

# Software Requirement Specification (SRS)

## AIR TAXI

### **Introduction**

#### **Purpose**

Airline Reservation System aims to automate the flight operations and ticketing/seat booking and confirmation system of an Airline company. The software is providing options for viewing different flights available within a different timings for a specific day. That provide customers within facility to able to book ticket smoothly. The customers can modify and able to cancel the ticket for any reason. That prepare within a role and policies. The software should provide option for checking availability of the tickets. That is important for the customers to get message if the ticket unavailable. That will be displayed into customers. The customers should be noted when the change has been made or any further changes.

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### **Scope**

The airline booking website is an application stored in the Passenger server. The purpose of the website is to resolve the client to allow website Passengers to perform tasks related to booking an airline flight. The system enables to perform the following functions:

- Automation of flight operations
  - Automation of ticketing/seat booking
  - confirmation system
  - Cancellation
  - Improved and optimized service
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### **Overview**

The remaining section of this document provide a general description including characteristic of the Passengers of this product, the product's hardware, and functional and non-functional requirements of the product.

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# **Overall Description**

## **Problem Statement**

Developing an AIRLINE RESERVATION SYSTEM-ARS for an air line company that want to automate its flight operations and ticketing/seat booking and confirmation system.

## **Existing System**

Before the automation the system suffered from following DRAWBACKS:

- Existing system is highly manual and involves a lot of paper work and calculation and therefore may be erroneous. This lead to inconsistency and inaccuracy.
- The data may be lost, stolen or destroyed because it is stored on paper
- The existing system consumes a lot of time causing inconveniencing to customers and the staff
- Its difficult to update, delete, or view the data due its manual nature.
- Increasing number of passengers leads to difficulty in maintaining and retrieving details.

## **Proposed System**

The ARS is proposed with the following.

- The computerization of the reservation system will reduce a lot of paperwork and hence load on the hence the load on airline admin and staff.
- The machine will perform all calculations. Hence chances of error are nearer to nil.
- The passenger, reservation, cancellation list can be easily retrieved and any required addition, deletion, updation can be performed easily and fast.
- Proper way of confirmation of bookings etc.

## **Product Functions**

Passengers with varying levels of familiarity with computers will mostly use this system. With this on mind, an important feature of this software is that it will be relatively simple to use. The scope of this product encompasses:

**SEARCH:** This function allows the Passenger to search for airplanes and ticket's availability between two cities, i.e departure city and arrival city, the date of departure, preferred time and number of passengers.

**SELECTION:** This function allows a particular airplane to be selected from the displayed list.

All details such as:

- airplane number
- Date, time and place of departure
- Date, time and place of arrival
- Fare per head etc.

**Review:** If seats are available, then system prompts for the booking. All the information including total fare with taxes and flight details are reviewed.

**Traveler Information:** The details of all passengers supposed to travel including name, address, contact number, email etc.

**Payment:** It asks the agent to enter the various credit card details of the person making reservation i.e.

- Credit card type
- Credit card number
- Expiration date of the card.
- The name on card etc.

**Cancellation:** The system allows the passenger to cancel a reservation and register the information regarding his/her ticket. It includes Confirmation no, name, date of journey, fare deducted.

## **Passenger Characteristics**

### **Passenger requirements**

- Passenger properties like Name, Address, Age,
- Associated with Flight Miles accumulated and Credit Card information.
- Flight properties like Departing/Arriving City, Departure/Arrival dates and times, Miles, and an identifying Flight Number.
- Flight Seat properties of identifying seat number, reserved and flight Associated to Flight by flight number.

## **Constraints**

- The system is a web base, so it will run on a web browser i.e Chrome, Firefox etc.
- The system will run under any OS with internet functionality.

## **Requirement Specification**

This section highlights the functional requirements, non-functional requirements and other requirements.

