**Class Descriptions**

* Airport
  + An airport is a place from which airlines operate and serves as a physical location where airplanes depart and land.
  + Each airport has a name, location, and FAA-approved abbreviation.
* Area
  + An area is geographical region that is serviced by at least one airport.
  + It is identified by a unique name.
* Plane
  + An airplane is a flying transportation machine that operates from many airports.
  + A plane is made by a specific manufacturer with a specific model number, a tail number assigned by the FAA, and holds a set number of passengers. Some airplanes are given names.
* Flight
  + A flight represents a trip from one location to another location
  + Each flight is arranged to leave a particular airport and return to a different airport, and length of flight.
* Flight Number
  + A flight is represented by a flight number which determines the depart and arrive time.
* Flight Crew
  + A flight crew is staff employed by an airline who work onboard the actual flight.
  + Each flight is assigned to a specific flight crew, so (vice-versa) each flight crew is assigned to a specific flight.
  + A flight crew consists of 1 pilot, 1 co-pilot, 1 navigator, and 2-5 flight attendants according to the number of passengers and airplane holds and the length of the flight.
* Staff
  + A staff member is somebody that works at the airport
  + Each staff has a name, job title, and an indicator of whether or not they’re part of a flight crew.
* Flight Staff
  + the staff who supports the pilot and copilot by working directly on the flight
  + Each flight staff is given an FAA number
* Non Flight Staff
  + the staff who supports the pilot and copilot by working indirectly on the flight
* Amenities
  + Amenities are extra/optional services provided on a flight.
  + Each amenity has a type (pillows, water, blankets, bags) and a price.
* Incident Report
  + An incident report is a record which is filed by a flight crew employee to report an incident that occurred on a flight.
  + The report includes the particular flight, type of incident, description of the incident, the crew member reporting the incident, and any crew member involved in the incident.
* Stopovers
  + Stopovers are cities that are visited during the course of a flight

**Class Associations**

Plane class and Airline class

Each Airline owns one to many Planes

Each Plane is owned by one and only one airline

Airline class and Airport class

Each Airline involves one to many Airline-Airport Relationships.

Each Airline-Airport is involved with one and only one Airline

Each Airport involves one to many Airline-Airport Relationships

Each Airline-Airport is involved with one and only one Airport

Airport class and Area class

Each Airport services one and only one Area

Each Area is serviced by one to many Airports

Airline and Amenities

Each Flight provides zero to many Amenities

Each Amenity is provided by one and only one Airline

Plane and Flight (Plane Flight History)

Each Plane is associated with one to many Plane Flight History.

Each Plane Flight History is associated with one and only one Plane.

Each Flight is associated with one to many Plane Flight History.

Each Plane Flight History is associated with one and only one Plane.

FlightCrew and Flight

Each FlightCrew is assigned to one to many Flights.

Each Flight is assigned one and only one FlightCrew.

FlightCrew and Flight Staff

Each FlightCrew is composed of five to eight Flight Staff

Each Flight Staff is part of one to many FlightCrew

Flight and Airport (double relation : arrive, depart)

Each Flight arrives at one and only one Airport.

Each Airport is arrived by one and only one Flight.

Each Flight departs from one and only one Airport.

Each Airport is departed by one and only one Flight.

Flight and Incident

Each flight is involved with zero to many incidents

Each incident is involved by one and only one flight

Incident and Flight Staff

Each flight staff reports zero to many incident(s)

Each incident is reported by one and only one staff

Incident and Flight Crew

Each Flight Crew is associated with zero to many Incidents

Each Incident is associated with one and only one Flight Crew

Staff class, Flight Staff class and Non-Flight Staff class

Each Staff may be either Flight Staff or Non-Flight Staff

Each Flight Staff is a Staff member

Each Non-Flight Staff is a Staff member

Airline and Flight

Each Airline makes one to many flights

Each flight is made by one and only one Airline

Stopovers and Flight

Each Flight makes zero to many stopovers

Each stopover is made by one and only one Flight

**Class Attribute Descriptions**

al\_name The name of the airline.

al\_HQCity The city where the airline is headquartered.

al\_reach Whether an airline flies domestic/international/local

Airline\_Airport\_Relationship

al\_name (see Airline)

ap\_name (see Airport)

Airport

area\_name (see Area) The city where the Airport serves

ap\_name The name of the airport

ap\_location The address of the airport

ap\_abbrev Airport’s abbreviated name

Area

area\_name The city of a geographical region where airports are

Flight

flightID The surrogate key to uniquely identify the flight

ap\_name\_fliesinto The flight’s arriving airport

ap\_name\_fliesfrom The flight’s departing airport

length How long the flight is (measured in hours)

flight\_num A unique identifier that determines depart and arrive time

depart\_time The time the flight leaves (in starting region)

arrive\_time The time the flight arrives (in ending region)

flightCrewID Identifier of the flight crew staffing the flight

al\_name (see airline) The airline a flight belongs to

weekday Which day of the week that flight is active

Stopovers

flightID The flight that contains this stopover

location The city location of the stopover

Amenities

flightID (see Flight) The Flight that the amenity is provided on

amenity\_type The category of amenity that is offered on the flight

price The price of the amenity

Staff

staffID The surrogate key to uniquely identify the staff member

staff\_firstName First name of the staff member

staff\_lastName Last name of the staff member

NonFlight\_Staff

staffID (see Staff)

nfs\_job The non-flight staff member’s job title

Flight\_Staff

staffID (see Staff)

fs\_job The flight staff member’s job title (either pilot, co-pilot, nav, attendant)

fs\_FAA\_num The FAA assigned number unique to each flight staff

flightCrewID The flight crew the staff member is a part of

Flight\_Crew

flightCrewID The surrogate key that identifies a particular group of flight staff members

Incident

reporter\_staffID (see Flight\_Staff) The flight staff member who filed the report

flightID (see Flight) The flight the incident occurred

incident\_type The category type of the incident

description A more detailed description of the account

involved\_staffID Any other flight staff member involved in the incident

incident\_date The date the incident occurred

Plane

al\_name (see Airline) The airline the plane belongs to

model\_num The plane’s model number

manufacturer The name of the manufacturer that built the plane

capacity The number of passengers a plane can hold

tail\_num Unique FAA-assigned number to identify the plane

plane\_name An optional/informal name of the plane

Plane\_Flight\_History

tail\_num (see Plane) The particular plane associated to this flight history

flightID (see Flight) The particular flight associated to this flight history

flight\_date The date the plane flew this particular flight