Software Requirement Specification

Project Name: Railway Reservation System

Team Members:

1. **Karin Esam El-Nagy.**
2. **Magy Hamdy Waseily.**

1. Introduction

1.1 Purpose

- The purpose of this documentation is to describe the railway reservation system.
- This documentation shows the functions of system and use case for each function and non-functions of system.
- Additional to show the scope of the system which uses this system, constrains of system which should be applied and the requirements of system.

1.2 Intended Audience and Reading Suggestions

- The different types of readers are **Customers**, **Developers**, **Management people** and Specifically **Passengers**.

1.3 Product Scope

- "Railways Reservation system" is an attempt to simulate the basic concepts of an electronic reservation system.
- The system helps passengers to book a ticket easily by selecting the train details, the available seat and time then prints the ticket immediately.

2. Overall Description

2.1 Product Perspective

The existing system suffered from many problems such as:

- The existing system is sluggish and consumes a lot of time causing inconvenience to users (passengers).
- Due to manual nature (counter clerk), it is difficult to update, delete, add or view the tickets.
- When the number of passengers have increased, maintaining and retrieving detailed record of passenger is extremely difficult.

So, the railway reservation system replaces the work of counter clerk and solves the problems such as:

- The system performs all calculations. (Chances of errors are zero.)
- The passenger, reservation and cancellation list can easily be retrieved and any required addition, deletion or updating can be performed.
- The system provides for user-SSN and Phone validation. (Unauthorized access is prevented).

2.2 Product Functions

- Selection: This function allows a passenger to select from the displayed list :

1. Train type
2. Date, time and place of departure
3. Date, time and place of arrival
4. The number of tickets.

- Reservation and Validation: This function allows a passenger to enter SSN and phone number to be validated.
- Payment: This function allows to complete the reservation which a passenger enters the price cash and print the tickets.
- Cancellation: This function allows a passenger to cancel the reservation.

2.3 User Classes and Characteristics

- The system is used by users (passengers).
- Passenger selects the train information, writes his/her SSN and phone number and enters the amount.
- If passenger wants to cancel the ticket, should paid the half of amount.

2.4 Operating Environment

- Hardware:

- Operating system: supports operating system from windows 7.
- Printer (to print the tickets).
- RAM 1TB.
- Touch Screen (to select the train information).
- Cash dispenser (to enter the amount).
- Keyboard (to write SSN and phone number).
- CPU – Intel Core i7 Duo E7300.
- Hard Disk – 100GB.

- Software:

- Designing: Visual C#.
- Language: Microsoft C#.
- The systems must be connected via LAN and connection to internet.
- Microsoft SQL server.

2.5 Design and Implementation Constraints

- Languages: Arabic and English.
- Cash: Egyptian Pound (EGP).
- Required to be selected all train information and be written SSN and phone number correctly.

2.6 Assumptions and Dependencies

- If users write an incorrect SSN or Phone number (Unauthorized) then the system can't identify and authorize the user.
- If users enter an incorrect amount in cash dispenser then the system can't complete the reservation and print the tickets.

- The system depends on the Internet, which if any problem occurs in the Internet or system disconnect with the Internet, the system stopes until the Internet problem is resolved.
- The system

3. External Interface Requirements

3.1 Software Interfaces

4. System Features

5. Other Nonfunctional Requirements

5.1 Non-functional Requirements

- Each process of reservation and payment will take maximum 2 minutes causes' efficiency of the system.
- Response of cancellation process in database will take maximum 5 minutes.
- Changes of train details in database do immediately to be able to be reserved by another user.
- The system will use Cloud Computing to back up the database of system which be protected from damaging.
- In case of a hardware failure or database corruption, an error message will be shown and backups the database should be retrieved from the server and saved by the system. Then the system will be restarted.
- The system will be secure about user's SSN and phone number.

5.2 Software Quality Attributes

- The system must be available 24 hours all days, only restricted by the down time of the server on which the system runs.
- The system must display the corrected information about train from Egyptian National Railways.
- The system must display the corrected amount of tickets.
- The user can edit in the ticket before reservation or cancel the reservation.
- The user exchanges his/her phone number with system and system makes use of it to send code to user by which can cancel and validate the reservation.
- The system is easy to be used which displays descriptive messages / instructions after doing each process and is written by English and Arabic.