

AIRLINE RESERVATION SYSTEM

Project Report

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In partial fulfilment of the requirements for the award of
BACHELOR OF SCIENCE IN COMPUTER SCIENCE (HI)
By
University Of Kerala

NISH

DEPARTMENT OF COMPUTER SCIENCE
NATIONAL INSTITUTE OF SPEECH & HEARING

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DEPARTMENT OF COMPUTER SCIENCE
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CERTIFICATE

*This is to certify that the project work entitled **Airline Reservation System** is a bonafide record of the work done by **Mr Sujith.V, Register No: 16114163030**, student of National Institute of Speech & Hearing, Sreekaryam P O, Thiruvananthapuram from July 2014 to June 2018, towards the partial fulfilment of the requirements for the award of **BSc (Computer Science) (HI)** from University of Kerala.*

Head of Department

Guide

Examiner

Date

ACKNOWLEDGEMENT

I would like to express my deepest appreciation to NISH for providing me the facilities to undertake and complete this project.

I hereby acknowledge my science gratitude to **Dr Samuel N Mathew**, Executive Director, NISH for giving me an opportunity to undergo the Degree Course and to undertake this project work successfully.

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Last but not least, many thanks to all the Faculty members and the Lab assistants of Department of Computer Science, NISH for their comments and advices.

Sujith.V

ABSTRACT

Airline reservation System is a computerized system used to store and retrieve information and conduct transactions related to air travel. The project aimed at exposing the relevance and importance of Airline Reservation Systems. This web application is convenient for the customers to book the flights and reserve tickets at the click of a mouse.

This software has two parts. First is user part and the second one is the administrator part. User part is used by customers to book and cancel tickets, view flight schedules, search for flights etc. Administrator part is used by airline authority. Administrator approves booking and cancellation of tickets, add/delete flights, view customer details, sends mail to customers regarding booking of tickets etc.

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Chapter 1

INTRODUCTION

1.1 BACKGROUND

The topic of my project is Airline Reservation System. It is an online web application which is helpful for customers to book flight tickets at the click of a mouse. Online Airline Reservation System deals with the various activities related to the Flights.

In this site, customers have to sign up and login with their username and password to search for flights and book tickets. Once, the administrator approves the ticket, ticket details will be send to the email id of customer. Flight are booked through Flight Reservation Module in which all the details regarding customer and his flight are entered. A unique receipt no is provided to every customer with the help of it, cancellation of flight can be done if necessary.

1.2 OBJECTIVE

Airline Reservation System is an online web application which contains the details about flight schedules, passenger reservations, approval of tickets and ticket records. It is used to store and retrieve information and conduct transactions related to air travel. This web application mainly deals with customers booking and cancelling of flight in the airlines.

Chapter 2

SOFTWARE REQUIREMENTS SPECIFICATION

The software requirements specification (SRS) is a document that lists out functional and non-functional requirements. SRS gives the complete description about how the system is expected to perform. SRS is a signed agreement between customers and Software Company on what the software product is to do. Software requirements specification should be correct, accurate, complete, efficient, and of high quality.

Structure of Software Requirements Specification

An SRS shall have

- Purpose
- Description
- Requirements
- Design Models
- Others

2.1 PURPOSE

The purpose of airline reservation system project is to build an online web application to manage the activities on an Airline system.

2.2 SCOPE

The scope of airline reservation system makes the life of passengers easy as they don't need to stand in queues for getting their seats reserved and they can easily make reservations on any airline just from a single system.

2.3 Feasibility Study

- A feasibility study is done by a company when they want to know whether a project is possible.
- It checks if the new project should be accepted.
- To find out if a company has enough money for the project
- To find out if the new product being created will sell
- Or to see if there are enough human resources (employees) to do the project.
- A Feasibility Study determines if a project is worth doing.

Once it has been determined that a project is feasible, the analyst can start preparing the project specifications.

There are 3 types of feasibility study.

1. Technical Feasibility

Does the company have the technological resources (software, databases, etc.) to do the project?

If a new technology is needed, can it be developed?

2. Economic Feasibility

Does the company have the finances or money to complete the project?

Will the company get profits in creating the system?

Are the costs of not creating the system so great that it is advisable to undertake the project?

3. Operational Feasibility

This measures how well the Software will work after it is finished.

How people (users) will feel about it?

2.3.1 Hardware Specification

Processor	:	Intel i3
RAM	:	4GB
Hard Disk	:	1TB
Screen Resolution	:	1366 x 768 pixels

2.3.2 Software Specification

Operating System	:	Windows 8.1
Platform	:	Visual studio 2010
Language	:	ASP.Net with C#
Backend	:	MySQL Workbench 6.3
User interface design	:	Adobe Photoshop CS5

2.4 System Analysis

Software requirements are gathered.

Meetings are held to determine the requirements like;

Who is going to use the system?

How will they use the system?

What data should be input into the system?

What data should be output by the system?

These requirements are then analysed for their validity.

Both functional and non-functional requirements are specified.

Finally, a Software Requirement Specification (SRS) document is created.

2.4.1 Fact Finding Techniques

Fact finding means learning as much as possible about the present system. To do fact finding, the analyst does the following:

1. Interviews people
 2. Prepares questionnaires
 3. Observes the current system
 4. Gathers forms and documents currently in use
 5. Determines the flow of data through the system
- Discussed with my guide and made a plan on the flow of project.
 - Gathered more information on airline reservation system by visiting the following sites.
 - <https://www.youtube.com/watch?v=VcxAsrNFEaolI>
 - <https://www.youtube.com/watch?v=FC-d4eTHzsc>

2.4.2 Description: Modules

The three main modules of this project are

- a) User
- b) Administrator
- c) Passenger

Homepage has the following menu

- Home

- Flight ticket – Book/Cancel tickets
- Contact

User module

- A user can visit the site and search for flight schedule, search for flights.
- He has to register to book flight ticket.
- After registering, the customer can login to his/her own account and book his tickets.

Administrator module

It is provided for the sake of administrators to manage the site and update the content at regular intervals.

Admin can manage the following.

Add flight details:

Admin can add flight details and view them.

View flight details:

He can view the details of flights.

Ticket approval:

Admin has to approve when a user books or cancels his ticket.

Flight cancellation:

Admin has to notify about flight cancellation to customer who has booked tickets by sending mail.

Passenger module

- Once registered, the customer can book or cancel his tickets if needed.
- Customer can do the following:

Book a ticket:

The customer can search for the flights available and reserve his place on the flight by purchasing a ticket.

Flight schedule:

Customer can view details of all flights with their seat availability.

Payment:

A customer can make payment for his ticket.

2.4.3 Requirements: Functional & Non-Functional

Functional requirement

A customer can login, search for flights and book his ticket. He gets his booking details over mail.

Non-Functional requirement

How many people can log into system at same time.

Number of people who can use this website on one day.

The software will run on all browsers

2.5 Project Scheduling

SI_No	Activity	Start date	End date
1	Project topic finalization & proposal submission	20-01-2018	22-01-2018
2	Project proposal presentation	22-01-2018	24-01-2018
3	Screen design & software requirements	24-01-2018	23-02-2018
4	DFD, ER diagram & part of coding should be completed	23-02-2018	04-04-2018
5	Project coding & project report should be fully completed	04-04-2018	09-05-2018
6	Draft report to be submitted by students to respective Guide	09-05-2018	15-05-2018
7	Project submission date & viva-voce	15-05-2018	22-05-2018
8	Submission of project report	22-05-2018	23-05-2018
10	Project presentation	23-05-2018	24-05-2018

2.5.1 Gantt Chart

Gantt charts are useful for planning and scheduling projects. They help you assess how long a project should take, determine the resources needed, and plan the order in which you'll complete tasks.

Gantt charts are horizontal bar charts.

