

Airline Flight and Reservation System

Software Design Document

Name:

Date: 15.01.2011

Table of Contents

1. Introduction	3
1.1 Purpose.....	3
1.2 Scope.....	3
1.3 Overview	3
2. System Overview	4
3. System Architecture	5
3.1 Architecture Design	5
3.2 Decomposition Description.....	7
3.3 Design Rationale	8
4. Data Design	8
4.1 Data Description	9
5. Human Interface Design	10
5.1 Overview of User Interface.....	10
5.2 Screen Images	10
6. Requirements Matrix	13

1. Introduction

1.1 Purpose

The aim of this software is to develop a systematic analysis of the procedure involved in the reservation of ticket for railway travel. This should be used in an effective way so that various advantages are obtained from the software. Software means establishment of sound and in-depth development of a task using high-level language that results in well-equipped, economical software, which is reliable. The introduction may be divided into various steps based on the developer and also depending upon the operation to be performed using the particular software. The “AIRLINE RESERVATION SYSTEM” undertakes as a project I based on relevant technologies. The main aim of this project is to develop the software for the process of reserving airway ticket should lead to increased efficiency and reduced drawbacks which were present in the previous procedure of airline reservation. The software should be, error controlled both logically as well as in syntactic manner. The features deal with the different operations involved in the process of AIRLINE RESERVATION. Business people don't have any planned air travel. They just receive the invitation for some international exhibition at the last minute, which they should or can attend to improve their ability both in the skilled manpower and also in the machinery importing. Tickets can now be booked online. Some agents or the organization with the idea of eyeing increased profit through the extra taxes for the comfort they give to buy the ticket just by a single click of the mouse.

1.2 Scope

This project designs and implements AFRS to fulfill all the vision statements. Supported by a well designed database, all available air flight information is integrated together and can be accessed easily through a single point. A friendly user interface is provided so that various combinations of search criteria can be fetched from user and generates corresponding database search statements. AFRS provided both customer and administration interfaces with the latter used for administration purposes. If time permits, AFRS will support frequent user registration and personal information management.

1.3 Overview

AFRS is an Internet-based application executing on a Web server and connected to enterprise databases. AFRS accepts and processes requests from two patrons: end users (customers) and system administrators. Besides the local server database (for storing reservation records), AFRS also integrates databases from airlines and airports.

The system is expected to have a Web user interface for customers and an authorization based Web interface for administrators. Its final release has merits of being efficient and precise in flight searching, consistent in booking transaction processing and secure in credential data transmission.

2. System Overview

REQUIREMENT ANALYSIS

Requirements are prone to issues of the ambiguity, incompleteness and inconsistency techniques such as rigorous inspection have been shown to help deal with these issues. Ambiguity, incompleteness and inconsistencies that can be resolved in the requirement phase typically cost orders of the magnitude less to correct than when these same issues are found in later stages of product development. The purpose of developing the specified software is to describe the analysis involved in the reservation of air ticket.

- FUNCTIONAL ANALYSIS

Input: Collecting the information of the person who is going to travel.

Output: The issue of ticket on the particular date specified by the traveler.

- PROCESS

- ✓ Enter the details of the traveler.
- ✓ Check for availability of tickets.
- ✓ Inform the traveler the position of the available seat.
- ✓ Ask his/her decision whether to reserve the ticket or not.
- ✓ Positive reply-book ticket after receiving the amount for the cost of ticket.
- ✓ Issue the ticket.
- ✓ Ask the traveler to check in time so that he/she doesn't miss the plan because of delay.
- ✓ Update the database before the next booking is to be done.

- EXISTING SYSTEM

In the existing system there is no provision for senior citizen concession and there is no facility for viewing single passenger record.

- PROPOSED SYSTEM

The main implementation requirements for this project are

- The client tier must not be changed, which means that the format of all the communication messages have to be preserved.
- Some functionality, like check digit validation, time, stamps etc.
- Are supplied by already existing routines which we are obliged to use.
- The format of communication in modules are fixed and non changeable.
- All the technical documentation formats are also fixed and have to be followed.
- Some customer implementation techniques have to be followed.
- A facility for viewing the single passenger record is made available.
- We have made concession in ticket fair for senior citizens.

