Business Rules and Constraints:

* Flights cannot exceed their maximum capacity
* Each Passenger must have a unique ID
* Each booking must be associated with one passenger and one flight
* Only one passenger with completed check in can be assigned a seat
* Staff can only check in passengers for flights they are assigned to.
* Each passenger must have a unique and not NULL passenger ID
* A passenger can book multiple flights but each separate booking must have a unique booking ID
* Passport numbers will be unique and not NULL
* Valid contact information is required for each passenger
* Booking must be linked to both a valid passenger and a valid flight
* Check-ins must be finalized for each booking XX hours before the flight
* Every flight must have a unique flight ID
* A flight can not be overbooked beyond a plane’s capacity
* A flight status can be either on-time, delayed or canceled
* Each plane must have a unique registration number
* A plane can not be assigned to multiple flights that contradict with each other
* A plane must undergo maintenance after a certain amount of flight hours
* If a plane is under maintenance it can not be assigned to a flight
* All data entries must comply with aviation regulations such as FAA standards
* Flight schedules are updated in real time for both passengers and staff
* If cancelation of a flight occurs, passengers are notified and given rebooking/refund option
* Duplicate bookings are not allowed for the same passenger on the same flight
* Each flight must have an assigned crew
* All data changes must be traceable and recorded

Explanation of Business Rules:

• Business rules within this database are obligatory for a plethora of reasons. Primarily, data

integrity, maintaining customer information is vital for a successful operation as well as

preventing duplicate or conflicting data. These occupational regulations also ensure the quality

management of operations to maintain that they are running efficiently in accordance with FAA

regulations. The overall security is benefited with the use of these directives in addition to

improving customer and employee experience. The final and most major benefit that these

business rules has provided is the ability to analyze data: provide accurate information about

passenger trends and maintenance tracking along with helping management with data driven

dilemmas.