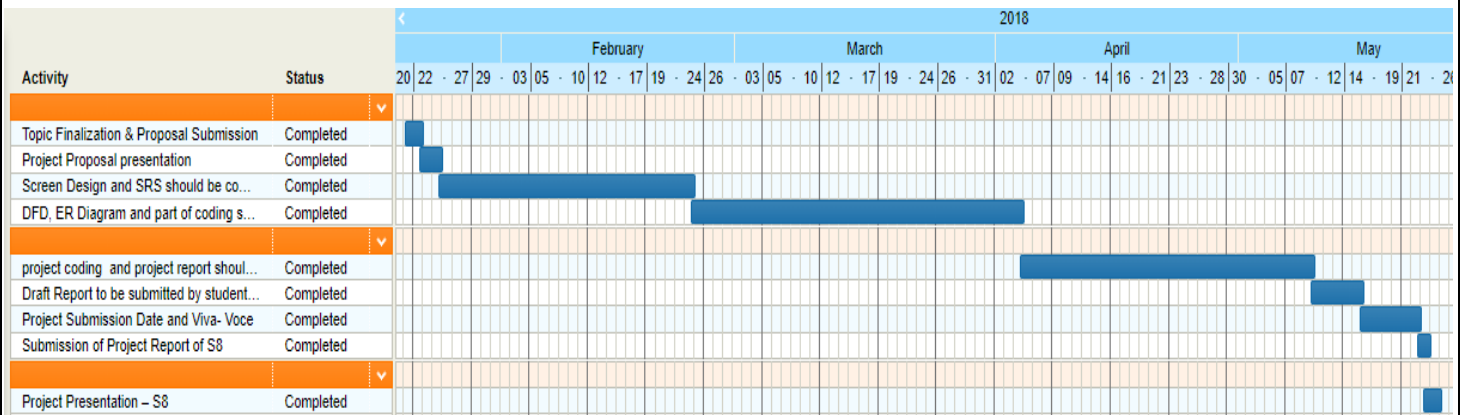
A Gantt chart is a visual view of tasks scheduled over time.

They are a useful way of showing what work is scheduled to be done on a specific day.

They also show the start and end dates of a project in one simple view.

Time is generally on the horizontal axis and the activities are arranged vertically, from top to bottom, in the order of their start dates.

Gantt charts are used to report progress.



2.6 System Design

The software design is prepared from Software Requirements Specification.

Software design includes

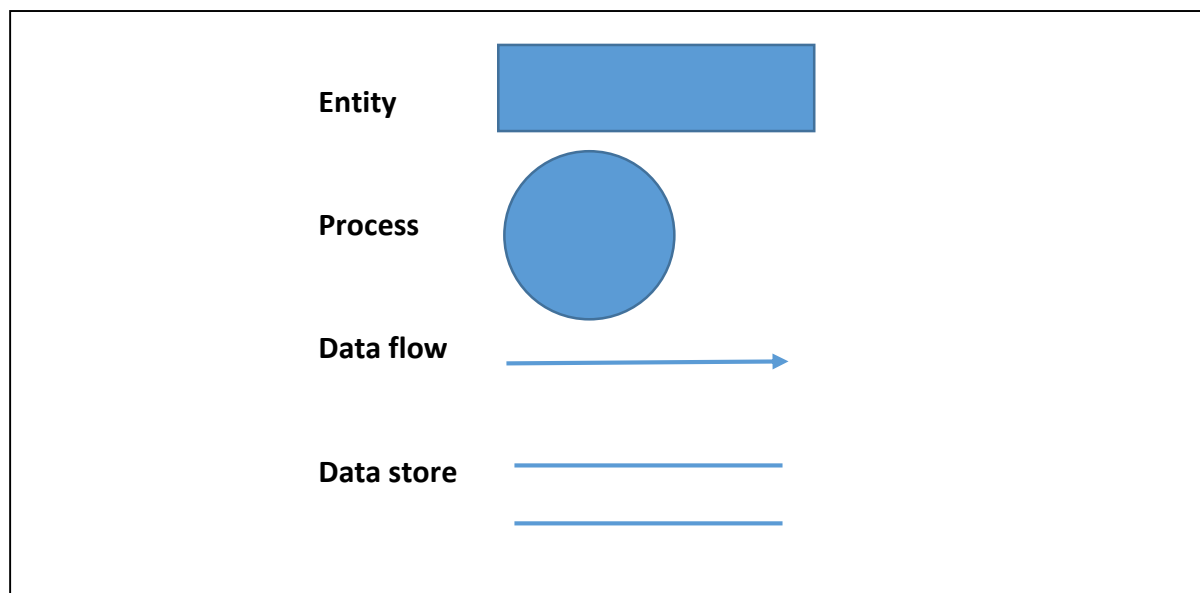
- DED
- ER Diagram
- Database Screen
- Screen design

2.6.1 Data Flow Diagram (DFD)

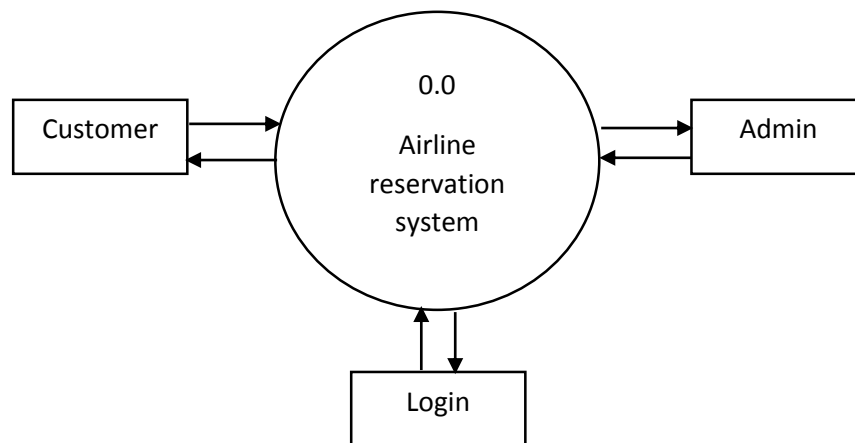
A data flow diagram (or DFD) is a graphical representation of the flow of data through a system.

It shows how information is input to and output from the system, and where that information is stored.

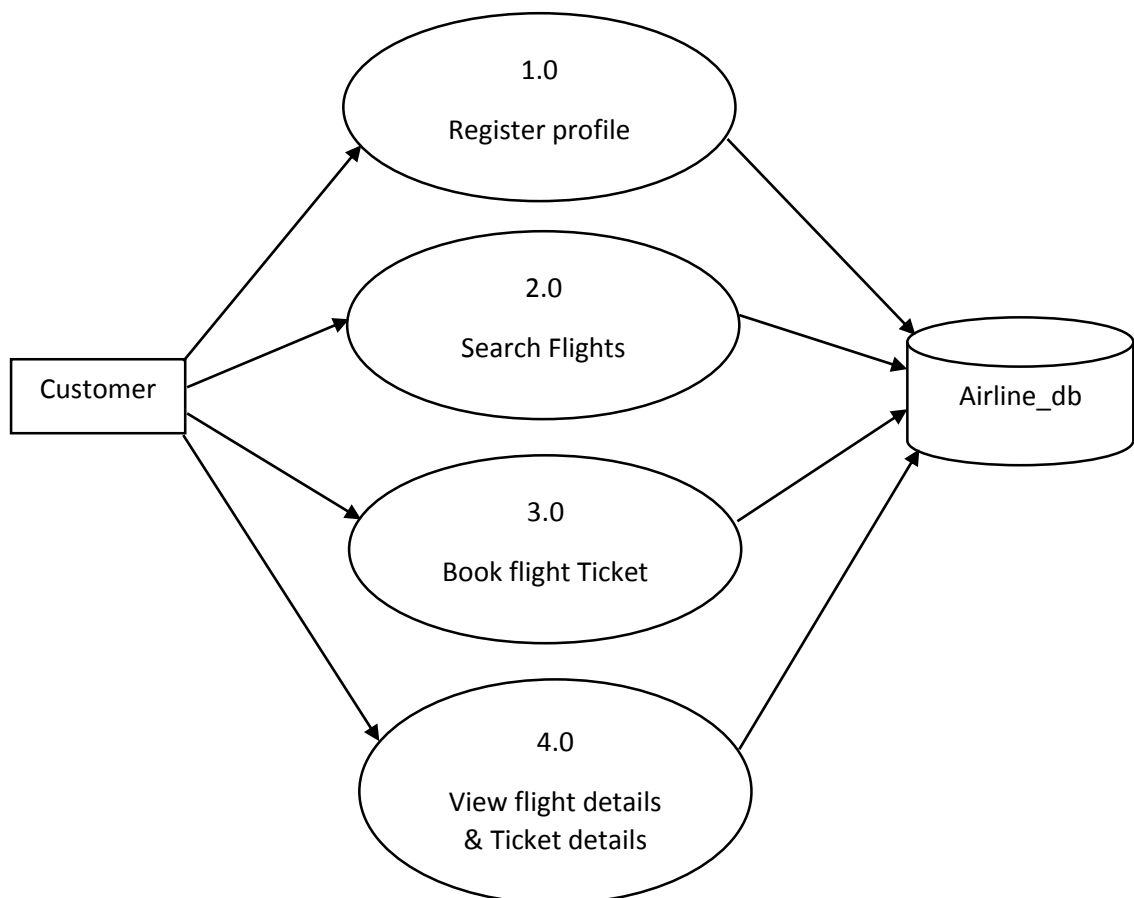
- External entity - rectangle
- Process - oval or circle
- Data flow - arrow
- Data store - open-ended rectangles