- **REPORT MODULE**

The tickets issued should have the details such as plane number, ticket number, seat number, traveler's name, time of departure. The traveler should be informed about the check-in time. The names of the fields involved in the airline reservation system are

- FLIGHT DETAILS
- CHECK AVAILABILITY
- BOOK TICKET
- VIEW SINGLE PASSENGER RECORD (by taking the ticket number)
- EXIT

- **MODULE 1: FLIGHT DETAILS**

This module is used to view the flight details with ease and it tends the passenger to book tickets without much difficulty.

- **MODULE 2: CHECK AVAILABILITY**

This module is used to check the availability of the flights and the information of the seats in that flight.

- **MODULE 3: SINGLE PASSENGER RECORD**

This module is used to view the single passenger details with the help of the ticket number issued after booking with input support information.

- **MODULE 4: BOOK TICKET**

This module is used to book the ticket after checking the availability of tickets in the flights. A ticket can be booked to a maximum of five just by entering the passenger name, age and their details.

- **MODULE 5: EXIT**

This module is used to exit from the reservation form.

3. System Architecture

3.1 Architecture Design

- **ERD (Entity Relationship Diagram)**

The object relationship pair can be graphically represented by a diagram called Entity Relationship Diagram. It is mainly used in database applications but now it is more commonly used in data design. The primary purpose of ERD is to represent the relationship between data objects.

Various components of ERD are:

1. Entity
2. Relationship
3. Attribute.

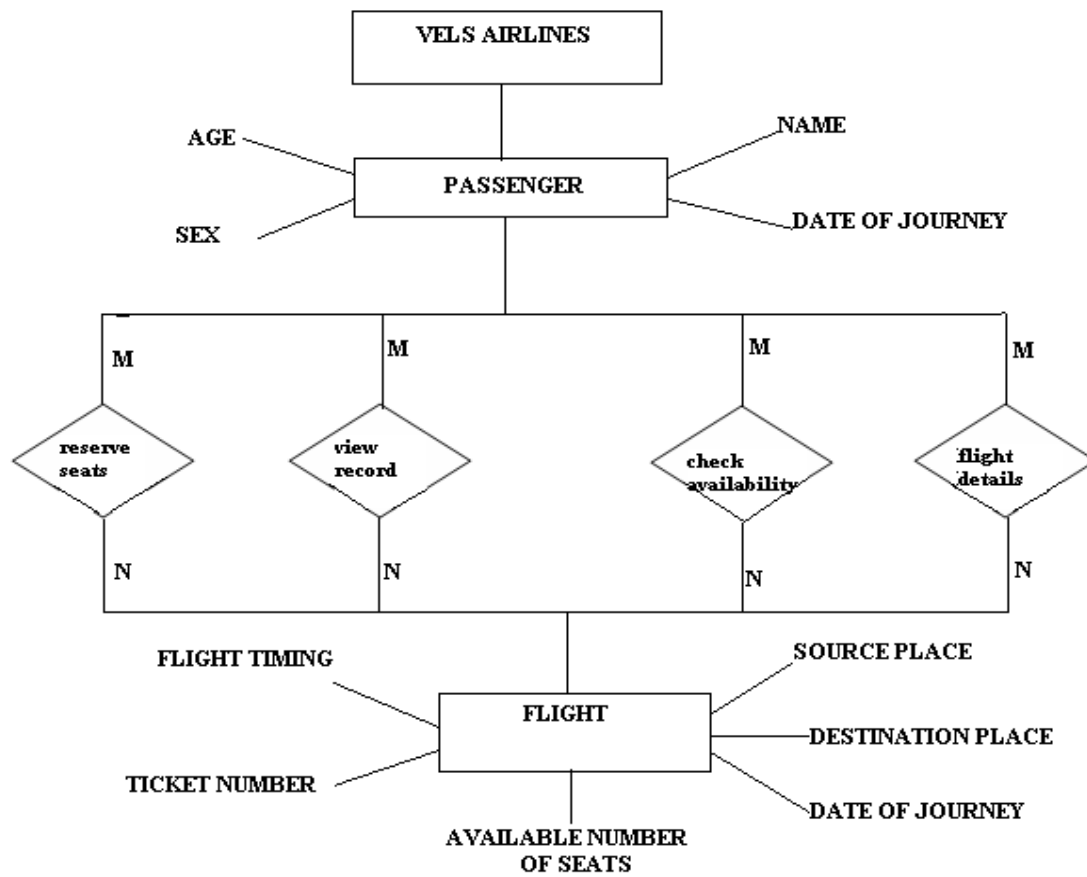
- **DFD (DATA FLOW DIAGRAM)**

Data Flow Diagram is one of the Functional Model which are used to represent the flow of information in any computer based system. Three Generic Functionalities:

1. Input
2. Process
3. Output

The data flow diagram depicts the information flow and the transforms that are applied on the data as it moves from input to output.

