

Checking for 3NF

Pilot

| <u>StaffID</u> | FirstName | LastName | PassportNo | Adress | Gender | Designation | DateJoined | AirlineTraining Details | AcadamicEducation Details | AircraftModel | FlyingHours | TotalFlying Hours | LegNo | AirlineCode |
|----------------|-----------|----------|------------|--------|--------|-------------|------------|----------------------------|------------------------------|---------------|-------------|----------------------|-------|-------------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Pilot** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **Pilot** is in 3NF.

FlightAttendant

| <u>StaffID</u> | FirstName | LastName | PassportNo | Adress | Gender | Designation | DateJoined | AirlineTrainingDetails | AcadamicEducationDetails | TotalFlyingHours | LegNo | AirlineCode |
|----------------|-----------|----------|------------|--------|--------|-------------|------------|------------------------|--------------------------|------------------|-------|-------------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **FlightAttendant** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **FlightAttendant** is in 3NF.

Passenger

| <u>PassportNo</u> | FirstName | LastName | Gender | Nationality | DOB | PassportIssueDate | PassportExpiryDate | TicketNo |
|-------------------|-----------|----------|--------|-------------|-----|-------------------|--------------------|----------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Passenger** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **Passenger** is in 3NF.

SpecialRequirements

| <u>PassportNo</u> | RequirementDetails |
|-------------------|--------------------|
| FD1 | ↑ |

The table **SpecialRequirements** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **SpecialRequirements** is in 3NF.

Minor

| <u>PassportNo</u> | AcconpanyPassportNumber |
|-------------------|-------------------------|
| FD1 | ↑ |

The table **Minor** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **Minor** is in 3NF.

Arrival

| <u>LegNo</u> | ArrivalTerminalNo | ArrivalTime | BaggageBeltNo | FlightStatus | DateOfFlight | AircrewCheckInTime | AircraftCode | FlightNo |
|--------------|-------------------|-------------|---------------|--------------|--------------|--------------------|--------------|----------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Arrival** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **Arrival** is in 3NF.

Departure

| <u>LegNo</u> | DepartureTerminalNo | GateNo | BoardingTime | DepartureTime | FlightStatus | DateOfFlight | AircrewCheckInTime | AircraftCode | FlightNo |
|--------------|---------------------|--------|--------------|---------------|--------------|--------------|--------------------|--------------|----------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Departure** is in 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depend on the primary key. There's only one functional dependency (FD1) and it's determinant is a super key. Therefore the table **Departure** is in 3NF.

Delayed

| <u>LegNo</u> | Reason | FlightStatus | DateOfFlight | AircrewCheckIn Time | Aircraft Code | FlightNo |
|--------------|--------|--------------|--------------|------------------------|------------------|----------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

Canceled

| <u>LegNo</u> | Reason | FlightStatus | DateOfFlight | AircrewCheckInTime | Aircraft Code | FlightNo |
|--------------|--------|--------------|--------------|--------------------|------------------|----------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The tables **Delayed** and **Canceled** are in 2NF and they do not have any transitive functional dependencies. All the non primary key attributes depends on the primary key. The tables **Delayed** and **Canceled** each has a functional dependency called FD1 and their determinents are a super keys. Therefore the table **Departure** is in 3NF.

Passenger_Contact_No

| <u>PassportNo</u> | <u>ContactNo</u> |
|-------------------|------------------|
| FD1 | ↑ |

The table **Passenger_Contact_No** is in 2NF and it does not have any transitive functional dependencies. The table **Passenger_Contact_No** has a functional dependency called FD1 and it's dependent is a prime attribute. Therefore the table **Passenger_Contact_No** is in 3NF.

Pilot_Contact_No

| <u>StaffID</u> | <u>ContactNo</u> |
|----------------|------------------|
| FD1 | ↑ |

FlightAttendant_Contact_No

| <u>StaffID</u> | <u>ContactNo</u> |
|----------------|------------------|
| FD1 | ↑ |

The tables **Pilot_Contact_No** and **FlightAttendant_Contact_No** are in 2NF and they do not have any transitive functional dependencies. The tables **Pilot_Contact_No** and **FlightAttendant_Contact_No** each has a functional dependency called FD1 and their dependents are prime attributes. Therefore the tables **Pilot_Contact_No** and **FlightAttendant_Contact_No** are in 3NF.