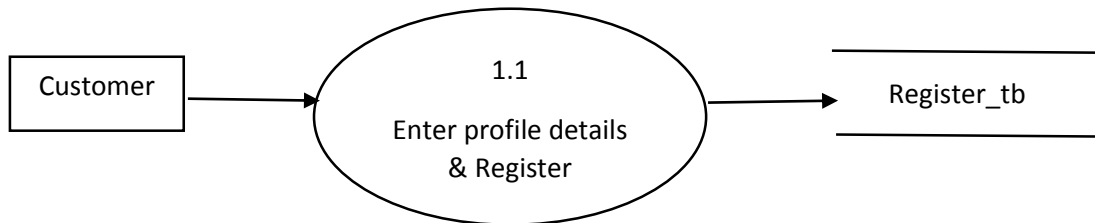
Level 0



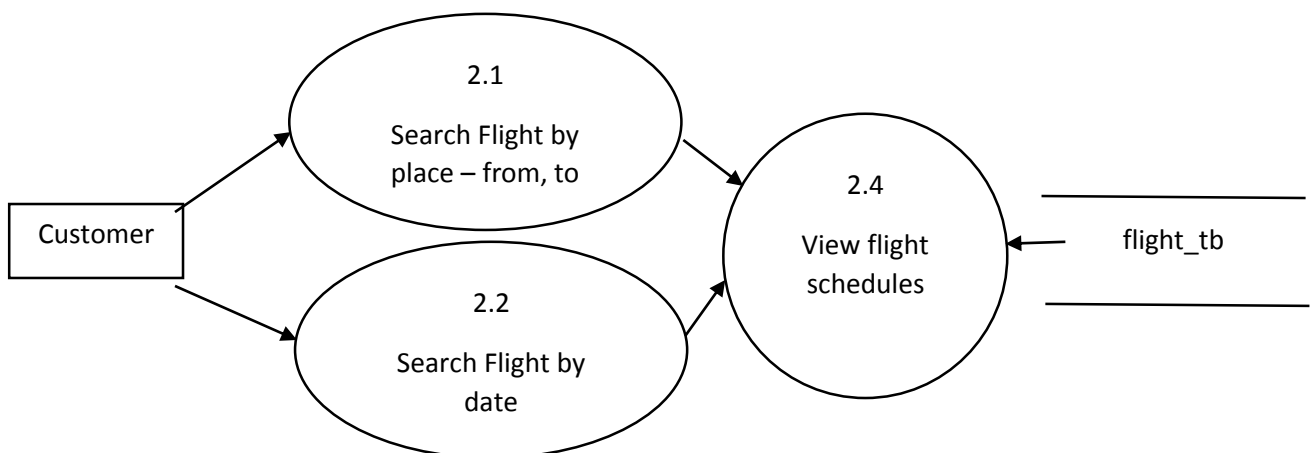
Level 1- Customer



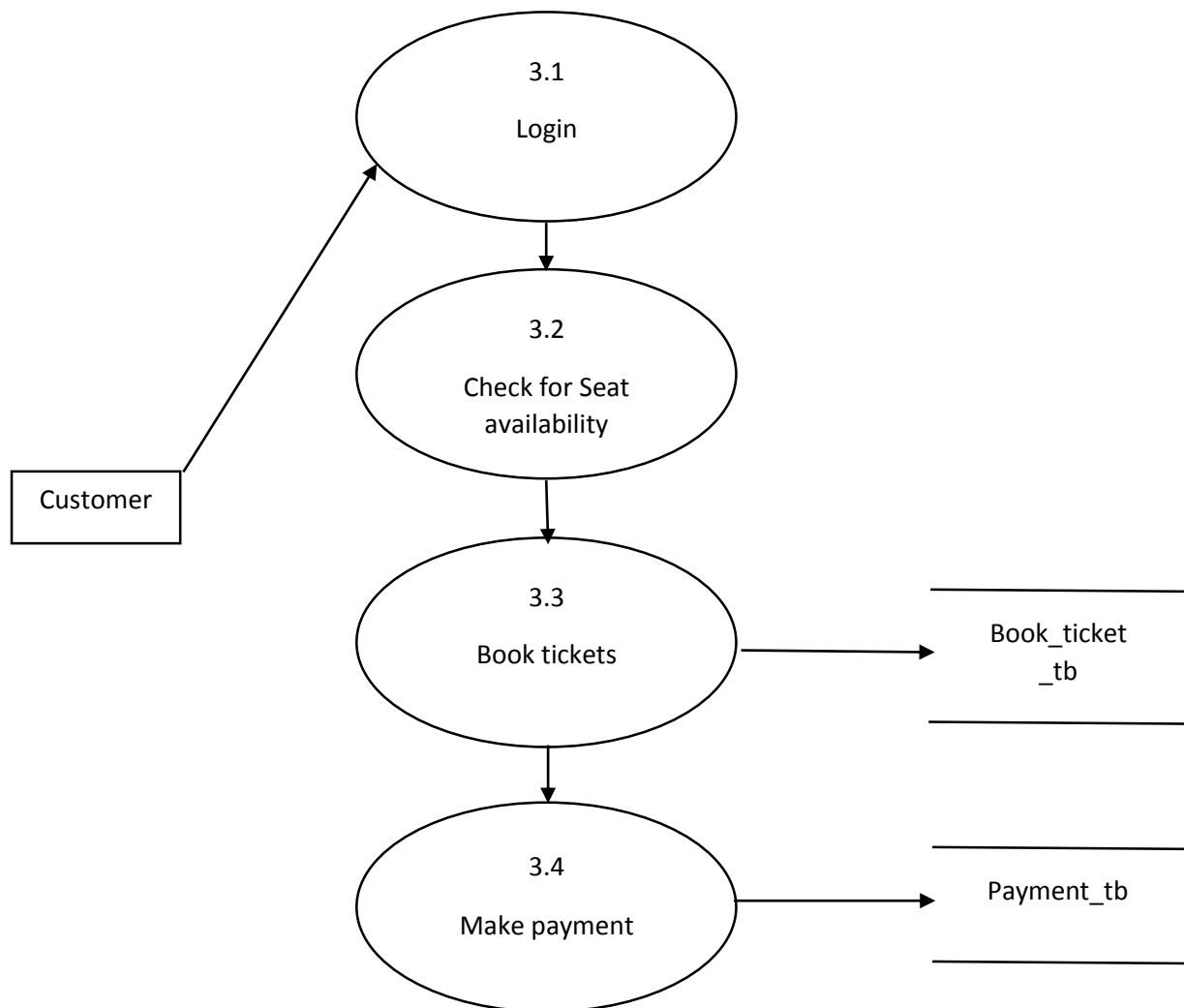
Level 1 [Customer]-Register



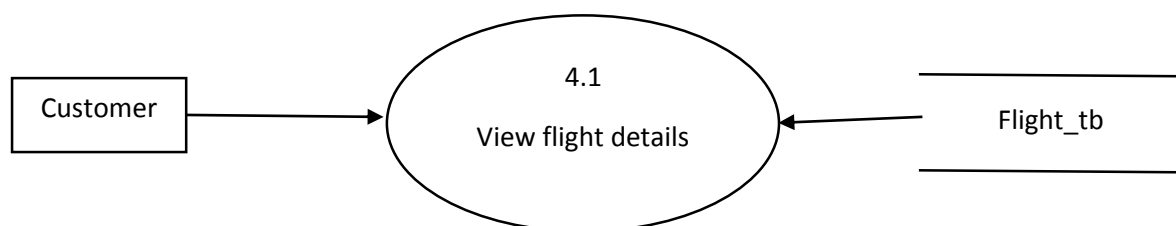
Level 1 [Customer]-Search



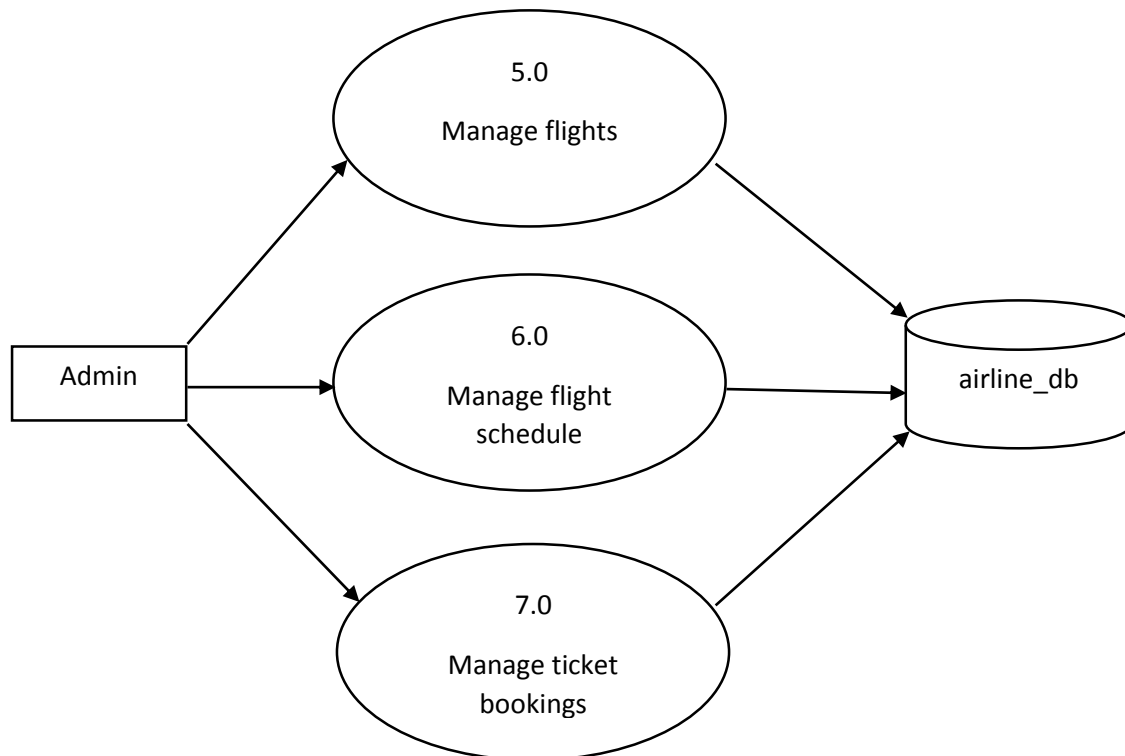
Level 1 [Customer]-Book flight details



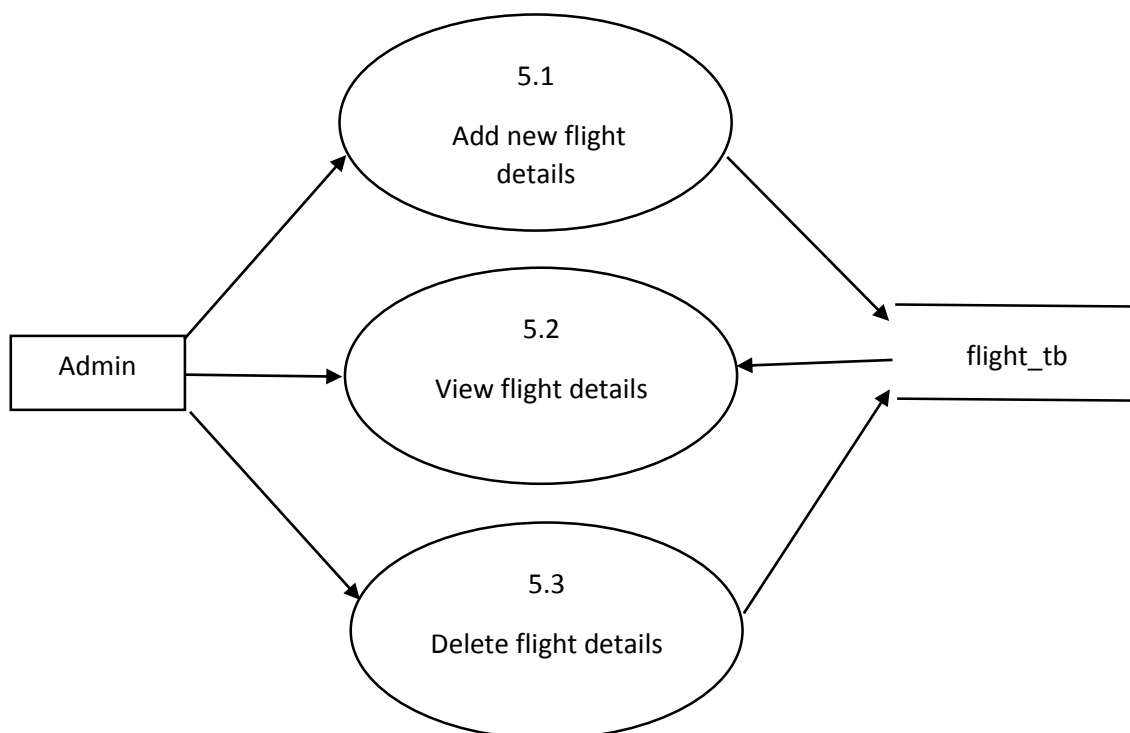