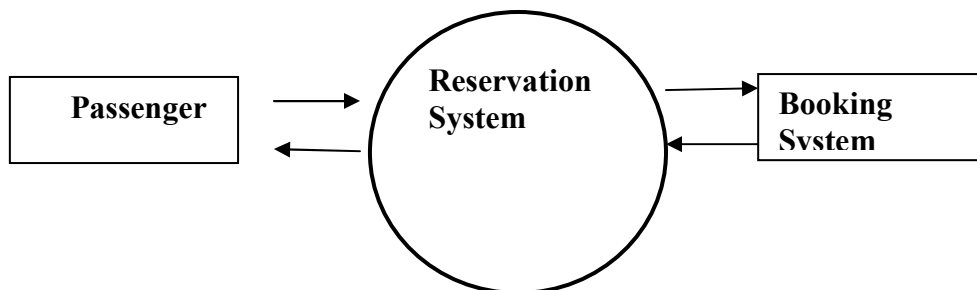
- ENTITY RELATIONSHIP DIAGRAM



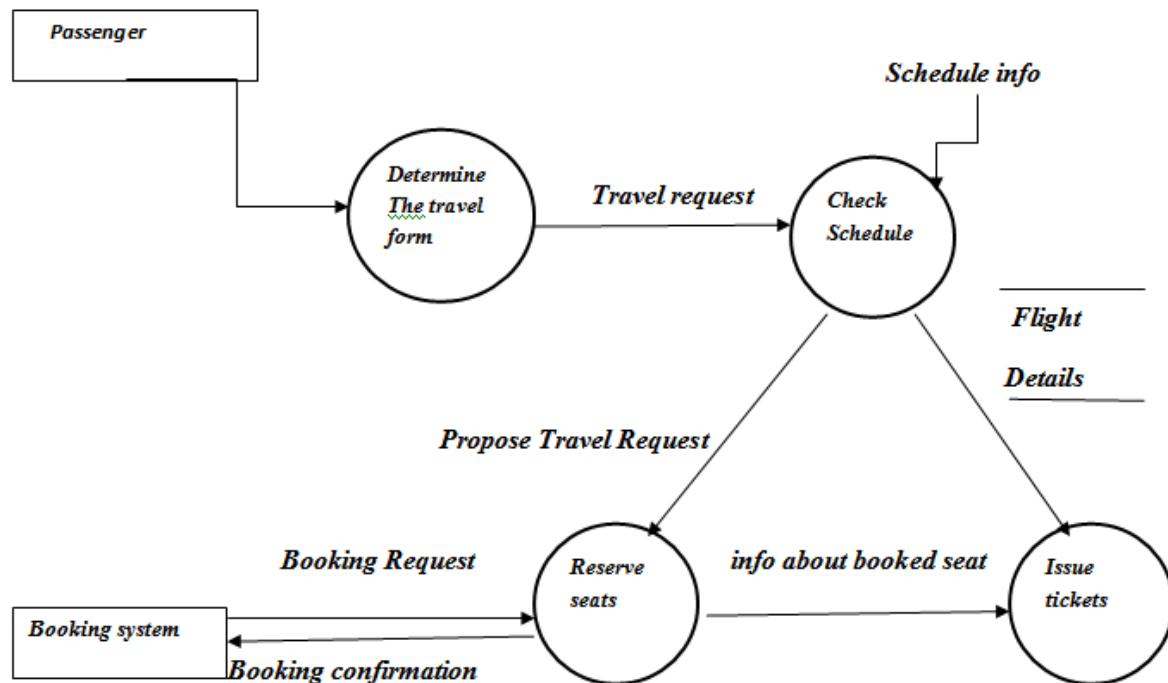
3.2 Decomposition Description

DATA FLOW DIAGRAM:

