El-Al
Flight Reservation System (FRS)

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Scope of Project

The scope of the project is as following:

a. Provide a high level design
b. Provide a detailed level design
c. Provide an implementation using C++.

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1. INTRODUCTION

El-Al FRS is Client/Server application which provides flights across the world. In order to improve the service to the passengers, and to ensure that the flight scheduling process runs smoothly, a computer flight reservation system has to be developed. The application will be a multi-user system which allows connection to El-Al FRS, which is the Server application.

2. SOFTWARE REQUIREMENTS

2.1. Functional Requirements

2.2. All requirements are specified in terms of a requirement id, title, brief description, entity preconditions, exception handling and remarks <functional requirement name and description>

2.2.1. Add passenger

Book a passenger on a given flight - noting any preferences for a seat as well as a class designation;

2.2.2. Remove passenger

Delete a passenger from ElAl's list of passengers.

2.2.3. Get passenger data

Query passenger information. by ticket number

Should be able to:

- display list of flights on which a given passenger is booked
- display passenger information (name, address....).

2.2.4. Get boarding pass

Issue a boarding pass - to a passenger upon checking in at the airport.

2.2.5. Add light

Add a new flight to the flight schedule

Relevant Information:

- departure and destination locations, dates and times
- flight number

This routine enables a supervisor to add flights.

2.2.6. Get flight data

Provide summary information of a specific flight - such as seating capacity, remaining seats, list of passengers and ticket numbers etc.

2.2.7. Remove flight

Cancel a flight from the flight schedule

This routine enables a supervisor to cancel flights.

2.2.8. Update flight

Alter specific flight information such as a flight's time of departure, seating capacity etc.;

2.2.9. Get flights list

Provide a list of available flights satisfying certain criteria; (e.g. List any flights from Tel-Aviv to London between March 3 and March 5).

2.2.10. Add booking

Add Booking - this option is used to manage a passenger within a flight.

Relevant Information:

- Passenger Name, Address, Phone Number
- Flight Number
- Amount Paid
- Ticket Number

2.2.11. Delete booking

Delete Booking - this option is used to manage a passenger within a flight.

2.2.12. Update booking

Update Booking - rebooking passengers on the rescheduled flight.

2.2.13. Get bookings

Return flight's tickets' numbers by flight number.

2.2.14. Add seat

Add Seat Selection: This option is used to assign a passenger to a seat on the flight.

Relevant Information:

- Ticket Number
- Seat Number

2.2.15. Delete seat

Delete Seat Selection

2.2.16. Update seat

This option is used to assign a passenger to a different seat from his original choice.

3. MAIN SOFTWARE ARCHITECTURE COMPONENTS

3.1. System Components (packages)

This section describes the decomposition of the software into components and provides a short description of the components and their responsibilities

3.1.1. Passenger manager

Contains list of passengers including personal details:

Name, id, address, phone number

Responsibilities:

Add/remove passenger to/from the list.

Provide passenger personal details to other components.

Passenger Data:

- Passenger Name, Address, Phone Number
- Flight Number
- Amount Paid
- Ticket Number

3.1.2. Flights manager

Contains list of flights each flight includes following details:

Flight number, departure place, destination, departure time, list of flight seats (taken/available).

Responsibilities:

Add/remove flight to/from the list.

Provide flight details to other components.

3.1.3. Booking manager

Contains list of tickets including following details:

Name, id, ticket number, seat number.

Responsibilities:

Add/remove ticket to/from the list.

Provide ticket details to other components.

4. SYSTEM OVERVIEW

4.1. 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.

4.2. 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.

4.3. Report Module

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

- Flight Details
- Check Availability
- Book Ticket
- View Passenger Record (By Taking The Ticket Number)

4.4. Flight Details

Used to view the flight details with ease and it tends the passenger to book tickets without much difficulty.

4.5. Check Availability

Used to check the availability of the flights and the information of the seats in that flight.

4.6. Single Passenger Record

Used to view the single passenger details with the help of the ticket number issued after booking with input support information.

4.7. Book Ticket

Used to book the ticket after checking the availability of tickets in the flights. A ticket can be booked just by entering the passenger id and name.