CHAPTER 1
INTRODUCTION

This project on Airline Management System is the automation of registration process of airline system. This is a website designed for comparing various websites already available like IndiGo, Jet Airways etc. on a single platform for providing much information like package information, Booking Motels etc. This also allows us to add records when a passenger reserves a ticket.

1.1 Problem Description

The definition of our problem lies in manual system and a fully automated system.

Manual system: The system is very time consuming and lazy. This system is more prone to Errors and sometimes the approach to various problems are unstructured.

Technical system: With the advent of latest technology if we do not update our system then business results in losses gradually with time. The technical systems contains the tools of latest trend i.e. computers printers, fax, Internet etc. The systems with this technology are very fast, accurate, user-friendly and reliable.

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Fig.1

Need of Airlines system

A few factors that direct us to develop a new system are given below -:

1) Faster System

2) Accuracy

3) Reliability

4) Informative

5) Reservations and cancellations from anywhere to any place.

1.2 Project Description

This is a project on Airline Management System to be used at different reservation agency to reserve to seats for passengers online. It is a customer oriented software and also easy to use. The Information System is an attempt to integrate the services offered by the different airlines and companies across the world. It proposes to make the process of flight reservation, Internet based, where the different airlines will have a common single platform for reservation of seats into their flights. Thus, it aims at benefiting the travellers as well as the airlines concerned. The objective in making this project is to better facilitate reservation system to make it more customers convenient. And cover every aspect in satisfying the needs and the requirements that should be fulfilled by the reservation agency, for the satisfaction of its customers.

1.3 Proposed System

1. Develop a Computerized Airline Information System that will be able to solve the issues in the existing system regarding to the following categories:
    - Accuracy
    - Usability
    - Efficiency
    - Effectiveness Speed
    - User-friendliness
2. Identify, analyse, and implement the latest procedures and techniques to enhance a Computerized Airline Information System. By implementing the newest techniques and technology in the proposed project. The proposed project is expected to take more advantages than the existing system.

3. The advantages of a CRS is one of the client wants to see. Aside from getting the logic of the business process of a system, this advantage is one of the most important aspects that the developers must have to provide in every project. Implementing new features to the proposed system is one of the developer's solutions to take advantage against to the existing. By using latest devices and gadgets on delivering the services and process of the proposed project, is one of the proposed features of the developers in this project.
4. Providing different kind of diagrams in describing how the system will work, process a specific action etc. will give the client an idea on how does the proposed project works. In this project documentation, the developers uses the following diagrams in describing different process and action:
    - Use-case Diagram
    - Activity Diagram
    - Class Diagram
5. Designing the system based on the IATA and ICAO standards is the key of the proposed project to be able to operate in the airline operation industry. Following this standard will make the system able to be compatible to share information in the GDS that is used by the airline travel agencies. The issues identified in the existing system can be solved by setting the goal of the project based on the following categories that the proposed system must have to solve:
    - Accuracy
    - Usability
    - Efficiency
    - Effectiveness
    - Speed
    - User-friendliness
    - Design
6. The proposed project to be compatible for the system integration is the primary goal of the developers, providing the business process based on the reality is the basis of the project to make the project able to use in the real business operation.

CHAPTER 2
LITERATURE SURVEY

2.1 History of Computer Reservation Systems

In 1946, American Airlines installed the first automated booking system, the experimental electromechanical booking system, the experimental electromechanical Reservisor. This was seriously hampered by needs for local human operators to do the actual lookups; ticketing agents would have to call a booking office, whose operators would direct a small team operating the Reservisor and then read the results over the telephone. There was no way for agents to directly query the system.

In 1953, Trans-Canada Airline(TCA) started investigating a computer-based system with remote terminals, testing one design on the University of Tornoto's Manchester Mark 1 machine that summer. Though successful, the researchers found that input and output was a major problem.

The idea of automated Airline Reservation System resulted in a 1959 venture known as the Semi-Automatic Business Research Environment. By the time of network it was completed in the year 1964. Europeans airlines also began to invest in the field in 1980s initially by developing their own reservations systems in their homeland, propelled by growth in demand for travel as well as technological advances which allowed GDSes to offer ever-increasing services and searching power.