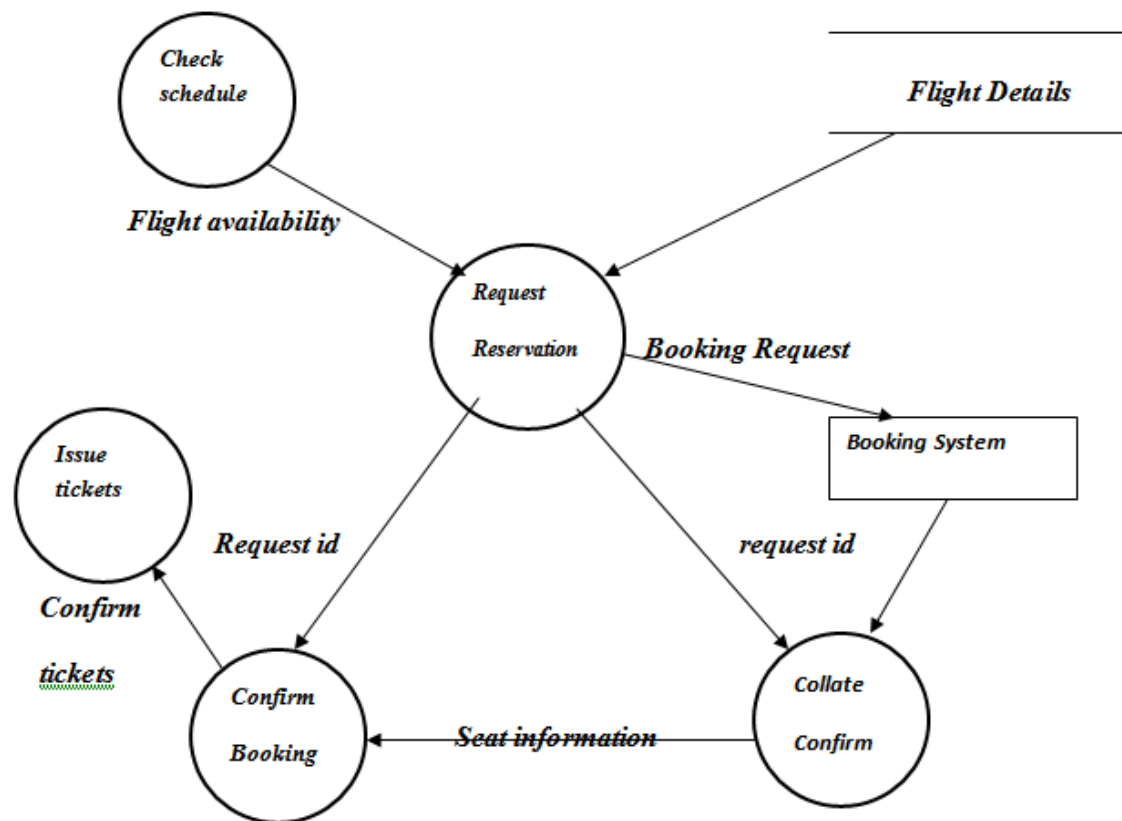
LEVEL 0: CONTEXT DIAGRAM



LEVEL 1



LEVEL2



3.3 Design Rationale

The algorithm is developed as flow chart and the data flow diagrams, to describe the step-wise procedure of the application. The basic requirements, which are got from the customer, should all be covered in this algorithm developed. Most components described in the system architecture section will require a more detailed discussion. Other lower-level components may need to be described as well. The kind of component, such as a subsystem like delete, insert, module like student detail, class like library, package, function, file etc. The specific purpose and semantic meaning of the component describe this. This may need to refer back to the requirement specification.

4. Data Design

This section describes the category of data required by the system. Because there is no actual complete data set available for use we will produce the needed data synthetically. This data will be more formally represented in our entity relational design data model.

4.1 Data Description

- A List of Airports including:
 - Airport Name
 - Abbreviation
 - Location
 - City
 - State
 - zip code (If possible)
 - Time zone
- The information about several Flights, more specifically:
 - Flight id
 - Airline
 - Flight number
 - Departure/Arrival Date/Time
 - Departure/Destination Airport
 - Seats
 - Total / Vacant
 - Seat Number
 - First Seats
 - Coach Seats
 - Type plane
 - Fare
- Information of Reservations made:
 - Flights id
 - Email
 - Passenger names
 - Credit card type/number
 - Address
 - Total Price
- User Information, most importantly containing:
 - Email
 - Password
 - Reservations

