personID

pilot = (personID[fk17], taxID, experience, occupies[fk18]
Fk17: personID -> Person.personID
Fk18: occupies -> Person.occupies, occupies is non-null

license = (pilotID[fk19], licenseName)
Fk19: pliotID -> Person.personID

2. Unhandled constraints

1) Ensure that every person should be either a pilot or a passenger, not both.
2) Ensure that the airline has one or more airplanes.
3) Ensure that each airplane can be classified as a propeller-driven or jet-driven or experimental airplane. Those categories are mutually exclusive.
4) Ensure that the ‘suppStatus’ value in the ‘supports’ table is either ‘on_ground’ and ‘in_flight’, but not both.
5) Ensure that the ‘suppProgress’ value in the ‘supports’ table is a valid integer between 0 and the number of legs of each flight.
6) Ensure that the ‘next_time’ value in the ‘supports’ table is a valid time.
7) Ensure that the number of pilots are at least one for propeller-driven airplanes and at least two for jet-driven airplanes.
8) Ensure that the pilot’s tax-identifier follows the "*xxx-xx-xxxx*" format.