Level 1 [Customer]-View flight details



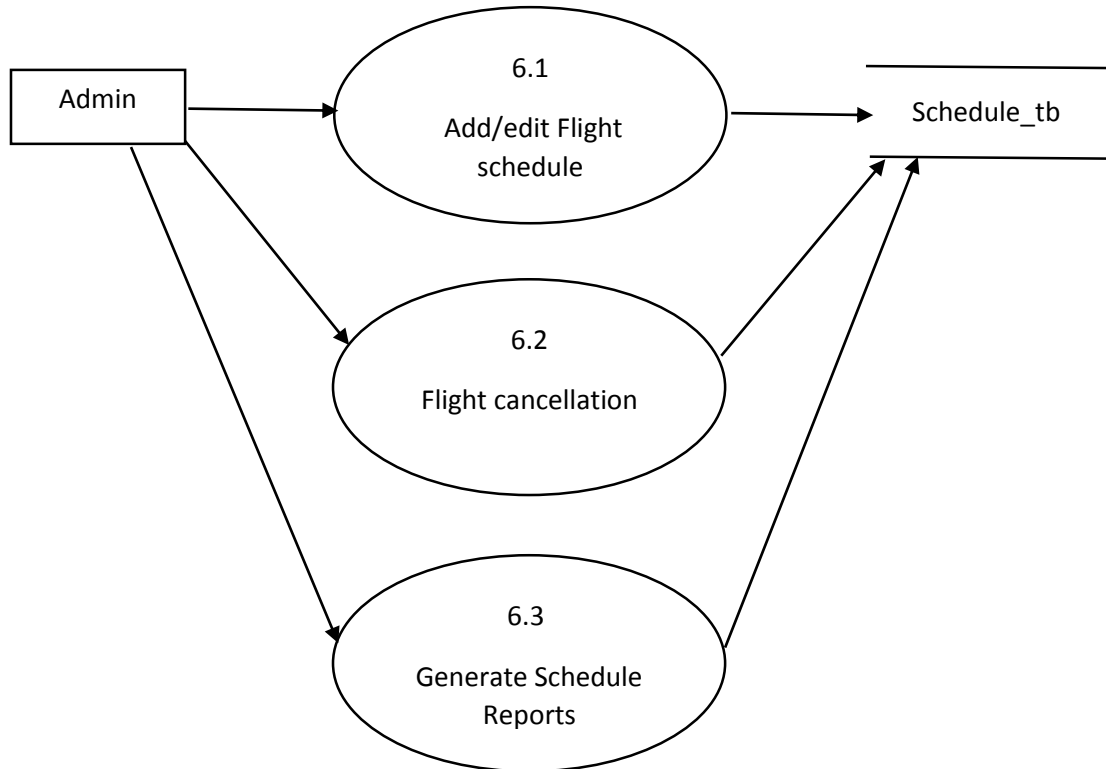
Level 2 – Admin



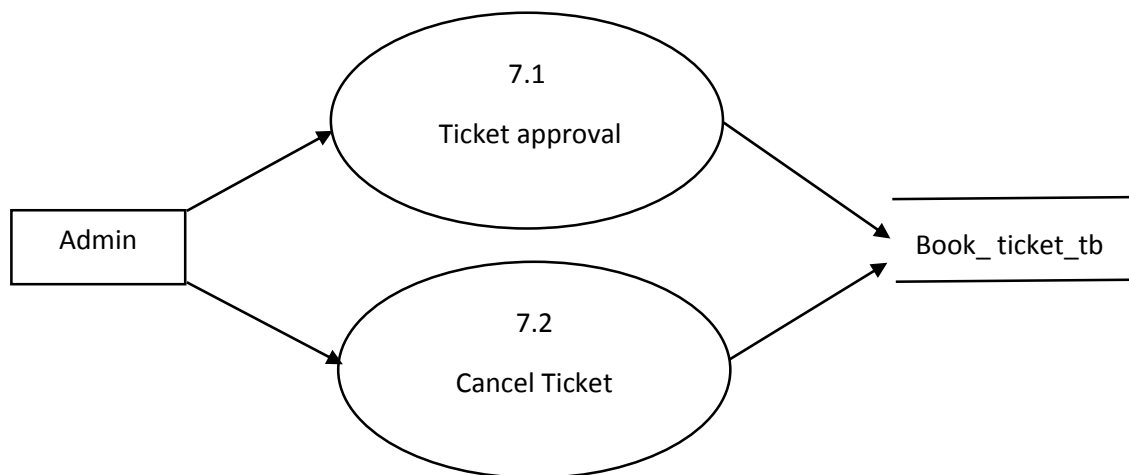
Level 2 [Admin]-Manage flights



Level 2 [Admin]-Manage flights schedule



Level 2 [Admin]-Manage ticket bookings

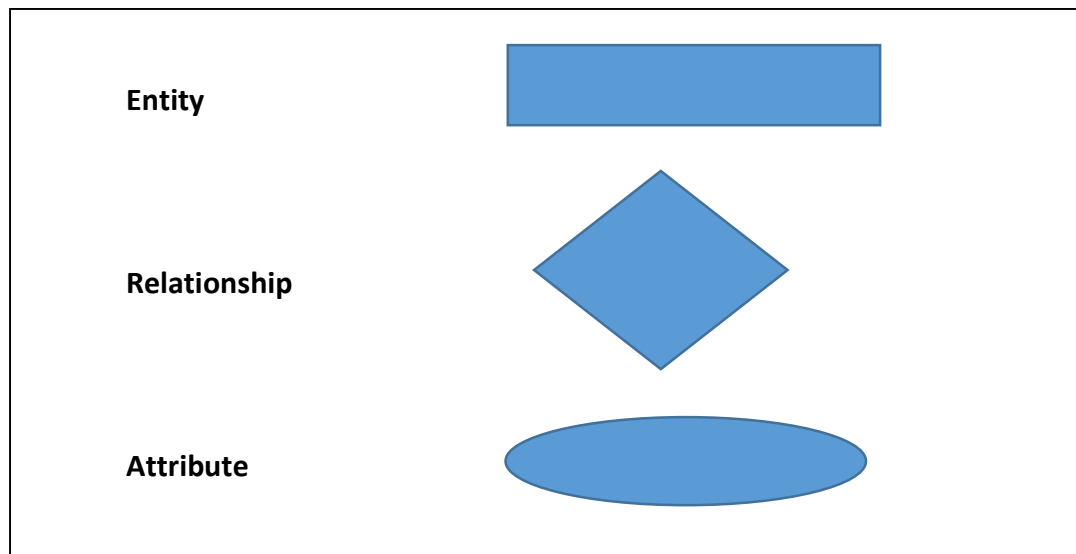


2.6.2 ER Diagram