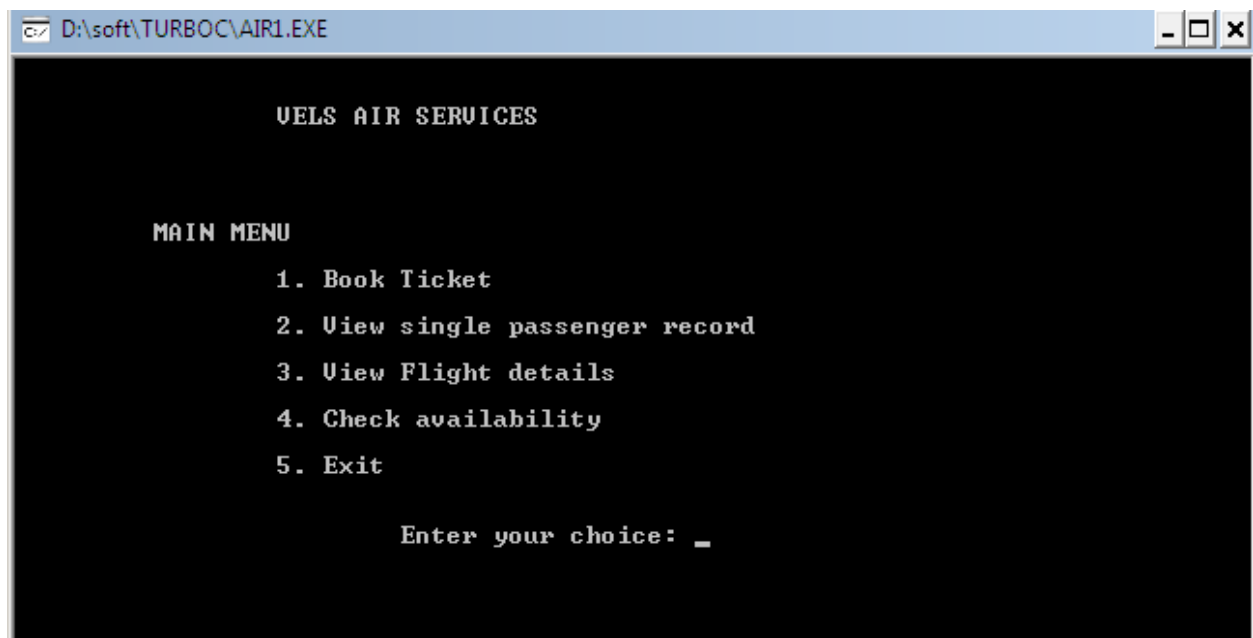
5. Human Interface Design

5.1 Overview of User Interface

In software engineering the software maintenance is the process of enhancing and optimizing deployed software as well as remedying defects.

Software maintenance is one of the phases in the software development process and follows deployment of the software into the field. The software maintenance phase involves changes to the software in order to correct defects and deficiencies found during the field usage as well as the addition of new functionality to improve the software usability and applicability.

5.2 Screen Images



VIEW FLIGHT DETAIL

VELS AIRSERVICES					
Fl.No	Name	Source	Dest	Availseats	Cost
0	airindia	chennai<12:30>	mumbai<5:30>	250	Rs.2000
1	jetairways	delhi<15:45>	madurai<23:45>	150	Rs.3000
2	spicejet	madurai<2:30>	chennai<6:00>	75	Rs.1200_

CHECK AVAILABILITY

Enter the flight number: 2

Flight Number: 2
Flight Name : spicejet
Source place : madurai
@ 2:30
Destination : chennai
@ 6:00

Seats currently available: 75
Cost per seat: Rs.1200.00

BOOK TICKET

```
D:\soft\TURBOC\AIR1.EXE

Ticket number : 1003
Flight number : 1
Flight Name : jetairways
Date of travel : 22/05/09
Name of passenger : JEYAMANI
Sex : F
Age : 62concession available
Total amount : Rs.1500.00

Are you sure you want to save the above details ? (y/n)
y

Ticket booked successfully !
Press any key to continue...
```

VIEW SINGLE PASSENGER RECORD

```
D:\soft\TURBOC\AIR1.EXE

Enter your ticket number: 1002

Ticket number : 1002
Flight number : 1
Flight name : jetairways
Name of passenger : ANJANA
Sex : F
Age : 20
Total amount : Rs.3000.00

Catch your flight @ delhi @ 15:45 on 23/05/09
to reach madurai @23:45_
```

6. Requirements Matrix

Req #	Description
REQ-SR1	The database backend system in text file.
REQ-SR2	The Front-end and middle logic will be written using C.