2.2 Airline Reservation System

An Airline reservation system (ARS) is part of the so-called passenger service systems, which are applications supporting the direct contact with the passenger (Strauss, 2010). The airline reservations system was one of the earliest changes to improve efficiency. ARS eventually evolved into computer reservation system which is used for reservations of particular airline and interfaces with global distribution system (GDS) which supports travel agencies and other distribution channels in making reservations for most major airlines in a single system.

2.3 Internet Booking Engine

It allows a customer to specify their travel requirements such as city of derature, destination, departure date, return date and class of travel. Once this information is received, the IBE will offer a list of available air tickets, hotels and excursions which the customers can then book.

Recently IBE providers keep adding new features to IBE such as multiple search options so that a customer can book the flight in a manner that suits his/her requirements.

In the past 15 years, there has been a significant shift towards more online booking. This shift started with the creation of IBE websites that search across multiple independent travel sites & booking engines.

- **Other Traveling agencies:**

  There are a couple of websites that are present on the internet to provide the facility for the user to compare the cost of various traveling agencies like Etihad, Emirates, American Airlines, Indigo, Jet Airways, etc. However, they do not provide any kind of booking mechanism.

- **What we do?**

  We provide a basic interface for the user so that he can compare the cost of the flight from one place to another among various agencies. In addition to this, we also provide a login mechanism for the user so that he can book a flight without going from one website to another.

CHAPTER 3
PROCESS MODEL ADOPTED

The analysis model must achieve three primary objectives:-

1. To describe the requirements of the customer.
2. To establish a basis for the creation of a software design.
3. To define a set of requirements that can be validated once software is built.

An Overview to system analysis

The system analysis phase is considered to be one of the most important phases in the system development life cycle. It is immensely important that the software developer make through study of the existing system. Thorough study of the system is made and need i.e. features that are critical to system success and users wants (i.e. features that would be good but not essential) are brought out. The study will enable the developer to know the intricacies of the existing system.

3.1 Requirement Analysis

Requirement analysis is done in order to understand the problem which the S/W system is to solve e.g., the problem could be automating the existing manual system or developing a completely new automated system or a combination of the two. For large systems having a large number of features and the need to perform many different tasks, understanding the requirement of the system is a major task. The emphasis in requirement analysis is on identifying what is needed from the system, and not how the system achieves its goal.

3.1.1 Hardware Requirement

- PROCESSOR : 32 BIT, Intel Core i3 4400 H
- RAM : 1 GB
- HARD DISK : 20 GB
- MONITOR : SVGA Monitor (1270* 720 RESOLUTIONS)
- CLOCK SPEED : 1 GHz

3.1.2 Software Requirement

- OPERATING SYSTEM : Windows 7 or higher.
- FRONT END : CSS3, HTML5, Bootstrap4
- MIDDLEWARE : JSPBACK ENDMySQL
- SERVER : JDBC 4.0

3.1.3 Functional Requirements

- The interface of the system should be user friendly.
- The system must be secured, to ensure that nothing happens to the users credit cards.
- System must be compatible and work on different OSes.
- The system must support various languages.
- System must have maximum reliability to ensure that all flight reservations and confirmed.

3.1.4 Non-Functional Requirements

- Accuracy
- Usability
- Efficiency
- Effectiveness
- Speed
- User-friendliness

CHAPTER 4
SYSTEM DESIGN

4.1 Physical Design

- **Table 1:**

Administrator

Attributes	Types and size	Key and constraints
Id	NUMBER(10)	Primary key
Password	VARCHAR(10)	Not NULL

- **Table 2:**

Package

Attributes	Types and size	Key and constraints
P_id	NUMBER (10)	Primary key
Location	VARCHAR(30)	Not NULL
Package_name	VARCHAR(20)	Not NULL
Id	NUMBER (10)	Foreign key

- **Table 3:**

Customer

Attributes	Types and size	Key and constraints
User_id	NUMBER (10)	Primary key
name	VARCHAR(20)	Not NULL
Contact_no	NUMBER (10)	Not NULL
Password	VARCHAR(10)	Not NULL
Address	VARCHAR(10)	Not NULL
Id	NUMBER (10)	Foreign key