ER Diagram is graphical representation of entities (tables) and their relationships to each other.

An ER diagram will show entities, their attributes and the relationship between entities.

ER Diagram Symbol



Entity

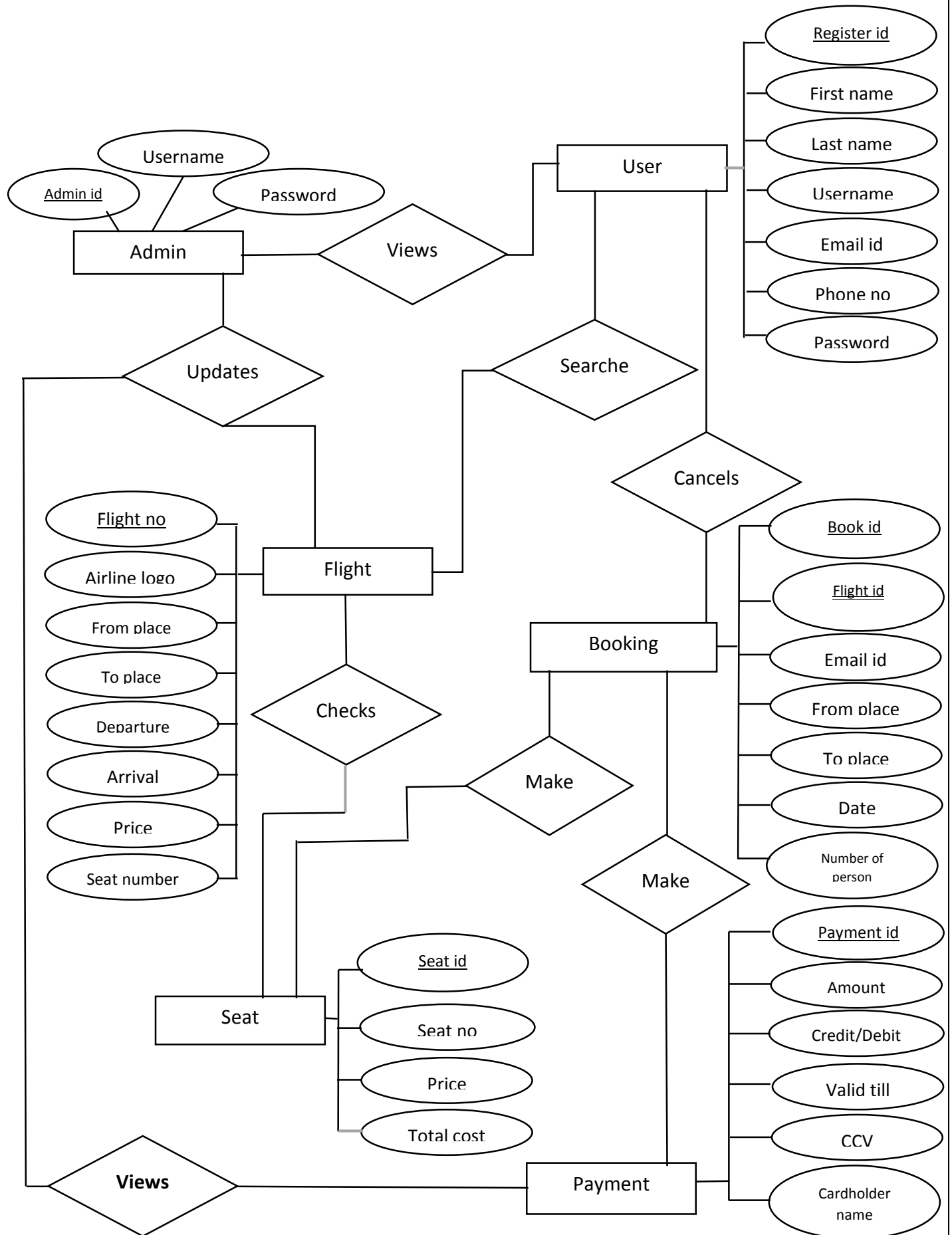
An entity can be a person, place, event, or object in a given system. Entities are shown in ER diagrams by a **rectangle**.

