Entitys/Attributes:

Flight (1 plane model, 40 passengers). Attributes : departure_airport_code, arrival_airport_code, year, day, departure_time.

2 Airports/destinations: Lillby, Smallvill. Attributes : airport_code, name, country

Route (1 reservation/direct flight = 1 route). Attributes : departure_airport_code, arrival_airport_code, year, routeprice

Year. Attributes: year, factor

Day. Attributes: year, day, factor

Price. Attributes: routeprice(start, stop), day of week(factor regardless destination), number of bookings, profit expectations (same factor), each seat has same price in the booking.

Reservation: 1 route, several passengers, confirm by issuing a unique and unguessable reservation number, reservation number used to finish booking

Booking: uses reservation number, price calculated, payment, all passengers fullname and passport number, contact passenger phone number and email(added before payment is done), credit card number and holder(not necessarily a passenger), booking confirmed with unique unguessable ticket number used later at the airport.

Seat: free (unpaid), not free (paid)

Overreservations allowed

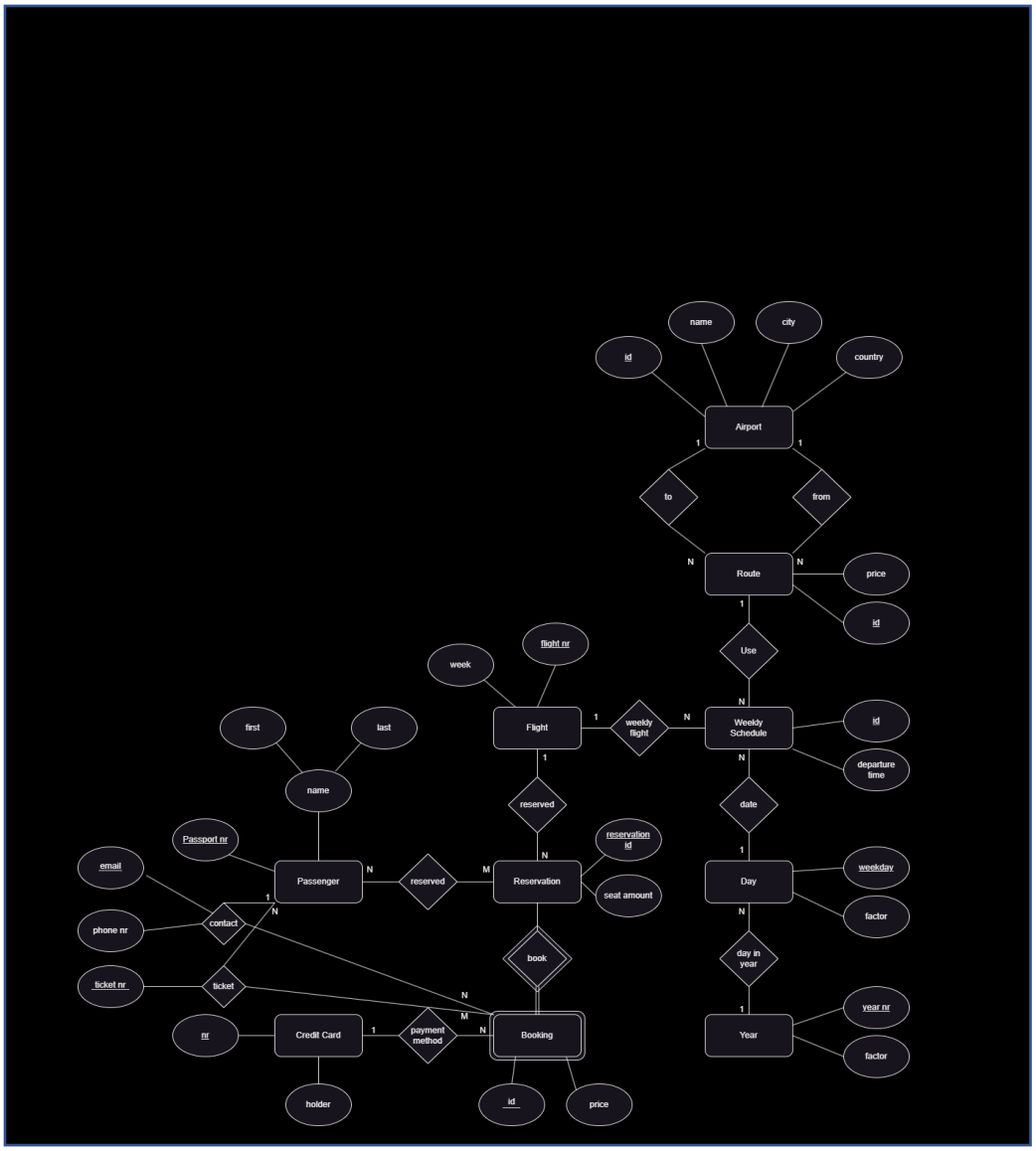
Overbooking not allowed

Not enough reservations -> booking aborted and reservations removed

Attribute Types:

For the database to properly work with the front-end the attributes should be of the following types:

Variable	Type
Year	INTEGER
Day	VARCHAR(10)
Airport code	VARCHAR(3)
Airport name	VARCHAR(30)
Country	VARCHAR(30)
Departure time	TIME
Profitfactor	DOUBLE
Routeprice	DOUBLE
Weekdayfactor	DOUBLE
Flightnumber	INTEGER
Reservation number	INTEGER
Name	VARCHAR(30)
Passport number	INTEGER
Email	VARCHAR(30)
Phone number	BIGINT
Creditcard number	BIGINT



RelationDiagram:

Airport Table:

Functional Dependencies

Id (primary key, candidate key) -> Name, City, Country

BCNF

Route Table:

Id (primary key, candidate key) -> To_airport_city (foreign key Airport.id) -> From_airport_city (foreign key Airport.id), Price

BCNF

Weekly Schedule Table:

Id (primary key, candidate key) -> Day_id (foreign key, Day.weekday), From_airport (fk, Route.From_airport), To_airport (fk, Route.To_airport), Departure time

BCNF

Day Table:

Weekday (primary key, candidate key) -> Year_id (foreign key, year.year_nr), Factor

BCNF, factor is functionally dependent on weekday

Year Table:

Year_nr (prim, candidate) -> Factor

BCNF

Flight Table:

Flight_nr (prim, candidate) -> Weekly_flight (fk, Weekly_schedule.id), Week

BCNF

Reservation Table:

Reservation_id (prim, candidate) -> Flight_nr (fk, Flight.flight_nr), Passenger (fk, Passenger.Passport_nr), Seat amount

BCNF

Passenger Table:

Passport_nr (prim, candidate) -> Reservation_id (fk, Reservation.Reservation_id), First_name, Last_name

transitive dependency (Passport_nr → Reservation_id → Flight_nr), so it's 3NF

Booking Table:

Id (prim, candidate) -> Passenger_id (fk, Passenger.Passport_nr), Reservation_id (fk, Reservation.reservation_id), Payment_method (fk, Credit_card.nr), Price

Contact Table:

Email (prim, candidate) -> Booking_id (fk, Booking.booking_id), Passenger_id (fk, Passenger.Passport_nr), Phone_nr

BCNF

Ticket Table:

Ticket_nr (prim, candidate) -> Passenger_id (fk, Passenger.passport_nr), Booking_id (fk, Booking.id)

BCNF

***Credit_Card* Table:**

Card_nr (prim, candidate) -> Name

BCNF