Software Requirements Specification

for

City Transportation System

Version 1.0 approved

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20th August 2022

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of the software is to provide users with information about the local transportation systems ,timings, maps, directions and other related information on one app.This will help the commuters to plan their travel accordingly and also will ease out commuting through various public transport.

1.2 Document Conventions

Important points have been underlined to provide emphasis. Headings and Subheadings have been written in bold font to provide emphasis. The points in all sections have been written in the order of their priority, from higher priority points to lower priority points, so that important points are not missed out. Abbreviations are used in some places which will be understood by the developers of the application.

1.3 Intended Audience and Reading Suggestions

The intended audience is the team of developers who will be designing and implementing the Transport management System. Also, the document is to be utilized by the testing team who will be testing and evaluating the performance and design of the application. The document consists of all the necessary information that will be required by the team of software engineers who will be working on the project

1.4 Product Scope

The transport system will have a real time database that will be updated as and when required so that the users get an updated experience.Also the application will have certain related advertisements to generate revenue and maintain the app In future we intend to add live location feature which will help the users to know where the transport vehicle is in real time .

1.5 References

React: https://reactjs.org/docs/getting-started.html

2. Overall Description

2.1 Product Perspective

Remembering train timings from daily travel can be tedious if you have an app which lets you know the exact timing of the various public transport and also give you information on how to travel from one point to another in the city in an interactive way is a blessing.this eliminates confusion for the commuters and also helps tourists to find their way through the city easily.

2.2 Product Functions

- *Commuters don't have to worry about the frequency of the transport facility*
- *Exact updated timings are displayed*
- *Forum section can be used by anyone to provide and relay information*
- *Foreign tourists can travel without any language barrier*
- *Commuting through the city becomes easy*

2.3 User Classes and Characteristics

There is only one class of users and that is the commuters.there is not differentiation for different types of users as app will function similarly for everybody

2.4 Operating Environment

Since the application is a web application it can work on any device having a browser.

· Device: Mobile Phone, Computer, Laptops, Tablets.

· Operating System: Windows, Linux distributions, Mac OS, Android

· RAM: 128 MB or more Management System Page 4

· Disk Space: 20 MB or more.

· Browsers: Mozilla Firefox 30+, Google Chrome 27.0+, Microsoft Edge. Other browsers can also be used.

· Internet connection: Strong internet connection with speed of at least 1 Mbps for best experience.

2.5 Design and Implementation Constraints

CO-1: The time allotted for this project is at most 3 months.

CO-2: The front end of the application will be made using HTML, CSS and JavaScript.

CO-3: Python will be used as the language for the backend of the application and PostgreSQL will be used for the database of the application.

CO-4: The website will be in English language. Users who do not know English will face difficulties in using the website.

2.6 User Documentation

Appropriate instructions will be provided at every step in the application to ensure the users do not face any difficulties while using the application. In future, we plan to add a chatbot to guide users in case they face any difficulties. Instructions will be given while filling out forms, adding photos and locations. Proper error messages will be displayed in case the user.Inadvertently fills wrong information or makes any mistake while using the application

2.7 Assumptions and Dependencies

The application is developed with the assumption that the user is well versed with the English language. It is also assumed that the user knows how to keep the smartphone and the application up to date with the latest software updates.

The accuracy of the live tracking feature is dependent on the accuracy and version of API used to implement the same.

3. External Interface Requirements

3.1. User Interfaces

UI-1:-

The app landing page will have all the transportation options. The user can then select any one mode of transport to proceed further.

UI-2:-

The transport page of the transport option selected by the user will then open for the user to then select the current stop/location the user is present on and select the destination/last stop.

UI-3:-

The time-table page then opens up to show the user the current schedule of the respective transportation system.

UI-4:-

The user can then click on a particular train/bus to see the detailed summary of the same.