Attribute

An attribute is a property or characteristic of an entity. Attributes are shown in ER diagrams by **oval shapes**.

Relationship

A relationship describes how entities interact. Relationships are represented by **diamond shapes** and are labelled using verbs.



2.6.3 Table Design

Register

Table name 1: register

Field	Type	Description	Constraint
reg_id	int	registration id	primary key
firstname	varchar(30)	first name	null
lastname	varchar(30)	last name	null
username	varchar(30)	user name	null
mail	varchar(50)	email id	null
phone	varchar(13)	phone number	null
pwd	varchar(20)	password	null
con_pwd	varchar(20)	confirm password	null

Add flight

Table name 2: add_flight

Field	Type	Description	Constraint
flight_no	varchar(30)	flight number	primary key
airline_img	varchar(100)	airline logo	null
from_place	varchar(30)	from place	null
to_place	varchar(30)	to place	null
departure	varchar(20)	departure time	null
arrival	varchar(30)	arrive time	null
price	int(20)	price	null
seat_num	int(30)	seat number	null

Flight booking

Table name 3: book

Field	Type	Description	Constraint
book_id	int	added book id	primary key
flight_fk	varchar(20)	flight number	foreign key
reg_fk	int	registration id	foreign key
from_place	varchar(30)	from place	null
to_place	varchar(30)	to place	null
date	varchar(20)	date	null
num_per	int(10)	number of person	null
price	int(20)	price	null

Seat available

Table name 4: seat

Field	Type	Description	Constraint
seat_id	int	seat id	foreign key
seat_fk	int	Seat	foreign key
seat_no	int(10)	seat no	null
flight_no	varchar(20)	flight_no	null
airline_name	Varchar(100)	Airline logo	null
Price1	Int	Price	null

Payment

Table name 5: payment

Field	Type	Description	Constraint
payment_id	int	payment id	foreign key
payment_fk	int	payment	foreign key

amount	int(10)	amount	null
credit_debit	varchar(30)	credit/debit card	null
valid till	varchar(20)	valid till	null
CCV	varchar(4)	CCV	null
cardholder_name	varchar(20)	card holder name	null

2.7 Test Plans

Test id	Test case	Test data	Expected results	Actual results	Pass / fail
1	Login Button without Username, Password	Username : " " Password : " "	Invalid username and password message should be displayed		
2	Click on login button with Invalid username, Password	Username : suji@123 Password : 12345	Wrong Username or password message should be displayed		
3	Click on Login Button with valid username, password.	Username : sujithvenu Password : sujith100	Successfully logged in message should be displayed.		
4	Reset button	Click on reset button	Screen should be cleared		
5	Correct username in the user id and no password in the password field	Username: sujithvenu Password : " "	Proper error message should be shown		

6	Register button	Click the register button	Allow user to go to registration page		
7	Click on submit button	Do not enter any value in the fields. Click on Signup button	It should show mandatory symbols (*) in mandatory fields		
8	Valid values in required fields.	Enter valid values in all required fields Click on Signup button	User should be registered successfully. A successful registration message should be shown		
9	Search flight button	Enter valid values in all required fields Click on search flight	It should display the flight schedules		
10	Search flight button	E	If no flights there, "Sorry! There are no flights available" message should be displayed		
11	Valid Payment	Enter valid payment details	It will show valid payment message		
12	Click on admin login button with valid username, Password	Username : admin Password : nish	Successfully logged in message should be displayed		

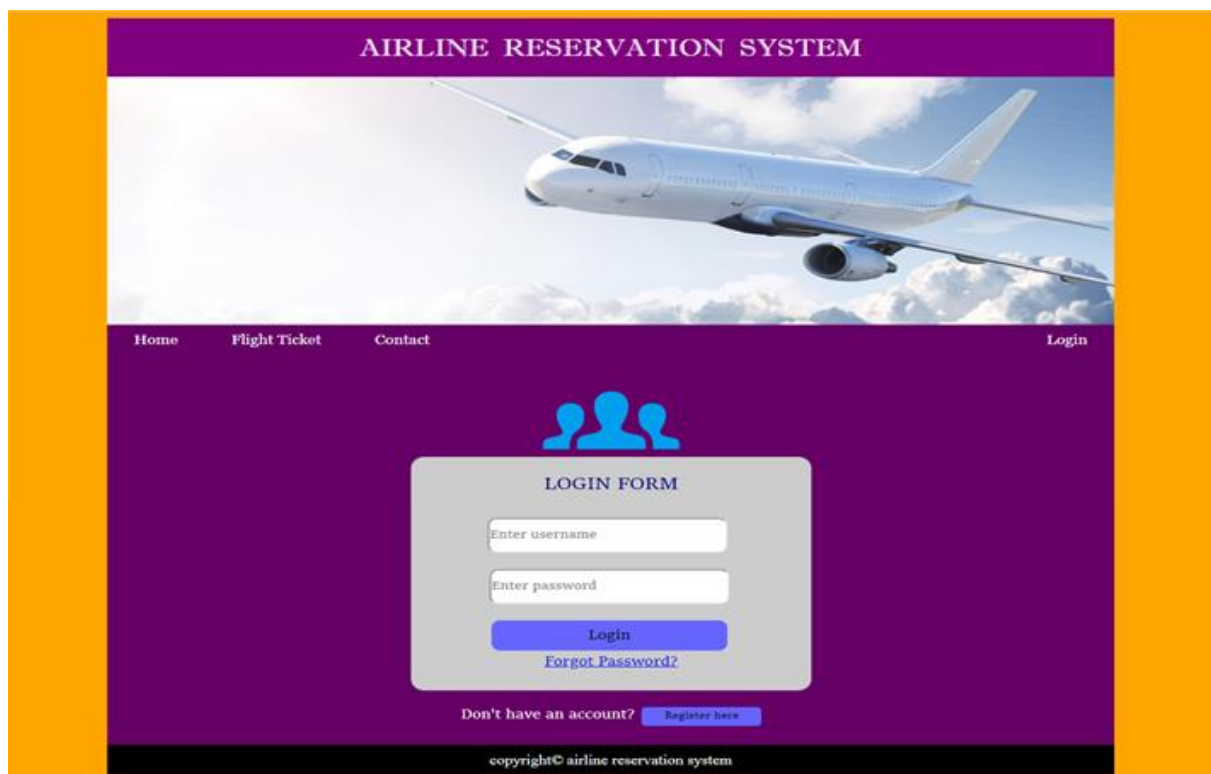
Chapter 3

SCREENS

Home page



Login form - Passenger



Registration form

AIRLINE RESERVATION SYSTEM

Home Flight Ticket Contact Login

REGISTER FORM

First name

Last name

Username

E-mail Id

Phone No

Password

Confirm Password

copyright© airline reservation system

Passenger - Book ticket

AIRLINE RESERVATION SYSTEM

04 June 2018 Welcome Sujith Venu [View Ticket](#) [Logout](#)

Book Flight

From Place

To Place

Date

Number of Person

Flight no	Airline name	From place	To place	Departure	Arrival	Seat number	Price	
AI168		Kochi	Delhi	5:50am	7:15am	20	5590	<input type="button" value="Book"/>

copyright© airline reservation system

Passenger - Seat availability

AIRLINE RESERVATION SYSTEM

04 June 2018 Welcome Sujith Venu [View Ticket](#) [Logout](#)

Number of Person Flight No [Go](#)

1	8	9	16	17
2	7	10	15	18
3	6	11	14	19
4	5	12	13	20

[Book](#)

Seat no: 3 4
Price: 5590
Total Cost: 11180

[Payment](#)