- **Table 4:**

Booking Flights

Attributes	Types and size	Key and constraints
Flight_no	NUMBER (10)	Primary key
Id	NUMBER (10)	Foreign key
Source	VARCHAR(30)	NOT NULL
Destination	VARCHAR(30)	NOT NULL
Price	NUMBER (10,2)	NOT NULL

4.2 Use Case Diagram

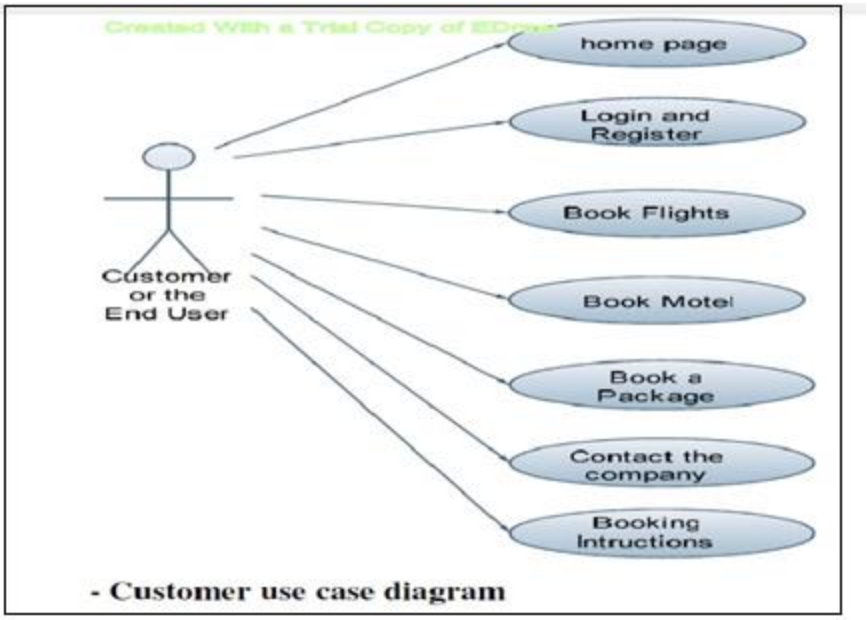

Fig. 2

4.3 Use Case Description

To write the use-case specification consists of description about use-case flow of events such as basic flow, alternative flow, special requirement preconditions, and post conditions for the use-case "Reserve Tickets" of Airline Information System".

- **BRIEFDESCRIPTION:-**

  The reservation admin has to maintain flight status, flight details, reserve tickets and the particular use-case is used.

- **FLOW OF EVENTS:-**
  - **Basicflow:**

    When the reservation admin has to maintain flight status means the system will show the reserved seats and the available seats in the flight status. The system which maintains the flight details which

enter the flight ID, name, source, destination, arrival time, departure time. Reservation which is perform to reserve the tickets.

- **Alternative flow:**

  The reservation admin enters the wrong data means the system allows to reenter the reservation.

- **Pre-condition:**

  We have logged into enter the particular form.

- **Post-condition:**

  The system will add all the details, status of flight reservation form.

➢ **RESULT:**

Thus the use-case specification was written successfully for Airline Information System.

