1 Introduction

1.1 Purpose

The SRS (Software Requirements Specification) is aimed at the implementation team and formulated by the design team of the Tour Scheduling program. The document serves as a guideline for general logic flow for the programmer and to establish restrictions, choices and expected inputs during the program.

1.2 Scope

The Super Scheduler-atron 4000 will allow the User to create and manage different Tours, manage Customers and make and manage Bookings for Customers. It also provides functionality to schedule a Bus for a Service during which time the Bus will not be available for operation on Tours.

The System will not manage Users or Busses as that is expected from a different, larger system of which this is part of.

1.3 Definitions, acronyms, and abbreviations

Customer A person that would like to book a Private or Public Tour with the company.

User An employee that will be using the program.

Scheduler A User that has been given certain permissions (Ref) to schedule Tours, make Bookings etc.

Private Tour A Tour that is requested to take a specific route with a Bus with a specified capacity. The Tour is not available to Customers other than the Customer who made the initial Booking.

Public Tour A Tour that was created by the Scheduler. It is available for Booking by any Customer as long as there is enough space on it.

System The software
1.4 References

Notes from the first meeting with the travel agency - http://cs.sun.ac.za/rw344/tut1.pdf

1.5 Overview

The rest of the SRS contains information regarding procedures to be followed during programming to ensure correct and optimal program flow, where the system fits into a larger system and the interfaces from the larger system that this system will depend on.

2 Overall Description

2.1 Product perspective

The program is part of a larger system and focuses on the ability to manage operations around a Tour booking business. The system will depend on information related to Busses and Drivers to be modified outside the scope of the current system but part of the larger system. For the system to function properly, it needs to be interfaced with the following services:

**User authentication service** The service must be able to take User credentials and inform the system of their validity and the role of the person in the larger system.

**Bus information service** The service must allow an authenticated User to obtain current information about the Busses available to the company. If no service is available an easily accessible storage space containing the information should be available.

**Bus Driver information service** The service must allow an authenticated User to obtain current information about the Bus Drivers in the larger system. If no service is available an easily accessible storage space containing the information should be available.

**Notification Service** The service should be able to immediately inform a specified Bus Driver about a new Booking that has been made. The Bus Driver and Booking information will be supplied.

2.2 Product functions

The main purpose of the Super Scheduler-atron 4000 is to allow a user to make bookings and schedule Tours and Bus services as easily as possible.
2.3 User characteristics

There is essentially two classes of Users: the User that inputs all the necessary data into the system and the Drivers that can view the tours they are scheduled for. The User that creates the Tour schedules, inserts and updates customer details and schedules Busses for service requires all necessary info to do so.

2.4 Constraints

2.5 Assumptions and Dependencies

A number of factors that may affect the requirements specified in the SRS include:

- User data used for authentication is given.
- Data of the Busses that is going to be used for the tours is given.

3 Specific Requirements

3.1 Functional Requirements

3.1.1 Authentication

1. A User shall be authenticated by an external service.

   1.1 A User must be authenticated successfully to be able to use the system.

   1.2 A User gets access to the system according to the User’s role.

   1.2.1 If the User is a Scheduler access to the following parts are granted:

        1.2.1.1 Customer Management (3.1.2)
        1.2.1.2 Bookings (3.1.3)
        1.2.1.3 Tour Schedule (3.1.4)
        1.2.1.4 Bus Servicing (3.1.5)

   1.2.2 If the User is a Bus Driver no direct access is given to the system.

3.1.2 Customer Management

1. The System shall be able to look up a Customer.

   1.1 A look up shall only occur if the User has is authenticated and has appropriate access (Req 3.1.1).

2. The System shall be able to add a new Customer to the system.
2.1 Adding a Customer shall only occur if the following criteria has been satisfied:
   2.1.1 The User is authenticated and has appropriate access (Req 3.1.1).
   2.1.2 The User has captured the following Customer details:
       2.1.2.1 Name
       2.1.2.2 Cell phone number

2.2 If adding a Customer is allowed, the system will save the Customer.

3. The System shall be able to modify the information of an existing Customer.
   3.1 If the Customer has been looked up successfully (Req 3.1.2 - 1).
   3.2 Req 2a has also been satisfied.
   3.3 If modifying the Customer is allowed, the system will update the existing Customer.

