

Checking for 3NF

Pilot

| <u>StaffID</u> | FirstName | LastName | PassportNo | Adress | Gender | Designation | DateJoined | AirlineTrainingDetails | AcademicEducationDetails | AircraftModel | FlyingHours | TotalFlyingHours |
|----------------|-----------|----------|------------|--------|--------|-------------|------------|------------------------|--------------------------|---------------|-------------|------------------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Pilot** is in 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 | AcademicEducationDetails | TotalFlyingHours |
|----------------|-----------|----------|------------|--------|--------|-------------|------------|------------------------|--------------------------|------------------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **FlightAttendant** is in 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 |
|-------------------|-----------|----------|--------|-------------|-----|-------------------|--------------------|
| FD1 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |

The table **Passenger** is in 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 |
|--------------|-------------------|-------------|---------------|
| FD1 | ↑ | ↑ | ↑ |

The table **Arrival** is in 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 |
|--------------|---------------------|--------|--------------|---------------|
| FD1 | ↑ | ↑ | ↑ | ↑ |

The table **Departure** is in 1NF and 2NF and it does not have any transitive functional dependencies and all the non primary key attributes depends 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 |
|--------------|--------|
| FD1 | ↑ |

Canceled

| <u>LegNo</u> | Reason |
|--------------|--------|
| FD1 | ↑ |

The tables **Delayed** and **Canceled** are in 1NF and 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 it's determinant is a super key. Therefore the table **Departure** is in 3NF.

Passenger_Contact_No

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

The table **Passenger_Contact_No** is in 1NF and 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 1NF and 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.