### **Functional requirements**

- **Administrator-**

- Admin can add a new airplane information.
- Admin can managing the booking of airplane.
- Admin can view all Flight details.
- Admin can also edit the information of passengers.
- Admin can cancel the booking.
- Admin view Feedback received from customer or passenger.
- Database Management: Control the database and keep track of all the records of passengers and flight details.

- **Passenger –**

- Passenger can book the flight according to their requirement. If the flight is available.
- passengers will see the history of what time the flight is and where it is from.
- Passenger can also delete the booking.
- passenger also can check the flight on that route by providing the starting location and destination and book ticket accordingly.
- Provide Feedback/Rating: Can give feedback/rating for that particular flight and their staff.

- **Visitors (Unregistered people)-**

- Visiting the Site: Can only visit the site and view Vacation plans and also see the next schedule flight in advance.
- Register (if need to book flight)

- **Module Specification –**

- Registration and creation of user profile.
- Checking Availability.
- Making Reservations/Blocking/Confirmation.
- Confirm Ticket.
- Reschedule Ticket.
- Cancellation.

- Update Profile.
- View Ticket Status.
- Query Flight Details.

### **Performance requirements**

- Passenger Satisfaction: The system is such that it stands up to the Passenger expectations.
- Response Time: The response of all operations is good.
- Error Handling: Response to Passenger errors and undesired situation has been taken care of to ensure that the system operates without halting.
- Safety and Robustness: The system is able to avoid or tackle disastrous action. In other words it should be fool proof.
- Portable: The software should not be architecture specific. It should be easily transferable to other platforms if needed.
- Passenger Friendliness: The system is easy to learn and understand. A native Passenger can also use the system effectively, without any difficulties.

### **Hardware Requirements.**

For the hardware requirements like memory restrictions, cache size, the processor, RAM size etc... those are required for the software to run.

### **PREFERRED HARDWARE REQUIREMENTS**

- Processor Core i3
- Hard Disk Drive 500 GB
- RAM 4 GB

### **Software Requirements**

Any window based operating system with DOS support are primary requirements for software development. Windows 7 and up are required. The system must be connected via LAN and connection to internet is mandatory.

## **Non-functional requirements**

### **Performance**

- Response time of the Airline Reservation System should be less than 2 second most of the time. Response time refers to the waiting time while the system accesses, queries and retrieves the information from the databases (DB-user, DB-schedule etc) (A local

copy of flight schedule database is maintained as DB-schedule to reduce this access time)

- ARS shall be able to handle at least 1000 transactions/inquiries per second.
- ARS shall show no visible deterioration in response time as the number of users or flight schedule data increases

### **Reliability**

- ARS shall be available 24 hours a day, 7 days a week
- ARS shall always provide real time information about flight availability information.
- ARS shall be robust enough to have a high degree of fault tolerance. For example, if the user enters a negative number of passengers or a value too large, the system should not crash and shall identify the invalid input and produce a suitable error message.
- ARS shall be able to recover from hardware failures, power failures and other natural catastrophes and rollback the databases to their most recent valid state.

### **Usability**

- ARS shall provide a easy-to-use graphical interface similar to other existing reservation system so that the users do not have to learn a new style of interaction.
- The web interface should be intuitive and easily navigable Users should be able to understand the menu and options provided by ARS.
- Any notification or error messages generated by ARS shall be clear, succinct, polite and free of jargon.

### **Integrity**

- Only system administer has the right to change system parameters, such as pricing policy etc. The system should be secure and must use encryption to protect the databases.
- Users need to be authenticated before having access to any personal data.

### **Interoperability**

- ARS shall minimize the effort required to couple it to another system, such as flight schedule database system.