4.4 Data Flow Diagram

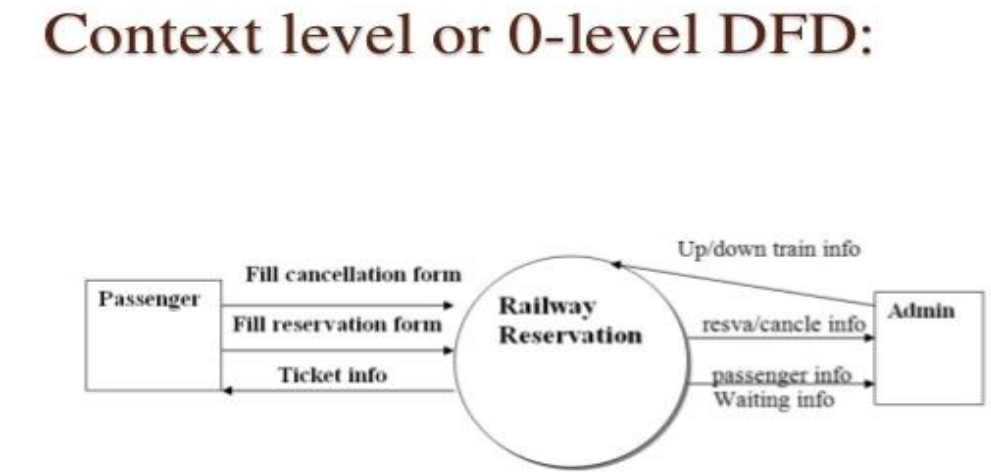

Fig.3

1-level DFD:

