

Checking for BCNF

Pilot

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

The table **Pilot** is in 3NF. It has a functional dependency FD1 and it's determinant which is StaffID is the super key of the table **Pilot**. Therefore the table **Pilot** is in BCNF.

FlightAttendant

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

The table **FlightAttendant** is in 3NF. It has a functional dependency FD1 and it's determinant which is StaffID is the super key of the table **FlightAttendant**. Therefore the table **FlightAttendant** is in BCNF.

Passenger

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

The table **Passenger** is in 3NF. It has a functional dependency FD1 and it's determinant which is PassportNo is the super key of the table **Passenger**. Therefore the table **Passenger** is in BCNF.

SpecialRequirements

<u>PassportNo</u>	RequirementDetails
FD1	↑

The table **SpecialRequirements** is in 3NF. It has a functional dependency FD1 and it's determinant which is PassportNo is the super key of the table **SpecialRequirements**. Therefore the table **SpecialRequirements** is in BCNF.

Minor

<u>PassportNo</u>	AcconpanyPassportNumber
FD1	↑

The table **Minor** is in 3NF. It has a functional dependency FD1 and it's determinant which is PassportNo is the super key of the table **Minor**. Therefore the table **Minor** is in BCNF.

Arrival

<u>LegNo</u>	ArrivalTerminalNo	ArrivalTime	BaggageBeltNo	FlightStatus	DateOfFlight	AircrewCheckInTime
FD1	↑	↑	↑	↑	↑	↑

The table **Arrival** is in 3NF. It has a functional dependency FD1 and it's determinant which is LegNo is the super key of the table **Arrival**. Therefore the table **Arrival** is in BCNF.

Departure

<u>LegNo</u>	DepartureTerminalNo	GateNo	BoardingTime	DepartureTime	FlightStatus	DateOfFlight	AircrewCheckInTime
FD1	↑	↑	↑	↑	↑	↑	↑

The table **Arrival** is in 3NF. It has a functional dependency FD1 and it's determinant which is LegNo is the super key of the table **Arrival**. Therefore the table **Arrival** is in BCNF.

Delayed

<u>LegNo</u>	Reason	FlightStatus	DateOfFlight	AircrewCheckInTime
FD1	↑	↑	↑	↑

Canceled

<u>LegNo</u>	Reason	FlightStatus	DateOfFlight	AircrewCheckInTime
FD1	↑	↑	↑	↑

The tables **Delayed** and **Canceled** are in 3NF. Each of them has a functional dependency named FD1 and it's determinant which is LegNo is the super key of the tables **Delayed** and **Canceled**. Therefore both tables are in BCNF.

Passenger_Contact_No

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

The table **Passenger_Contact_No** is in 3NF. It has a functional dependency named FD1 but it's determinant is not the super key of the table so the table **Passenger_Contact_No** is not in BCNF. But the table **Passenger_Contact_No** cannot be divided any further so it's not possible to normalise it to BCNF.

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 3NF and each of them has a functional dependency named FD1 but it's determinant is not the super key the table it belongs. Therefore none of the tables are in BCNF. But none of the tables can be divided any further so it's not possible to normalise them to BCNF.