Software Requirements Specification

For

Railway Database Management System

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Chapter 1

1. Introduction

1.1 Purpose:

Main objective of this report is to use the information technology in that way for this people maintain their time. This information system is regards for Bangladesh Railway. Other main points are get all the service information of the Bangladesh Railways and maintaining a central data base. The propose system is more organized system for Bangladesh Railway than the manual. The main purpose is to reduce suffering of the travelers.

1.2 Intended Audience:

Railway Database Management System contains the details about train schedules and its train route, purchase ticket, purchase history etc. Passenger can easily search the train route where they want to go. Passenger can easily buy the train ticket by selecting the source station and destination Station, date and seats. So we maintaining a central data base to reduce suffering of the travelers.

1.3 Intended use:

No specific standard has been followed when creating this srs. Some special significance is given to font size and font decoration, i.e. bold, underlined etc. Larger font sizes are used for headings and bold font is used for titles or list items.

1.4 Product Scope:

The software is a system that is relevant to the current Covid-19 situation. This project is about creating the database about Railway Database Management System. The railway database system facilitates the passengers to enquire about the trains available on the basis of source and destination, booking of tickets, enquire about the status of the booked ticket etc. and facilitates with many other things.

Chapter 2

2. Overall Description

2.1 User Classes and Characteristics:

2.1.1 Admin: This page acts as a admin dashboard for the Admin. It contains several information like- set fare query, set train information, set train route, purchase history and admin profiles. If user clicks on any of this options they will be redirected to that page.

2.1.2 User panel: This page acts as a dashboard for the user. It contains several information like- fare query, train information & route, purchase ticket, purchase history and contact us. If user clicks on any of this options they will be redirected to that page.

2.2 User Needs: It is simple to understand and can be used by anyone who is not even familiar with simple system. It is user friendly and just asks the user to follow step by step operations by giving him few options. It is fast and can perform many operations.

2.3 Operating Environment: The system should operate on Windows, Mac, Android, IOS. This is so that all employees can be accommodated. However, as office work is limited when performing on a phone, the ideal operating environment will be on a PC, so either Windows or Mac.

2.4 Constraints: Hardware limitations will be the biggest issue. The passengers will need to register in the website to access all the things. Admin will basically monitor and maintain the whole system.

2.5 Assumptions:

2.5.1. It is assumed that the user is familiar with the basic computer fundamentals.

2.5.2. Timely backup of data should be taken to avoid data loss in case of system crash.

2.5.3. The use of pirated software should be avoided as it may lead to data loss and system crashes due to viral infections.

2.5.4. Floppies and other removable media should be scanned for viruses before use.

2.5.5. Proper configuration of the client, database server and network is necessary for the system to function as intended.

2.5.6. It is assumed that the maintenance of the database will be assigned to the authorized person only.

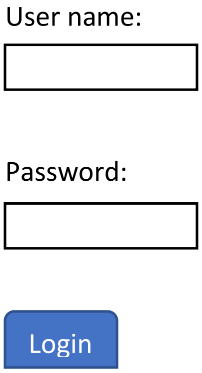
2.5.7. Only authorized persons will be allowed inside the server room.

Chapter 3

3. Functional Requirements

3**.1. User Interfaces**: The following images are some examples of what we are trying to achieve:

3**.1.1. SIGNIN PAGE**



User name:

Password:

Login

3.1.2. Sign up: Register as a new user needs username and new password to register. Users must give their email ID. User can fill other information if s/he wants.

3.2. Hardware Interfaces: The system will gather data from the monitor. The system will ideally also gather data from the input devices. All the inputs will not be used and there will be algorithms to ensure that the system does not store more data than necessary.

3.3. Software Interfaces: For now we will assume that all the user will use Microsoft Office and some internet browser. For the browser, we may add a browser integration. For Office, we will take help from the browser.

3.4. Communications Interfaces: The software must send emails to notify either the admin or user of certain situations. The software may email reports to the admin, it may send the user report to the user so that they may review their work etc.

3.5. Some   business requirements have not been mentioned as this software is not being made for commercial use. As such, if a company were to approach for use of the product, business requirements will be determined through meeting with them.

3.6. Legal requirements have not been mentioned either. While copyright law and such may be acquired, we are creating the software as open-source software and so legal requirements may not apply

4. Nonfunctional Requirements

4.1. Performance Requirements:

4.1.1. The system must be able to load in 2-3 seconds. The hope is that the delay will be as slow as possible. 2-3 seconds is a viable goal and it is also fast enough that disruptions at work is not an issue.

4.1.2. The system must be able to handle 100 user. As this is being made for a project we are not planning to make it handle an immense workload. Also, most companies, at least small scale ones, will not need more than a 100 user.

4.1.3. The functions should be carried out instantaneously or at least as fast as possible. Hopefully it can be in the 2-3 second range given above or even faster.

4.2. Safety Requirements:

Loss of data from the server being offline is a possibility. So the server must have enough backup power that it does not suddenly go offline during the workday.

4.3. Security Requirements:

4.3.1. The first login from the Admin will require a two-factor authentication. First, the Admin must verify themselves using an OTP service. After that the Admin will create a profile and password. Two-factor authentication will be used, so the Admin will receive another OTP. Once the Admin is successfully verified, the privileges will be granted.

4.3.2. The user will have to verify themselves when creating their accounts. They will do this via a workplace invitation link sent to their emails. All they have to do is click on it and then they can create their accounts like the admin.

4.3.3. If there is inactivity for five minutes, the session will expire.

4.3.4. If login attempts are failed three times consecutively, the user will be locked out of their account. They will have to then verify themselves using an OTP and a PIN issued during the time of account creation.

4.3.5. Forgotten passwords will be resolved by the OTP.

4.3.6. Any issued OTP will last for 5 minutes.

4.4. Software Quality Attributes: The main focus will be on the following:

4.4.1. Adaptability: We will try to make the software as generic as possible so that it can be adapted to suit the needs of individual businesses. The core functionality of the product will not change however.

4.4.2. Flexibility: There will also be as much flexibility as possible. Changes can be made without losing the core function of the software and the software can even be improved through in-house tinkering with the source code. There will be some information in a readme file with the software detailing the things that should not be changed in the code.

4.4.3. Maintainability: Without a high degree of maintainability a product is functionally useless. We hope to achieve a high level of maintainability to satisfy the business or company.

4.4.4. Portability: Initially the system will be built for windows. Then we will adapt the system to work on other Operating Systems. As there may be a variety of devices that employees may use, we need a high degree of portability.

4.5. Business Rules:

4.5.1. Admins will receive admin functionality. Which means that apart from logging in and out, they will be able to edit the reports made by the system. They will be the sole people responsible for submitting the report.

4.5.2. Employees will be able to log in and out. They will be able to clock in, which will be the cue for the system to start monitoring. 6.

Future Plan: Due to the constraint of time we can’t include some more features. But in future we will add some features in this project like GPS for tracking the train, google logging system, payment method, make an android app and many other things.