

1) Definition:

- **Airline** - an organization providing a regular public service of air transportation on one or more routes.
 - Airline Name: a term used for identification of a company which operates airplanes and provides air transportation services to customers.
 - Flight Type: a category of flight, can be either international or domestic flight.
- **Airplane** - the vehicle used for travel by air typically containing civilian passengers but can also contain products and other types of people with more specific specialties and a flight crew.
 - Manufacturer: company that makes airplanes for sale.
 - Model Number: An aircraft model is an aircraft manufacturer's designation for an aircraft grouping with similar design or style of structure.
 - Passenger Maximum: maximum number of people which an airplane can carry.
 - Tail Number: a number that refers to an identification number painted on an aircraft.
 - Plane Name: a name that company uses to identify an aircraft.
 - yearManufactured: the date and year at which an airplane is made.
- **Airport** - a complex of runways and buildings for the takeoff, landing, and maintenance of civil aircraft, with facilities for passengers.
 - Airport Name: a term used for identification of a takeoff and landing area.
 - FAA-Approved Abbreviation: a shortened form of an aviation word or phrase.
- **Airport-Airlines**: an association class that represents the relationship between airport and airlines.
- **Charge**: demand (an amount) as a price from someone for a service rendered or goods supplied.
 - chargeAmount: an amount of money that you have to pay for a service.
 - chargeType: a type of service that you pay.
- **Charged Flight**: a flight that can be local or domestic
- **City** - a large town where people could live their daily lives.
 - City Name: a term used for identification of a town.
- **Co-Pilot**: a second who controls the aircraft.

- **Crew Members** - the specific employees that belong to the flight crew.
 - FirstName: a personal name given to someone at birth or baptism and used before a family name.
 - LastName: a person's surname or family name.
 - DOB: the date and time at which a person is born.
 - Email: a type of telecommunication between two users using computers.
 - FAANumber: an identified number that a crew member needs to get from the FAA in order to become crew members of a flight.

- **Flight** - a process of flying through the air.
 - Final Departure Time: the actual time at which an airplane takes off from a given point of origin.
 - Final Arrival Time: the actual time at which an airplane lands at a destination.
 - Flight Date: the date and time at which an airplane flies from the origin to the destination.

- **Flight Attendant**: someone whose primary duty is to ensure the safety and comfort of passengers during an airline flight.

- **Flight Crew** - Group of employees that help maintain a flight while it is in the air.
 - Flight Crew Name:

- **Flight Schedule** - the time frame that a flight is meant to fly out in with both a beginning and an end.
 - Departure Time: the time at which a public conveyance is scheduled to depart from a given point of origin.
 - Flight Number: a code for an airline service consisting of two-character airline designator and a 1 to 4 digit number.
 - Arrival Time: the time at which a public conveyance is scheduled to arrive at a destination.

- **Incident Report** - Document containing information about passengers and crew members specifying incidents that occurred while on the flight, could be positive or negative.
 - Incident type: a category of incident that happens during a flight.
 - Severity: a measurement of the impact an incident has on the business.

- **International Flight**: An international flight is a form of commercial flight within civil aviation where the departure and the arrival take place in different countries.

- **Navigator:** a person who directs the route or course of a ship, aircraft, or other form of transportation, especially by using instruments and maps.
- **Pilot:** a person who operates the flying controls of an aircraft.
 - hoursOfExperience: the amount of time that a pilot flies and controls an airplane.
- **State:** a nation or territory considered as an organized political community under one government.
 - State Name: a term used for identification of a territory.

2) Association:

A State contains one to many Cities.

A City is contained by one and only one State.

A City headquarters one to ten Airlines.

An Airline is headquartered in one and only one City.

A City contains one to many Airports.

An Airport is contained by one and only one City.

An Airline contains one to many Airport-Airline.

An Airport-Airline is contained by one and only one Airline.

An Airport contains one to many Airport-Airline.

An Airport-Airline is contained by one and only one Airport.

An Airport sets the arrival for one to many Flight Schedules.

A Flight Schedule has a set arrival at one and only one Airport.

An Airport sets the departure for one to many Flight Schedules.

A Flight Schedule has a set departure at one and only one Airport.

A Flight Schedule is set at one to many Flights.

A Flight is set by one and only one Flight Schedule.

A International flight is/is not a Flight Schedule.

A Flight Schedule is an International Flight.

A chargedFlight has zero to many charge.

A charge had by one and only one chargedFlight

An Airline owns one to many Airplanes.

An Airplane is owned by one and only one Airline.

An Airplane flies one to many Flights.

A Flight is flown by one and only one Airplane.

A Flight Crew works zero to many Flights.

A Flight is worked by one and only one Flight Crew.

Each CrewMember can be a pilot

a pilot is one and only crewmember

Each crew member can be a copilot

A copilot is one and only one crewmember

Each crewmember can be a navigator

A navigator is one and only one crewmember

Each crewmember can be a FlightAttendant

A FlightAttendant is one and only one CrewMember

A Flight Crew is composed of only one pilot

A pilot can be in 0 to 1 Flight Crew

A Flight Crew is composed of only one copilot

A copilot can be in 0 to 1 Flight Crew

A Flight Crew is composed of two to five Flight Attendant

A flight attendant can be in 0 to 1 Flight Crew

A Flight Crew is composed of one navigator

A navigator can be in 0 to 1 Flight Crew

A Crew Member reports zero to many Incident Reports.

An Incident Report is reported by one and only one Crew Member.

A Crew Member is involved in zero to many Incident Reports.

An Incident Report involves one and only one Crew Member.

A Flight contains zero to many Incident Reports.

An Incident Report is contained by one and only one Flight.

An Airline hires one to many Crew Member

A Crew Member is hired by one and only one Airline.