Available seat Selected seat Booked seat

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Passenger - Payment

AIRLINE RESERVATION SYSTEM

04 June 2018 Welcome Sujith Venu [View Ticket](#) [Logout](#)

Payment

Payment Amount : 11180

Credit card number

Expiration Date

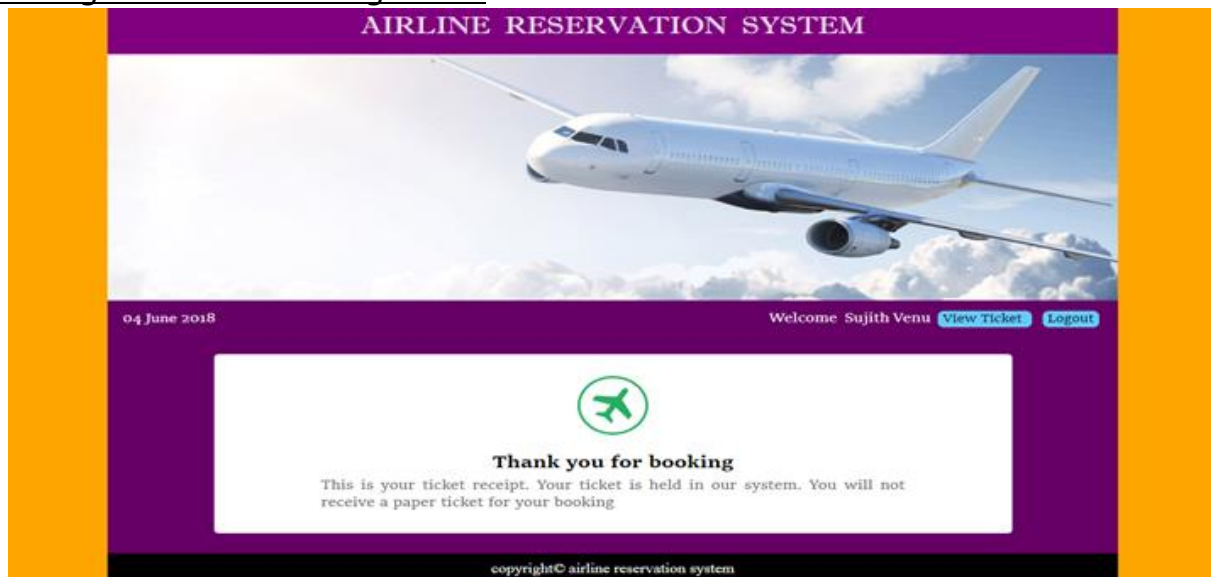
CVV

Card holder Name

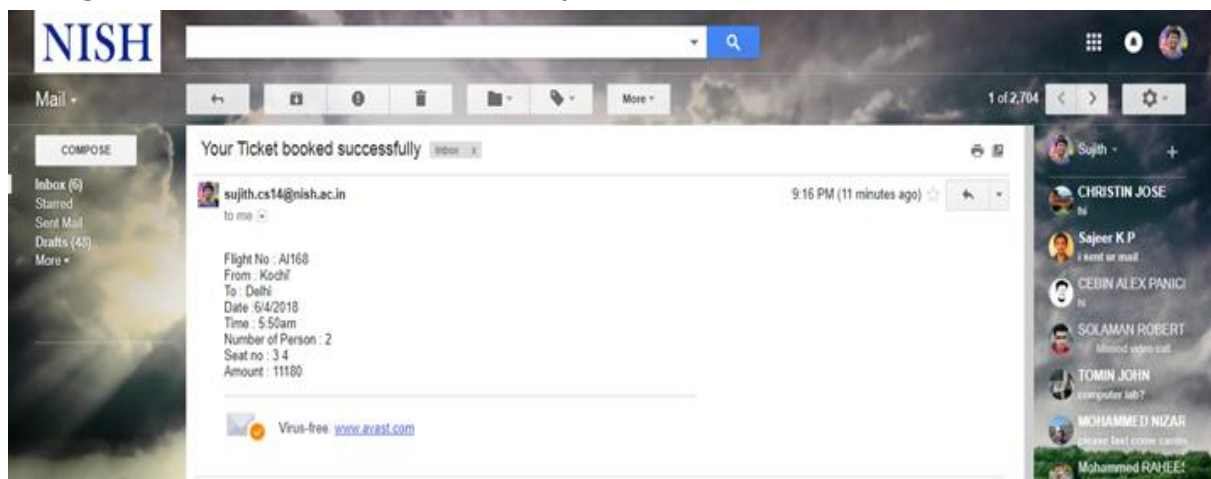
[Submit](#)

copyright© airline reservation system

Passenger - After booking ticket



Passenger - Ticket details received by Email



Passenger - View ticket details

The screenshot displays the 'AIRLINE RESERVATION SYSTEM' web interface. At the top, there's a header with the system name and a background image of an AirAsia plane. Below the header, the date '04 June 2018' is shown on the left, and a welcome message 'Welcome Sujith Venu' with 'View Ticket' and 'Logout' buttons is on the right. A 'Back' link is also present. The main section is titled 'Ticket Details' and contains a table with the following data:

Ticket No	Flight No	Full Name	Airline Logo	From/To	Date	Number of Person	Seat No	Total cost	
1	AI168	Sujith Venu		Kochi Delhi	6/4/2018	2	1 2	11180	Print

At the bottom, there is a copyright notice: 'copyright© airline reservation system'.

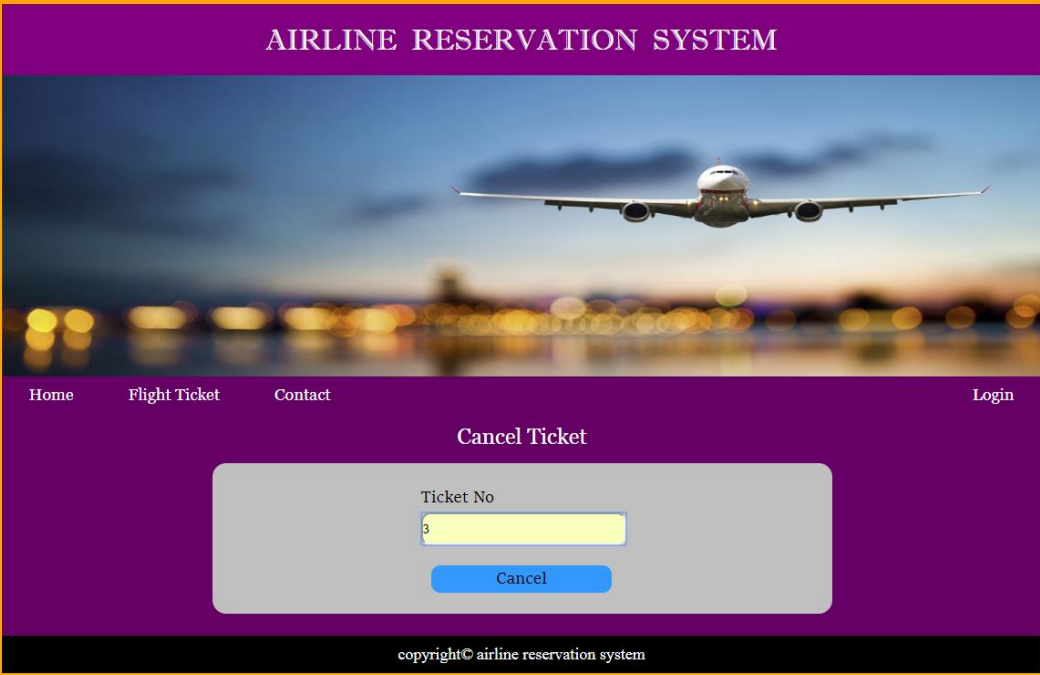
Passenger - Ticket Details -PDF (Portable Document Format)

The screenshot shows a PDF viewer displaying the 'Airline Reservation System' ticket details. The document is titled 'Airline (12).pdf' and is page 1 of 1. The content is a table with the following structure:

Airline Reservation System	
Ticket No	1
Flight No	AI168
Name Of Passenger	Sujith Venu
From Place	Kochi
To Place	Delhi
Date	6/4/2018
Seat No	1 2

The PDF viewer interface includes standard controls like zoom in (+), zoom out (-), and a refresh button.

