

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 }

Step 3 1 to 1 relationships (None)

Step 4 1 to N relationships

Short-haul (flight) { flightID, *aircraftID* } (from short-haul aircraft)

Long-haul (flight) { flightID, *aircraftID* } (from long-haul aircraft)

Aircraft { aircraftID, *modelID* } (from model)

Flight{ flightID, *staffID* }

Flight{ flightID, *staffID* }

Ticket{ ticketNum, *flightID* }

Flight{ flightID, *routeID* }

Route{ routeID, *airportCode* }

Route{ routeID, *airportCode* }

Ticket{ ticketNum, *customerID* }

Step 5 M to N Relationships

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

STEP 6 multivalued attribute

Pilot(staffID, qualifications, prevHrsPilotExp)
pQualifications(staffID, qualifications)

STEP 7, no >2 relationships

Step 8: Multi-relations/Superclasses

Flight: Long/Short haul (disjoint)

Flight{ flightID, estDepartDateTime, actDepartDateTime, actArriveDateTime, avgSpeed, avgHeight, estDuration, estFuel }

Short-Haul{ flightID }

Long-Haul{ flightID }

AirCraft: Long/Short haul (disjoint)

Aircrafts{ aircraftID }

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 (multi-valued), prevsHrsPilotExpt }

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 }