

Checking for BCNF

PilotFlownAircrafts

<u>StaffID</u>	<u>AircraftModel</u>	FlyingHours
FD1		↑

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

FlightAttendant

<u>StaffID</u>	FirstName	LastName	PassportNo	Adress	Gender	Designation	DateJoined	AirlineTrainingDetails	AcademicEducationDetails	TotalFlyingHours	LegNo	AirlineCode
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	TicketNo
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	AircraftCode	FlightNo
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	AircraftCode	FlightNo
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	AircraftCode	FlightNo
FD1						

Canceled

<u>LegNo</u>	Reason	FlightStatus	DateOfFlight	AircrewCheckInTime	AircraftCode	FlightNo
FD1						

The tables **Delayed** and **Canceled** are in 3NF. Each of them has a functional dependency named FD1 and their determinents 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 normalise them to BCNF.