

Step 1

Flight{ flightID, estDepartTime, actDepartTime, actArriveDateTime, avgSpeed, avgHeight, estDuration, estFuel }

Aircraft{ aircraftID }

Model{ modelID, economySeats, businessSeats, firstClassSeats, cargoCapacity, fuelCapacity, length, wingspan, serviceHours }

Route{ routeID, description }

Location{ airportCode, country, address, phone }

Ticket{ ticketNum, luggageLimit, seatNum, classCode, medicinalCondition, mealChoice }

Customer{ customerID, name, address, country, email, phone, birthdate, passportNum }

Staff{ staffID, name, address, email, phone, passportNum }

Step 2, Weak entities

Service{ serviceDate, aircraftID, description, cost }

Irregular Event{ eventNumber, flightID, eventDateTime, eventDescription }
Route{routeID, *airportCode*}

Step 3 1 to 1 relationships (None)

Step 4 1 to N relationships

Aircraft {aircraftID, *modelID*}

Ticket{ticketNum, luggageLimit, seatNum, classCode, medicinalCondition, mealChoice, *flightID*}

Flight{flightID, estDepartTime, actDepartTime, actArriveDateTime, avgSpeed, avgHeight, estDuration, estFuel, *routeID*}

Route{routeID, *airportCode*}

Route{routeID, *airportCode*}

Ticket{ticketNum, luggageLimit, seatNum, classCode, medicinalCondition, mealChoice, *customerID*, *flightID*}

Step 5 M to N Relationships

ADDITIONAL PILOTS(flightID, staffID)

HOST(flightID, staffID)

STEP 7, no >2 relationships

Step 8A: Multi-relations/Superclasses

Flight: Long/Short haul (disjoint)

Flight{ flightID, estDepartTime, actDepartTime, actArriveDateTime, avgSpeed, avgHeight, estDuration, estFuel, *routeID* }

Short-Haul{ flightID }

Long-Haul{ flightID }

AirCraft: Long/Short haul (disjoint)

Aircrafts{ aircraftID, *modelID* }

Short-Haul aircraft{ AircraftID, mailCargoCapacity }

Long-Haul Aircraft{ AircraftID, numMedPacks, numDefibrillators }

Staff: Pilot/Flight Attendant (overlapping)

Staff{ staffID, name, address, email, phone, passPortNum }

Pilot{ staffID, qualifications, prevsHrsPilotExp }

Flight Attendant{ staffID }

Step 9 Unions

NEACC Member{ memberID (surrogate key), flightGoldPoints }

Customer{ customerID, name, address, country, email, phone, birthday, passportNum }

Staff{ staffID, name, address, email, phone, passportNum }

FINAL STEP

8A, Step 4:

Flight

Short-Haul{ AircraftID, mailCargoCapacity, *aircraftID* }
Long-haul{AircraftID, numMedPacks, numDefibrillators, *aircraftID*}

Staff

Pilot{staffID, qualifications, prevsHrsPilotExp, *flightID* }
flightAttendant{staffID, *flightID*}

STEP 6 multivalued attribute

Pilot(staffID, qualifications, prevsHrsPilotExp, *flightID*, qualifications, prevHrsPilotExp)
pQualifications(staffID, qualifications)

FINAL TABLES

Staff{ staffID, name, address, email, phone, passportNum }
flightAttendant{staffID, *flightID*}
Pilot(staffID, qualifications, prevsHrsPilotExp, *flightID*, qualifications, prevHrsPilotExp)
pQualifications(staffID, qualifications)

Flight{ flightID, estDepartTime, actDepartTime, actArriveDateTime, avgSpeed, avgHeight, estDuration, estFuel, *routeID* }
Short-Haul flight{ AircraftID, mailCargoCapacity, *aircraftID* }
Long-haul flight{AircraftID, numMedPacks, numDefibrillators, *aircraftID*}

Aircrafts{ aircraftID, *modelID* }
Long-Haul Aircraft{AircraftID, numMedPacks, numDefibrillators}
Short-Haul aircraft{AircraftID, mailCargoCapacity}

Service{serviceDate, aircraftID, description, cost}
Irregular Event{eventNumber, flightID, eventDateTime, eventDescription }
Route{routeID, *airportCode* }

Customer{customerID, name, address, country, email, phone, birthday, passportNum}
NEACC Member{ memberID (surrogate key), flightGoldPoints }
Ticket{ticketNum, luggageLimit, seatNum, classCode, medicinalCondition, mealChoice, *customerID*, *flightID*}

HOST(flightID, staffID)
ADDITIONAL PILOTS(flightID, staffID)