## Table Structure:

```
mysql> desc airline;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
airline_name	varchar(30)	YES		NULL	
airline_no	varchar(30)	YES	UNI	NULL	
arrival_date	date	YES		NULL	
arrival_time	time	YES		NULL	
available_seats	int	NO		NULL	
business_fare	double	NO		NULL	
capacity	int	NO		NULL	
departure_date	date	YES		NULL	
departure_time	time	YES		NULL	
economy_fare	double	NO		NULL	
from_city	varchar(30)	YES		NULL	
to_city	varchar(30)	YES		NULL	

```
13 rows in set (0.03 sec)
```

```
mysql> desc cities;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
city	varchar(255)	YES		NULL	

```
2 rows in set (0.00 sec)
```

```
mysql> desc passengers;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
gender	varchar(255)	YES		NULL	
passenger_age	int	NO		NULL	
passenger_name	varchar(30)	YES		NULL	
passenger_type	varchar(255)	YES		NULL	
seat_number	int	NO		NULL	
booking_id	int	YES	MUL	NULL	

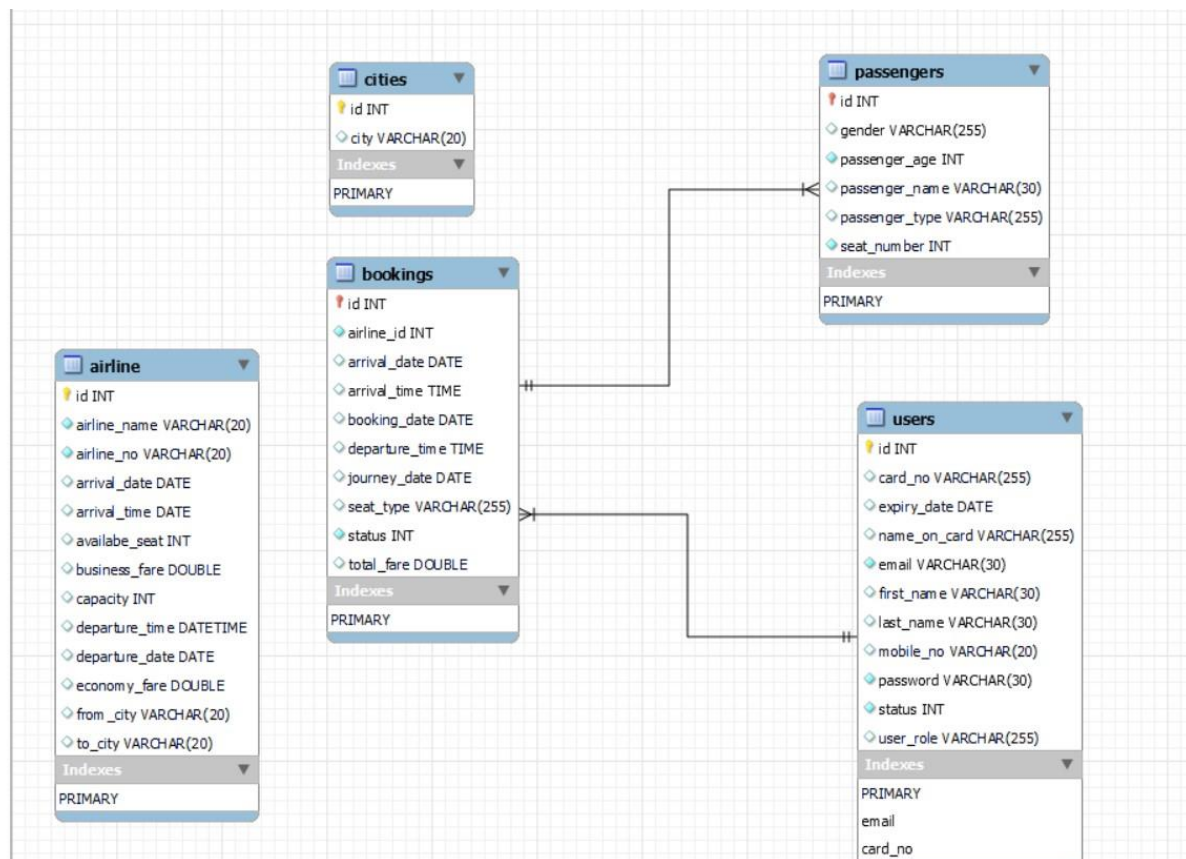
```
7 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> desc users;
```

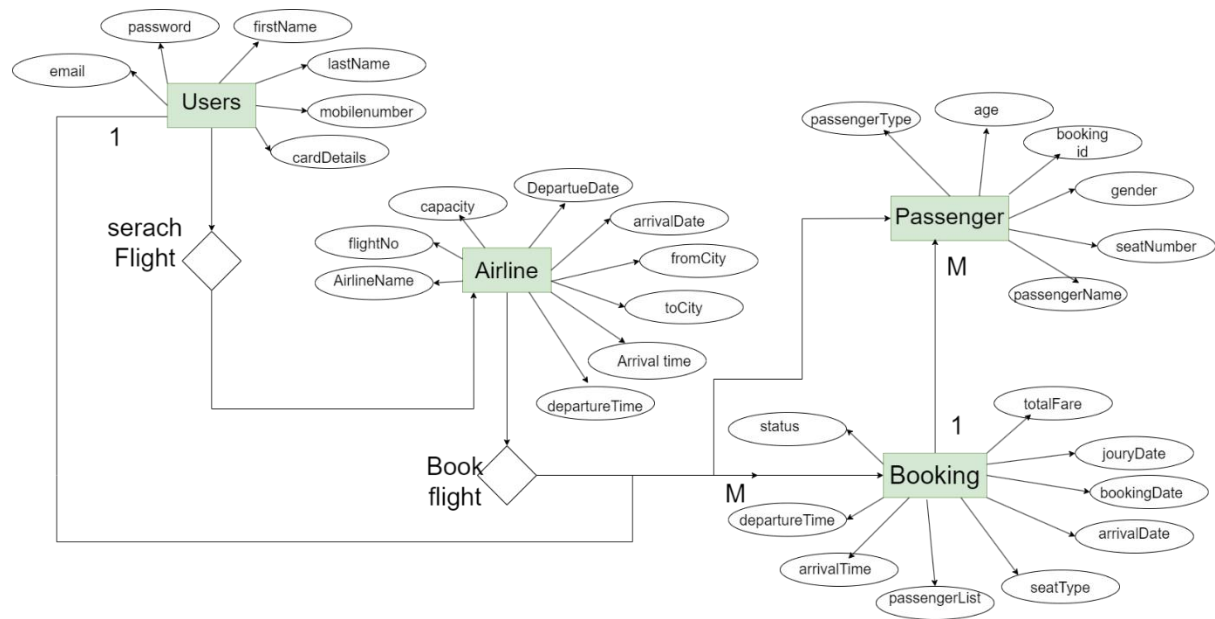
Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