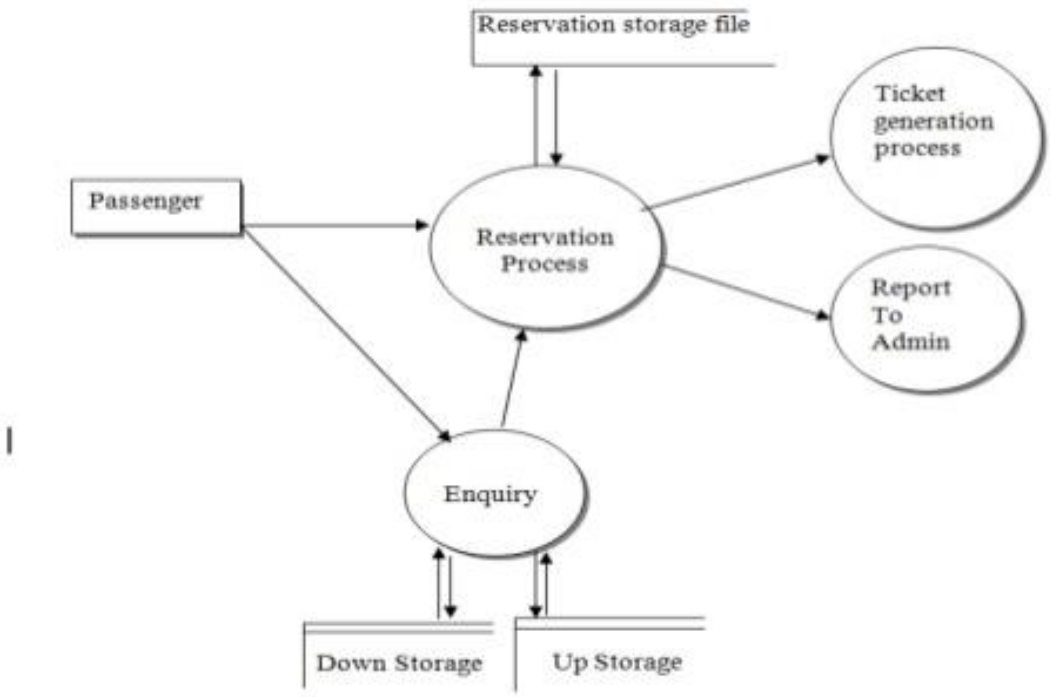

Fig. 4

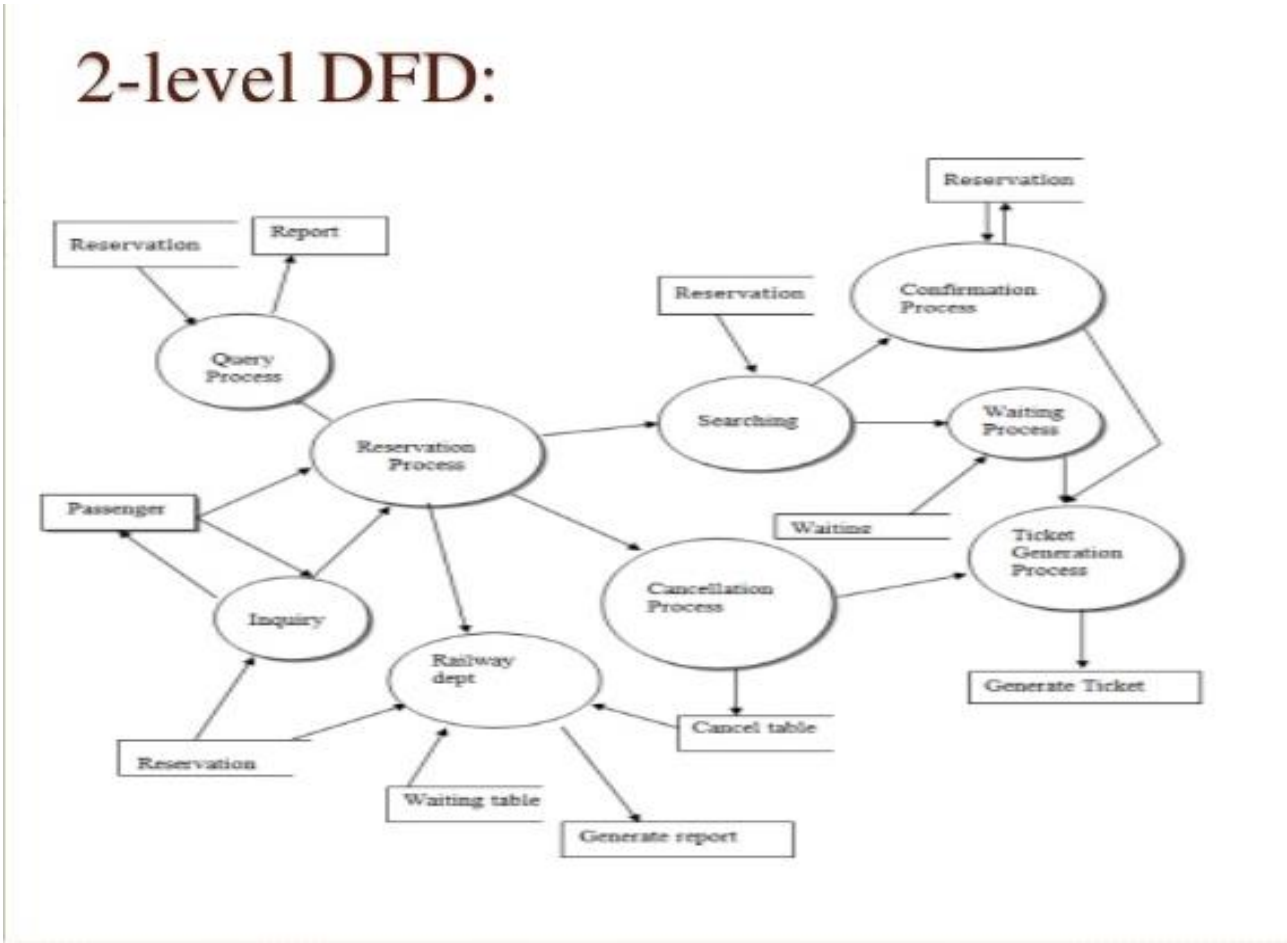
2-level DFD:
Reservation
Report
Query Process
Reservation Process
Passenger
Inquiry
Reservation
Railway dept
Waiting table
Generate report
Cancel table
Cancellation Process
Reservation
Searching
Reservation
Confirmation Process
Waiting Process
Waiting
Ticket Generation Process
Generate Ticket