3.1.3 Bookings

1. The System shall be able to make a Public Booking
   1.1 The User selects the Tour chosen by the Customer (Req 3.1.4 - 3).
   1.2 The User captures the amount of seats specified by the Customer.
   1.3 A Public Booking shall be made only if:
       1.3.1 The User is authenticated and has appropriate access (Req 3.1.1).
       1.3.2 The Customer exists (Req 3.1.2 - 1).
       1.3.3 The selected Tour has enough available seats.
   1.4 If making the Public Booking is allowed:
       1.4.1 The system will modify the amount of available seats of the Tour by subtracting the amount of seats of the Booking from the amount of seats available before the Booking was made.
       1.4.2 The Booking is linked to the Customer in the system.

2. The System shall be able to make a Private Booking
   2.1 The User captures the route for the Tour as specified by the Customer.
   2.2 The User captures the amount of seats that the Customer would like to book.
   2.3 A Private Booking shall be made only if:
       2.3.1 The User is authenticated and has appropriate access (Req 3.1.1).
   2.4 The captured information gets passed to 3.1.4 - 2, a message will display if the Private Booking was successful.

3. The System shall be able to Change a Booking
   3.1 The Customer’s Booking is looked up.
3.2 The User captures the new amount of seats specified by the Customer.

3.3 The Booking shall only be changed if:

3.3.1 The User is authenticated and has appropriate access (Req 3.1.1).
3.3.2 The Customer exists (Req 3.1.2 - 1).
3.3.3 The Booking for the Customer exists.

3.4 If the change is allowed, the number of available seats for the Tour is updated to reflect the modified Booking.

3.1.4 Tour Schedule

1. The System shall be able to create a Public Tour

1.1 The User specifies the following:

1.1.1 Route
1.1.2 Bus
1.1.3 Driver
1.1.4 Date/Time
1.1.5 Name for the Tour (Easily identify Tour)

1.2 The Public Tour shall only be added if:

1.2.1 The User is authenticated and has appropriate access (Req 3.1.1).
1.2.2 The Bus is not already scheduled during that time for a Service or Tour.
1.2.3 The Driver is not already scheduled during that time for a Tour.
1.2.4 The Route and Bus are compatible.
1.2.4.1 Sightseeing Bus for circular Route.
1.2.4.2 Overland Bus for Routes from A to B.

1.3 If the Public Tour is allowed to be added, the System will reserve that Bus and Driver for the specified Date/Time. The Driver will also be notified immediately via an external service.

2. The System shall be able to create a Private Tour

2.1 The System receives the Route, Date/Time and number of seats that the Bus should accommodate for from (Req 3.1.3 - 2d).
2.2 The System shows a list of available Busses that meet the seating requirement and is available for the specified Date/Time.
2.3 The System shows a list of available Drivers that are available for the specified Date/Time.
2.4 The User selects a Bus and Driver.
2.5 The Private Booking shall only be made if:

2.5.1 The User is authenticated and has appropriate access (Req 3.1.1).
2.5.2 The Bus meets the following requirements:
   2.5.2.1 Has enough seats
   2.5.2.2 Is not already scheduled during the specified Date/Time for a Tour or Service.
   2.5.3 The Driver is not already scheduled during the specified Date/Time for a Tour.

2.6 If the Private Tour is allowed to be added, the System will reserve the Bus and Driver for that time. The Driver will also be notified immediately via an external service.

3. The System shall be able to look up a Public Tour
   3.1 The User enters a name or part of a name as a search term to find a Public Tour.
   3.2 The System shall show Tours with the matching terms if:
      3.2.1 The User is authenticated and has appropriate access (Req 3.1.1).
      3.2.2 The search term was not empty
   3.3 If the search is allowed, the System will show a list of Tours matching the search term.

4. The System shall notify the selected Driver of the scheduled Tour after the creation of the Tour.

3.1.5 Bus Servicing
   1. The System shall be able to schedule a Bus for a service
      1.1 The System shall be able to schedule a Bus for a service.
      1.2 The User will select one of the Busses from the System.
      1.3 The User specified the following:
         1.3.1 The Date the Bus is scheduled for the service.
         1.3.2 The Date the Bus will return from the service.
      1.4 The Bus shall only be scheduled for a service if:
         1.4.1 The User is authenticated and has appropriate access (Req 3.1.1).
         1.4.2 The Bus is in the System.
         1.4.3 The Bus is not already scheduled for a Tour between or on the dates the Bus will be in for the service.
      1.5 If scheduling the service is allowed, the System will mark the Bus unavailable between and on the dates specified for the service.