card_number	varchar(255)	YES	UNI	NULL	
expiry_date	date	YES		NULL	
name_on_card	varchar(255)	YES		NULL	
email	varchar(30)	NO	UNI	NULL	
first_name	varchar(30)	YES		NULL	
last_name	varchar(30)	YES		NULL	
mobile_no	varchar(15)	YES		NULL	
password	varchar(30)	NO		NULL	
status	int	NO		NULL	
user_role	varchar(255)	YES		NULL	

11 rows in set (0.00 sec)

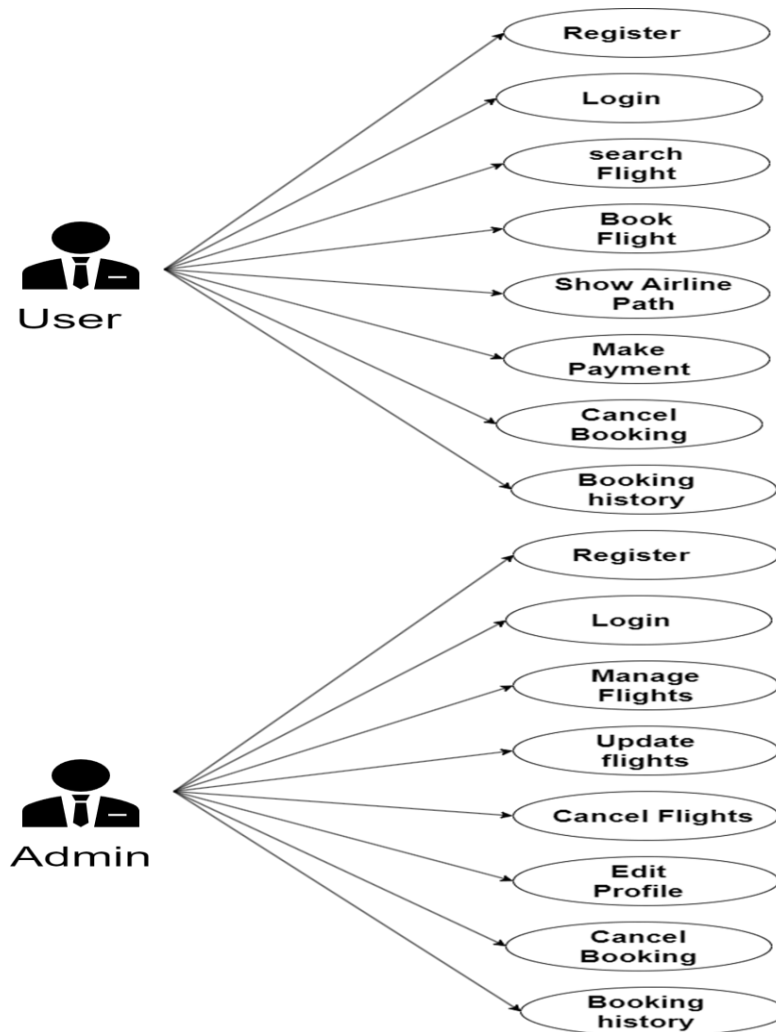




## ER Diagram



## UserCase Diagram

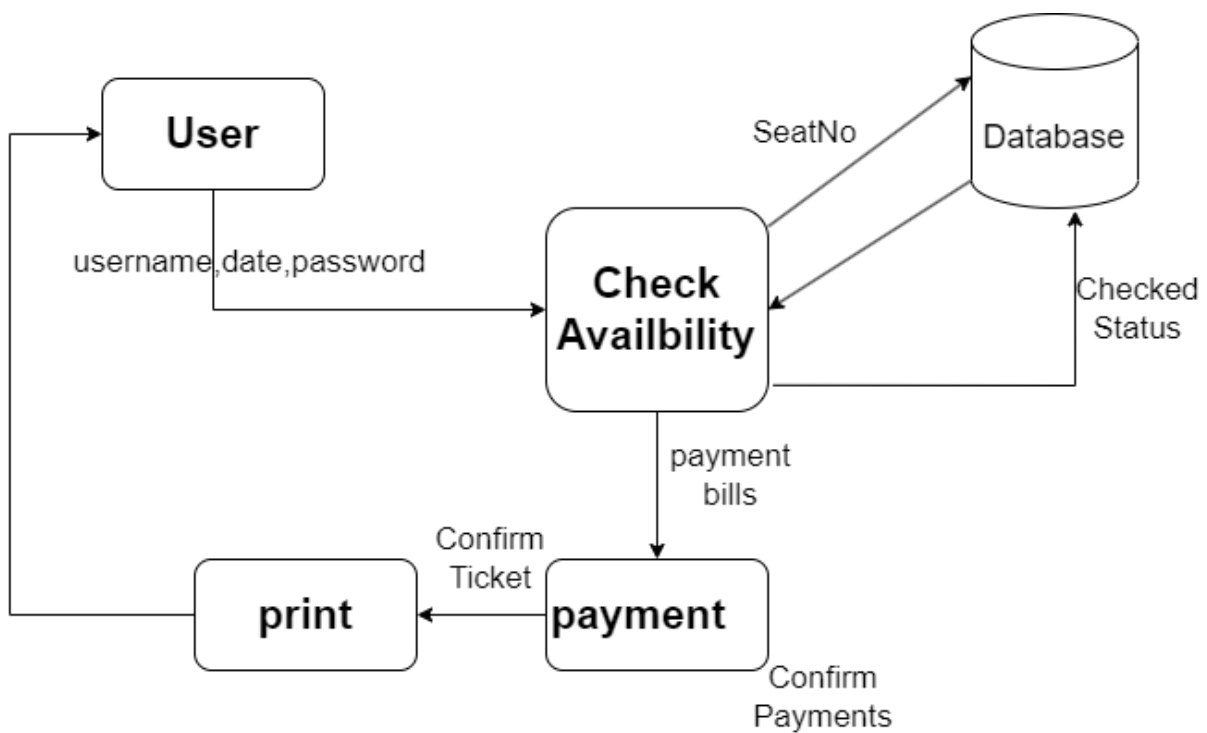


## DFD Diagram

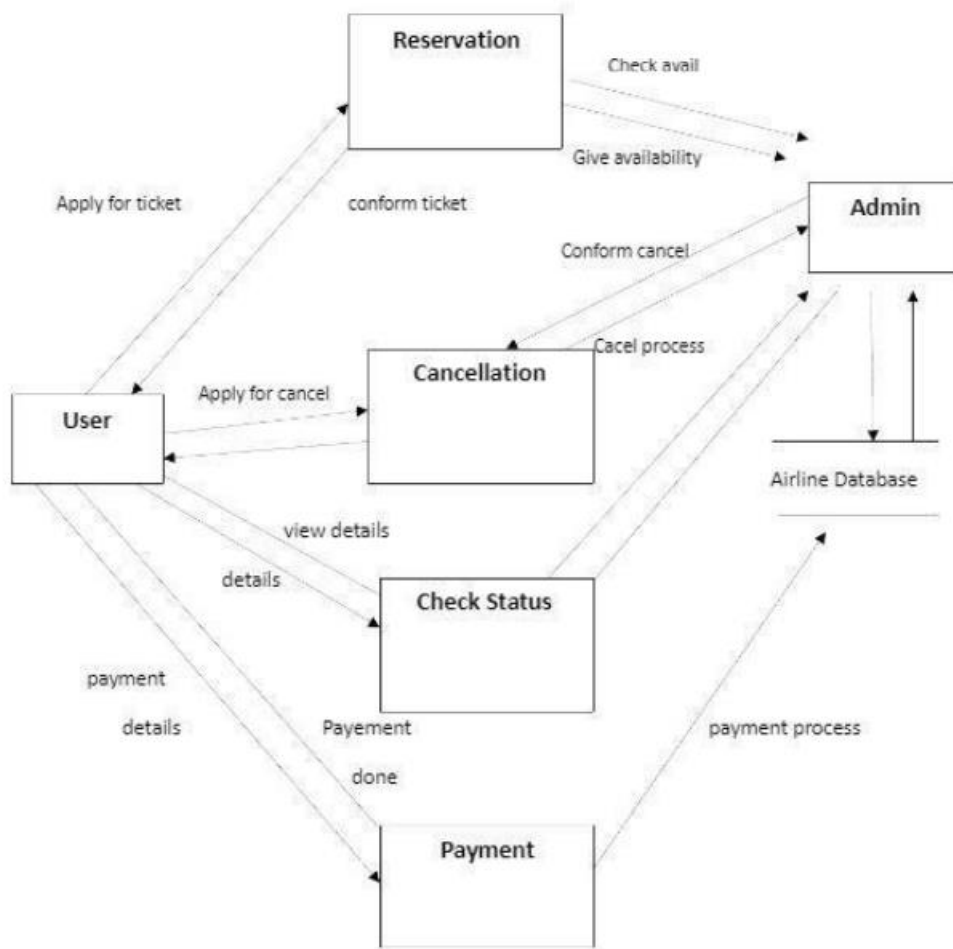