Fig. 5

4.5 Activity Diagram

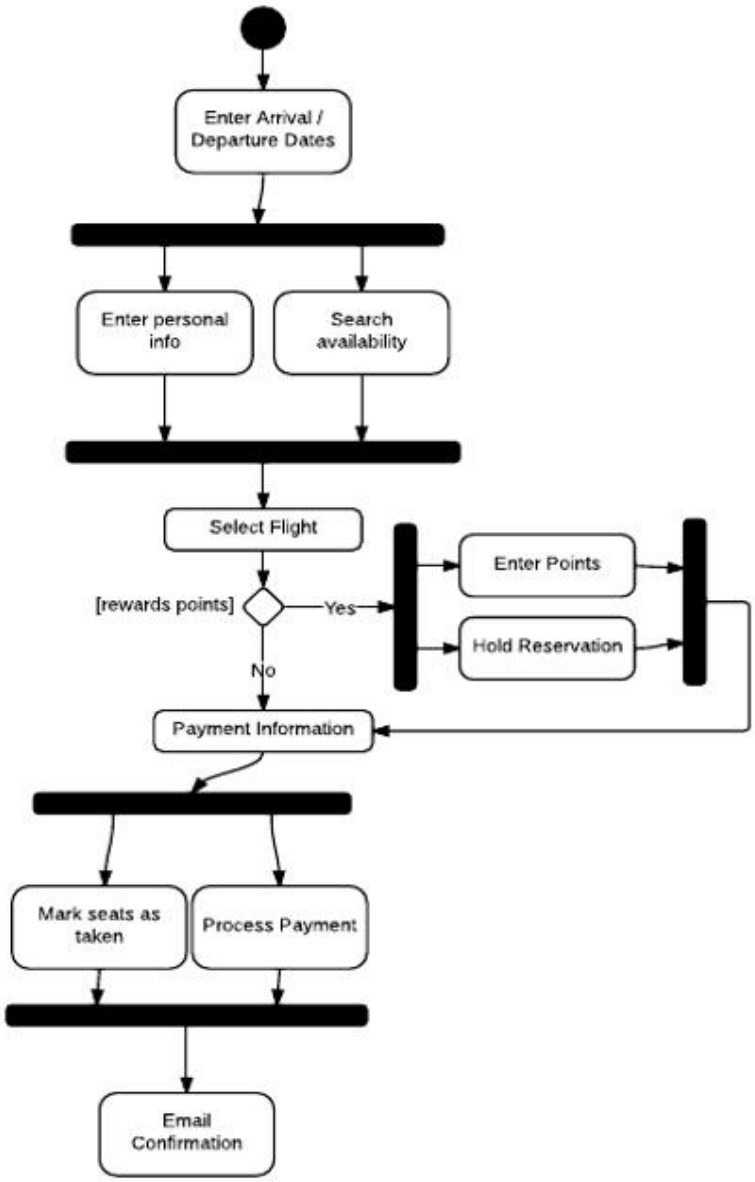

Fig. 6

4.6 Sequence Diagram

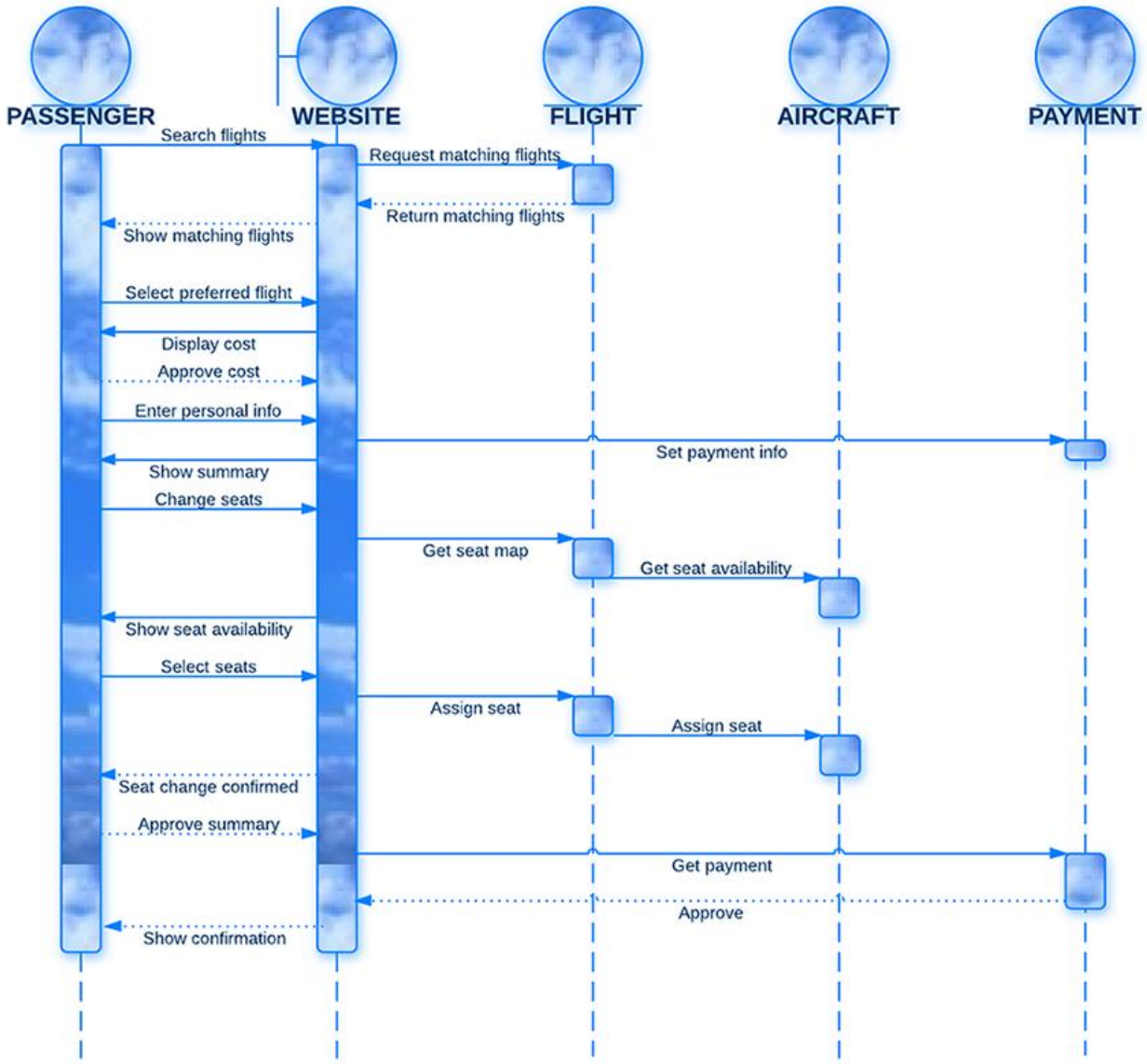

Fig. 7

CHAPTER 5
CONCLUSION

5.1 Findings

There was a lot of fun in making this project. This project was very useful to us as it provided us the inside view of the planning and implementation of the database. In this project we had to think about the various options which we can provide to user. The implementation was not easy as we had to look into the minute details in order to achieve my goals. We have tried to make this project user friendly and also interactive by providing many features.

We are satisfied by achieving the goals for which we had planned. A lot of experimental work can be done with this project. Looking forward for any advice which can help us to improve the project.

5.2 Limitations

- Due to unavailability of templates it is impossible to generate different types of frame work, here we need to develop them by our own.
- Since Microsoft and Java the testing becomes cumbersome.

5.3 Scope for Future Prospects

- For students desiring on-the-job experience prior to graduation, an internship course may be available.
- Graduates of the program will be prepared to assume positions as office managers, administrative services coordinators or assistants, office supervisors, records and information supervisors, personnel administrators, administrative assistants, or administrative support secretaries.