Passenger – Ticket Cancellation



AIRLINE RESERVATION SYSTEM

Home Flight Ticket Contact Login

Cancel Ticket

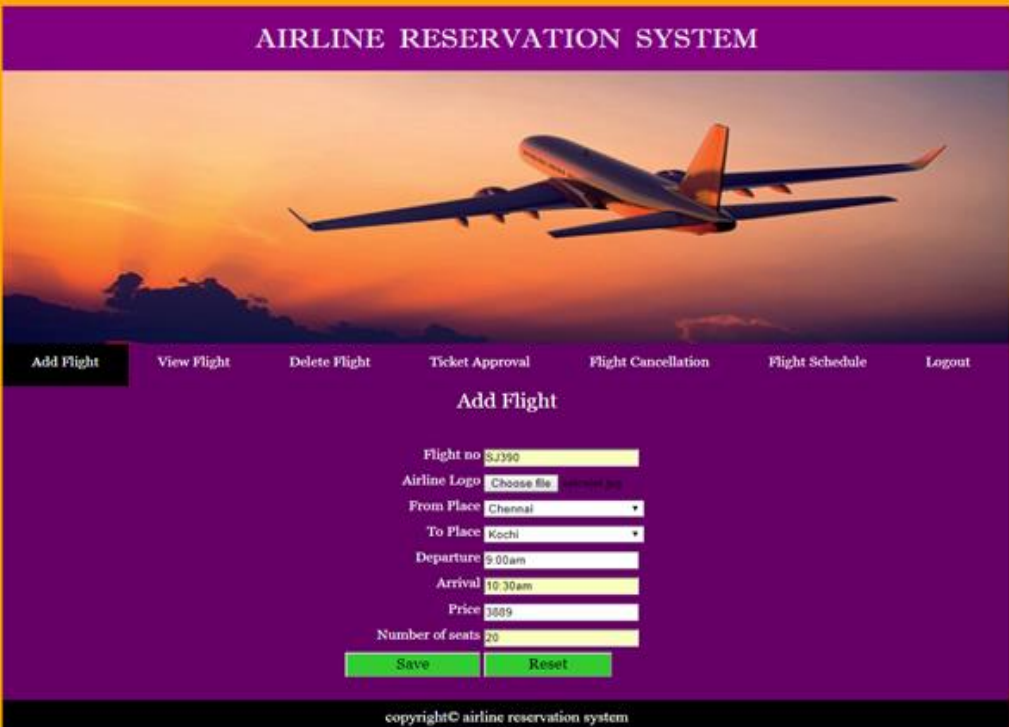
Ticket No

3

Cancel

copyright© airline reservation system

Admin – Add flight



AIRLINE RESERVATION SYSTEM

Add Flight View Flight Delete Flight Ticket Approval Flight Cancellation Flight Schedule Logout

Add Flight

Flight no SJ390

Airline Logo Choose file Remove file

From Place Chennai

To Place Kochi

Departure 9:00am

Arrival 10:30am

Price 3009


Number of seats 20

Save Reset

copyright© airline reservation system







Admin – View/Delete flight details

AIRLINE RESERVATION SYSTEM



[Add Flight](#)
[View Flight](#)
[Delete Flight](#)
[Ticket Approval](#)
[Flight Cancellation](#)
[Flight Schedule](#)
[Logout](#)


View Flight

Flight no	Airline name	From place	To place	Departure	Arrival	Seat number	Price	Status
AA457		Kochi	Madurai	6:10am	8:15am	20	5990	Available
AI168		Kochi	Delhi	5:50am	7:15am	20	6900	Available
GO430		Thiruvananthapuram	Mumbai	6:30am	8:45am	20	5400	Available
IN347		Thiruvananthapuram	Hyderabad	8:00am	9:15am	20	5500	Available
JA453		Delhi	Mangalore	8:00am	10:30am	20	6600	Available
V123		Kozhikode	Chennai	6:10am	7am	20	3300	Available

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Admin -Ticket approval





AIRLINE RESERVATION SYSTEM



[Add Flight](#)
[View Flight](#)
[Delete Flight](#)
[Ticket Approval](#)
[Flight Cancellation](#)
[Flight Schedule](#)
[Logout](#)

Ticket Approval

Date: [Display](#)

Ticket No	Full name	Airline logo	From/To	Date	Number of Person	Seat No	Price	Total cost
AI168	Sujith Venu		Kochi Delhi	6-5-2018	2	1 2	6900	13800
AA457	Cebun Alex		Kochi Madurai	6-5-2018	3	6 7 8	5990	17970
AI168	Gokul krishnan		Kochi Delhi	6-5-2018	2	5 6	6900	13800
GO430	Muth MA		Thiruvananthapuram Mumbai	6-5-2018	2	15 16	5400	10800

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Admin - Flight cancellation

AIRLINE RESERVATION SYSTEM

Add Flight View Flight Delete Flight Ticket Approval **Flight Cancellation** Flight Schedule Logout

Flight Cancellation

Search Flight No
V123

Reason for cancellation
Sorry! V123 flight is cancelled..

Date
6/5/2018

Cancel

copyright© airline reservation system

Admin - Flight schedule

AIRLINE RESERVATION SYSTEM

Add Flight View Flight Delete Flight Ticket Approval Flight Cancellation **Flight Schedule** Logout

Flight Schedules

Flight No	Airline Name	From	To	Departure	Arrival
AA457	AirAsia	Kochi	Madurai	6:10am	8:15am
AI168	Air India	Kochi	Delhi	9:50am	7:15am
GO430	Go Air	Thiruvananthapuram	Mumbai	6:30am	8:45am
IN347	IndiGo	Thiruvananthapuram	Hyderabad	8:00am	9:15am
JA453	Jet Airways	Delhi	Mangalore	8:00am	10:30am
V123	Vistara	Kozhikode	Chennai	6:10am	7am

copyright© airline reservation system

Chapter 4

TEST REPORTS

Test id	Test case	Test data	Expected results	Actual results	Pass / fail
1	Login Button without Username, Password	Username : " " Password : " "	Invalid username and password message should be displayed	"Please enter User name and password" Message is displayed	Pass
2	Click on login button with Invalid username, Password	Username : suji@123 Password : 12345	Wrong Username or password message should be displayed	"Incorrect username and password" Message is displayed	Pass
3	Click on Login Button with valid username, password.	Username : sujithvenu Password : sujith100	Successfully logged in message should be displayed.	System allowed user to access application	Pass
4	Reset button	Click on reset button	Screen should be cleared	username and password field not cleared	Fail
5	Correct username in the user id and no password in the password field	Username: sujithvenu Password : " "	Proper error message should be shown	Displayed error message "Please enter username"	Pass
6	Register button	Click the register button	Allow user to go to registration page	Allowed user to go to registration page	Pass

7	Click on submit button	Do not enter any value in the fields. Click on Signup button	It should show mandatory symbols (*) in mandatory fields	Showed the mandatory symbol (*)	Pass
8	Valid values in required fields.	Enter valid values in all required fields Click on Signup button	User should be registered successfully. A successful registration message should be shown	It displayed "Registered successfully"	Pass
9	Search flight button	Enter valid values in all required fields Click on search flight	It should display the flight schedules	It displayed the flight schedules	Pass
10	Search flight button	E	If no flights there, "Sorry! There are no flights available" message should be displayed	It displayed the message "Sorry! Please enter From, To, Date & number of person"	Pass
11	Valid Payment	Enter valid payment details	It will show valid payment message	It displayed "Valid payment"	Pass
12	Click on admin login button with valid username, Password	Username : admin Password : nish	Successfully logged in message should be displayed	It displayed "Admin logged in successfully"	Pass

Chapter 5

CONCLUSION

Airline reservation System is a computerized system used to store and retrieve information and conduct transactions related to air travel. This web application is convenient for the customers to book the flights and reserve tickets at the click of a mouse.

Customers can register in the site, book and cancel tickets after registration, view flight schedules, search for flights etc. Administrator approves booking and cancellation of tickets, add/delete flights, view customer details, sends mail to customers regarding booking of tickets etc.

Airline Reservation System (ARS) has led to ease of airline ticketing, flight scheduling and also provided a means for customers to access and book flights with ease and in time. It has also increased the speed with which information about customers are retrieved and handled and flight scheduling is handled.

Chapter 6

FUTURE SCOPE OF PROJECT

Airline reservation system can be summarized that the future scope of the project around maintaining information regarding:

We can improve this web application by including more facilities the airline company offers in future like festive offers for ticket, gift bonanza etc

We can host this site on online servers to make it accessible worldwide.

Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers.

Chapter 7

REFERENCES

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