0 level



1 level

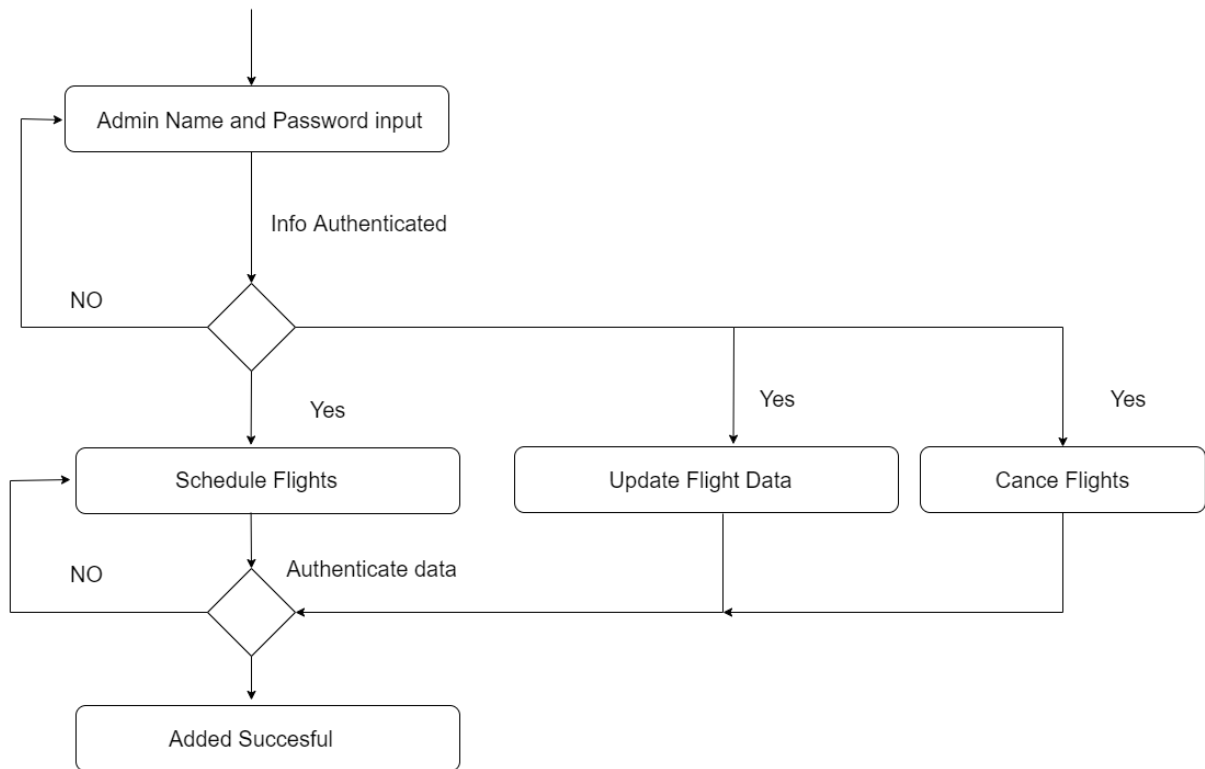


2 level

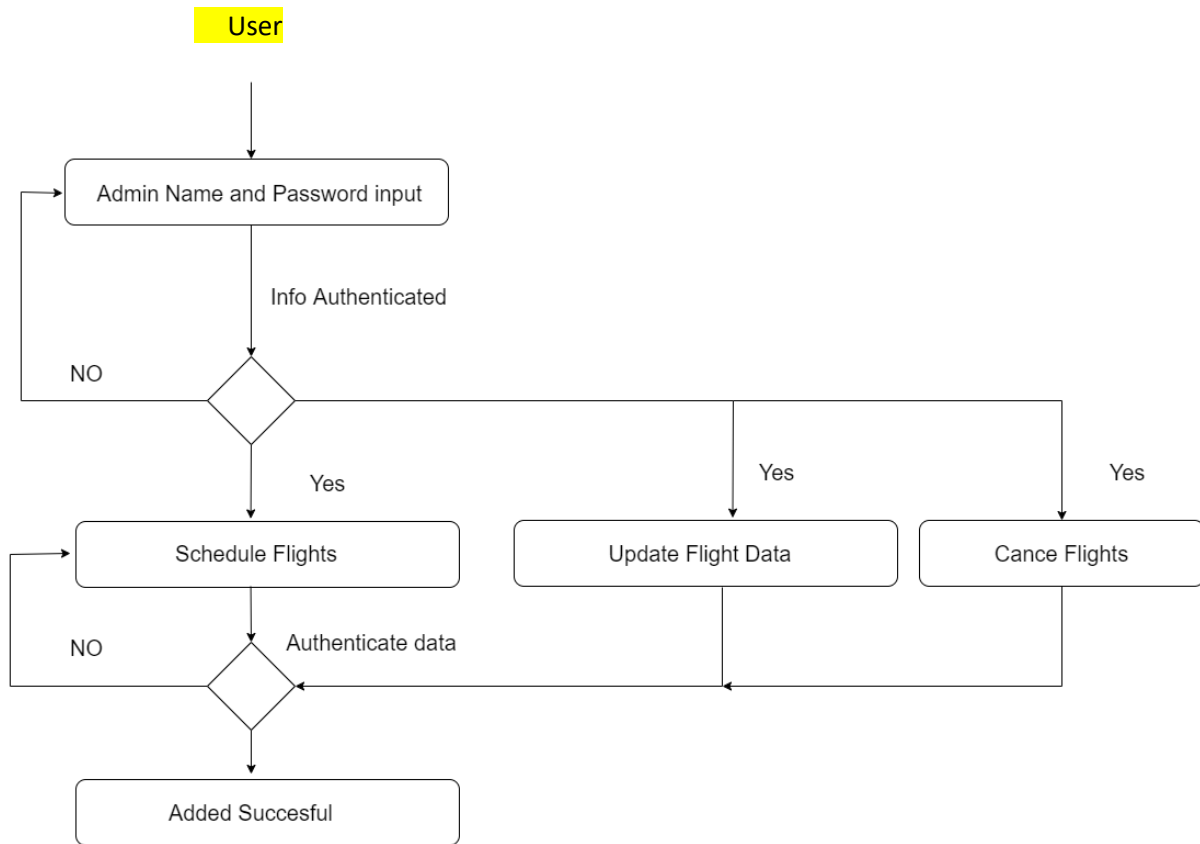


## Activity Diagram

**Admin**



## Activity Diagram



## Future Requirements

- Support for waiting list functionality
- ARS shall be made more flexible in ticket reservation handling, and shall accept waiting list for reservation. The waiting list handling capability of ARS shall be made more advanced, by enabling it to send requests to the Flight Scheduler to schedule extra flights, depending on the demand in a particular corridor, and providing the wait listed passengers with a new flight.
- The telephonic interface of the ARS shall be improved to support more functionality like allowing the customers to cancel a ticket etc., by incorporating security measures.
- ARS shall be made more dynamic and helpful to the users by enabling it to send instant messages to the passengers, of a cancelled or rescheduled flight, through email, phone, Fax etc., informing them about the change, and providing them with other feasible alternatives.
- Information about the kind of meals served in a flight and the type of entertainment offered on a flight should be incorporated into the system. Provide service integration with auto rental agencies and hotel chains.
- Interface for the travel agents shall be provided in the future versions with additional features like informing them of any availability of seats on a flight which was earlier booked to capacity.
- Choices like aisle or window seats shall be provided to the users.

- The ARS shall be able to handle the situation where flight services are available to multiple airports in a single city.