- Students may transfer to a four-year institution to pursue a bachelor's degree in business administration, business education, human resources, advertising, or public relations
- Organization automation system is very helpful in collecting the record of an organization efficiently and in less time.
- It requires less man power to keep the record and to update it time to time quickly.

- Less skilled labor is needed to maintain the database in comparison to the traditional office management.
- Insertion and deletion of a particular field or any name in the any position except the last one is very typical in traditional office management but very easy in this case.
- Useful for collecting the record worldwide through the net and hence useful for multinational companies.

CHAPTER 6
BIBLIOGRAPHY & REFERENCES

6.1 Reference Books

Various books referred to for Java, HTML, CSS clarification and documentation are as follows:

- Advanced Java 2 Platform by Harvey. M. Dietal.
- Core Java 2, Volume II-Advanced Features by Cay Horetmann Gary Cornelll.
- Head First Servlets and Jsp by by Oreilly.
- Head First HTML with CSS by Chris Schalk(Author), Ed Burns (Author), James Holmes.
- Programming with Java by E. Balaguruswamy.

6.2 Other Documentation and Resources

Various sites referred to during making of the project are as follows:

- ✓ www.en.wikipedia.org
- ✓ www.google.com
- ✓ www.howstuffworks.com
- ✓ www.roseindia.net
- ✓ www.w3cschools.com