3.2. Hardware Interfaces

N/A

3.3. Software Interfaces

- Browsers:- Mozilla Firefox 30+, Google Chrome 27.0+, Safari 10.0+ are the preferred browsers.
- Operating System: Android, Windows 7, 8, 10, Mac OS, Linux distributions.

3.4. Communications Interfaces

The application will be using HTTPS protocol.

4. System Features

4.1. Transport Option Dashboard

<Don't really say "System Feature 1." State the feature name in just a few words.>

4.1.1 Description and Priority

This app features all types of transportation systems and their respective timetables. When starting the app, the user can see all the transportation options together from which he/she can select a specific transportation system to view detailed information about the same.

4.1.2 Stimulus/Response Sequences

After selecting a specific transport option, the user will be directed to another page showing detailed information about the option selected.

4.1.3 Functional Requirements

REQ-1: This feature will be implemented using HTML, CSS and JavaScript. The page will be designed using CSS attributes.

4.2. Live Tracking

4.2.1 Description and Priority

This app will provide live tracking for all transport options for all the transport options.

4.2.2 Stimulus/Response Sequences

The user will be be able to view the real time location of the transport option selected from the dashboard.

4.2.3 Functional Requirements

REQ-1: This feature will be implemented using a web based API.

4.3. Live Chatting and Forums

4.2.1 Description and Priority

This app will provide a live chat feature and a forum amongst users to discuss and provide latest updates in real time.

4.2.2 Stimulus/Response Sequences

The user can access this feature from the dashboard of the app.

4.2.3 Functional Requirements

REQ-1: This feature will be implemented using HTML, CSS and JavaScript. The page will be designed using CSS attributes.

5. Other Nonfunctional Requirements

5.1. Performance Requirements

Scalability:-

This Web Application should perform without any interruption for all users and should be scalable in the future.

5.2. Safety Requirements

- All the code (both admin and user) should be backed up regularly to avoid any issues.
- Backup Power Supply should be present for the server to store all the information.
- Any API's used should be publicly declared and available.
- The admin module acts separately from the user module.

5.3. Security Requirements

- Each admin is given an Admin-ID a 10 character long password with the following restrictions:-
  - It should contain at least one digit.
  - it should contain a special character.
  - It should contain one upper case letter,
- The admin module acts independently of the user module. Hence, any user cannot access the admin module without the password and Admin-ID.
- The website uses the latest HTTPS protocol for security.

5.4. Software Quality Attributes

5.4.1 Availability:-

- The system should be available at all times.
- The system should be reliable and accurate without any loss of data.

5.4.2 Usability:-

The user interface should be intuitive and easy for both the Admin and the User.

5.4.3 Maintainability:-

- The system should be free of bugs and updated regularly.
- Any bugs encountered should be resolved at the instant following with an update for the system.
- The code should be clean and comments should be added wherever necessary to explain the functions of the respective code segment.

5.4.4 Testability:-

The code should be written and tested with all proper test cases for the same. This should be done so that no errors are present during the production phase.

5.5. Business Rules

The Administrator is given all the permissions necessary to manage and control the system.

6. Other Requirements

Appendix A: Glossary

Chipset	In a computer system, a chipset is a set of electronic components in an integrated circuit known as a "Data Flow Management System" that manages the data flow between the processor, memory and peripherals. It is usually found on the motherboard.
Database	A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).
Network protocols	Network Protocols are a set of rules governing exchange of information in an easy, reliable and secure way. They incorporate all the processes requirements and constraints of initiating and accomplishing communication between computers, routers, servers and other network enabled devices.
Operating System (OS)	An Operating System (OS) is an interface between a computer user and computer hardware. An operating system is a software which performs all the basic tasks like file management, memory management, process management, handling input and output, and controlling peripheral devices such as disk drives and printers.
UI	The **user interface** (UI) is the point of human-computer interaction and communication in a device. This can include display screens, keyboards, a mouse and the appearance of a desktop.

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagram

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>