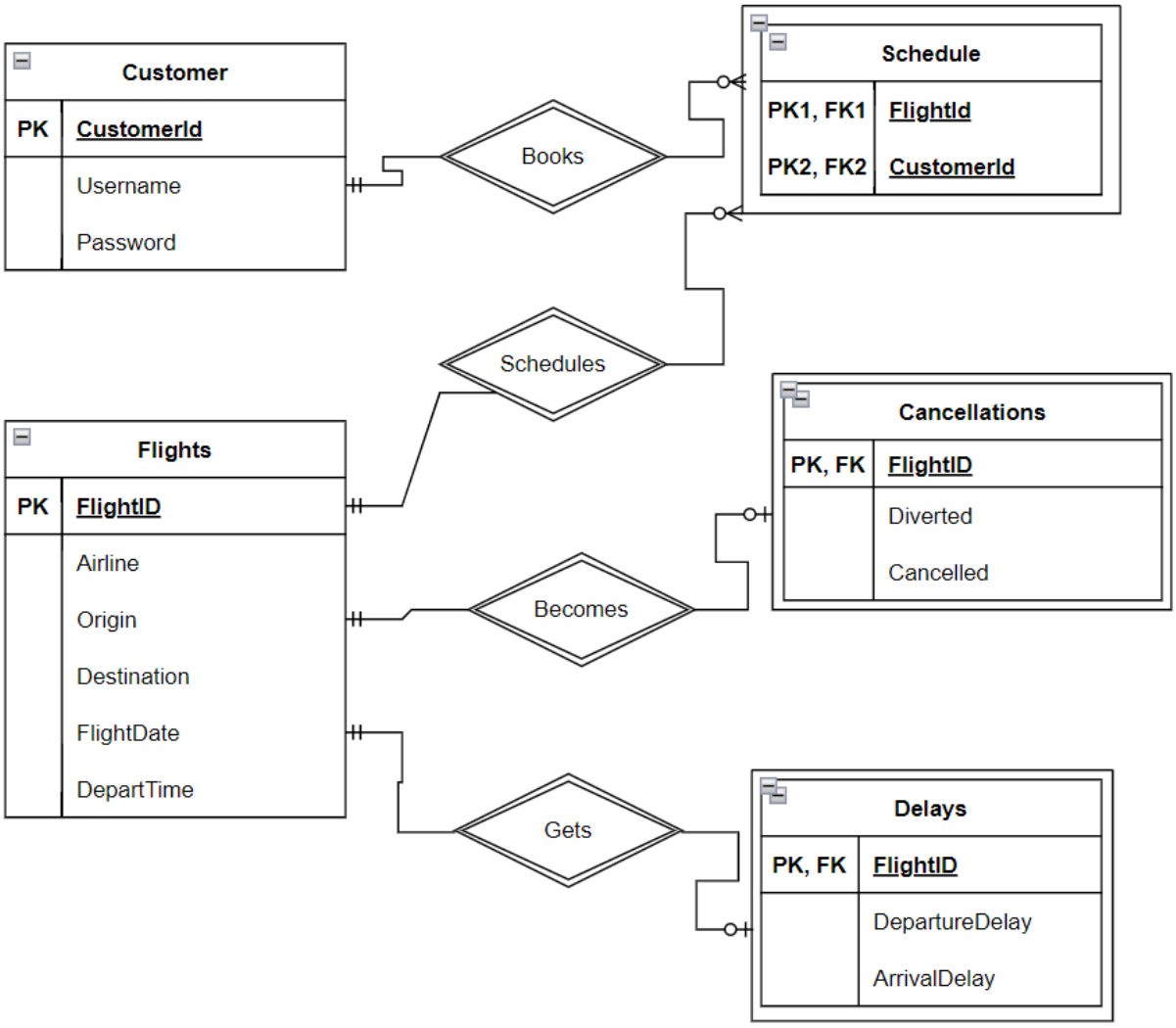
Customer
PK
CustomerId
Username
Password
Books
Schedule
PK1, FK1
FlightId
PK2, FK2
CustomerId
Schedules
Flights
PK
FlightID
Airline
Origin
Destination
FlightDate
DepartTime
Cancellations
PK, FK
FlightID
Diverted
Cancelled
Becomes
Gets
Delays
PK, FK
FlightID
DepartureDelay
ArrivalDelay

Relational Schema:

Customer(CustomerId: INT [PK],
Username: VARCHAR (50),
Password: VARCHAR (25))

Schedule(FlightId: INT [PK, FK to Flights.FlightID],
CustomerId INT [PK, FK to Customer.CustomerID])

Flights(FlightID: INT [PK],
Airline: VARCHAR (50),
Origin: VARCHAR (50),
Destination: VARCHAR (50),
FlightDate: DATE,
DepartTime: INT)

Cancellations (FlightID: INT [PK, FK to Flights.FlightID],
Diverted: BIT,
Canceled: BIT)

Delays(FlightID: INT [PK, FK to Flights.FlightID],
DepartureDelay: INT,
ArrivalDelay: INT)

Assumptions

Entities:

1. **Customer**: Stores customerId and login information.
2. **Schedule**: Stores customers' personal flight information relates customers to flights. A new schedule will be created every time a customer books a flight
3. **Flight**: Stores flight details such as airline, origin, destination, flight date, and departure time for all flights.
4. **Cancellations**: Represents any flight cancellations, and references the Flights table through the foreign key "FlightId". Stores diverted and cancellation information as bits because flights are either diverted or not diverted, canceled or not canceled.
5. **Delays**: Represents any flight delays, and references the Flights table through the foreign key "FlightId". Stores departure/arrival delay times for each flight.

Relations:

1. **Books**: Has a one to many optional relationship between the Customer and Schedule tables because one customer can book any number of schedules.
2. **Schedules**: Has a one to many optional relationship between Flights and Schedules because every flight is associated with any number of schedules (a certain flight can be booked by any number of customers).
3. **Becomes**: Has a one to one optional relationship between the Flights and Cancellation tables because every flight can either be canceled or not canceled.
4. **Gets**: Has a one to one optional relationship between the Flights and Delay tables because every flight can either be delayed or not delayed.