

Software Requirements specification

Document for metro rail management

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1Introduction

1.1 Purpose

This document is to provide a detailed description about requirements for the software. It will also explain the interfaces and its working. This document is intended to be submitted to the authority for its approval and a guide to the development of the first version

1.2 Scope

This document describes the requirements of the Metrorail management system. The system is an integrated service which provide information about the metro rail and its routes for the public interest. It provides services for users, station, masters, and head officers

The application provide services like:

Metro card

Enquiry

Route scheduling

Station management features

Ticket issuing

1.3 Product perspective

The system stores customer details(name ,address, id proof ,bank details only for metro card payments,)station master details for allocating station master for each staion,train details ,station details. Database is used to store data

1.3.1 System interface

The application runs in the latest version of Chrome or Firefox browser

1.3.2 User interface

The user interface has menus, toolbars, buttons, text box, dropdown box, dropdown list, hyperlinks etc. That allowing the users to communicate the application with the help of mouse and keyboard.

User registration page

User login page

Enquiry page

Fare

Metro card registration page

Metro card recharging

1.3.3 Hardware interface

The users only need a better mobile phone or pc with a good internet connectivity

1.3.4 Software interface

The system follows client server model

1.3.5 Communication interface

Uses https protocol for communication

1.3.6 Memory constraints

Uses only a minimal amount of memory

1.4 Product functions

The main function of this software product is to make the metro services easier for users and authorities like trip scheduling, easy enquiry, the main function of the metro management system are:

Adding new station

User sign up

Station master registration

Add bank for metro card payment

Ticket issuing

Adding station masters for each station

Adding travel rate

Metro card registration, approval, recharging

Trip scheduling

Enquiry about arrival of a train

1.5 User characteristics

There are three types of users can interact with the system they are user station master administrator. Through this website people can interact with the services of metro. There are two type of users private (registered) users and public users .users must register for getting a metro card.the system will notify the users when their card is overdue. A registered user can access the system by login using a unique user id and password .without the registration the user can only view the fare details, travel offers by metro, important notices and enquiry.

There is a station master for each station .only one station master is allowed to control a station by the administrator.it is the responsibility of station master to approve or reject the metro card request from a user.

The administrator controls the entire system. There are several responsibilities for admin adding new station, station masters, travel rate time scheduling. And also admin can block user and station master if they violate the rules of the system and metro

1.6 Assumptions and dependencies

For the proper working the users need an internet connection. For payment the users need a phone number .for payment and metro card registration the user must have an account in the specified bank. For registration of user and station master they need a valid id proof

1.7Acronyms and abbreviations

term	Definition
User	it may be private user (Those who have metro card)or public user (without metro card)
Stmaster	station masters of each station now
Admin	administrator head officer/team of metro
Metro card	Card for travelling, it is rechargeable

2 Requirements

2.1 External interfaces

There are mainly four types external interfaces they are user interfaces, hardware interfaces, software interfaces, communication interfaces

2.1.1 User interfaces

With the help of this interface user can interact with the system. Here which create using html, css and front end with the help of .net

2.1.2 Hardware interfaces

The local system is in ipv6 address format,

2.1.3 Software interfaces

The software system follows client server model. Different modules should communicate well for achieving the functions

2.1.4 Communication interfaces

The protocol using for communication is https

2.2 Functions

This section describes the functions performed by the software

2.2.1 Admin functions

2.2.2 Station master functions

2.2.3 User functions

2.2.1.1. Login

The administrator of the system can login using user id and password.admin doesn't need registration

2.2.1.2 Add new station

Admin can add new stations when metro is extended

2.2.1.3 Add fare zone

Admin can add new rates, or modify existing rate for travelling based on distance

2.2.1.4 Time scheduling

Admin can schedule trips for each day by setting intervals between trips

2.2.1.5 Add station master

Admin can add station masters for each station

2.2.1.6 Block

Admin can block station master or user

2.2.1.7 Add Bank

Admin add new banks for metro card payment

2.2.1.8 Gallery

Admin add photos

2.2.2.1 Registration

Station master need to register with valid documents, if the admin accept the application, allocate a station then she/he can login to the web site.

2.2.2.2 Login

An accepted station master can login to the system by using a unique user id and password

2.2.2.3 Accept metro card

Station master accept the metro card request from the user.

2.2.2.4 Ticket issuing

Station master can issue tickets using the software at counter

2.2.2.5 Report user

Reports violence (if using an invalid metro card) by the user to admin

2.2.3.1 Check fare

User can check the amount of travelling for each station by providing details of starting and destination (without login)

2.2.3.2 Enquiry

User can check the arrival time by giving details of starting and destination (without login)

2.2.3.3 Registration

User can register for using all features

2.2.3.4 Login

A registered user can login by using unique user id and password

2.2.3.5 Metro card

User can apply for a metro card using valid details and bank details

2.2.3.6 Recharge

User can recharge the metro card when it is expired

2.2.3.7 Complainants and feed back

User can send complaints and feed back

2.2.3.7 Edit profile

User can edit their profile

2.2.3.8 View gallery

User can view the gallery (without login)

2.3 Usability requirements

Usability requirements are expectations to ensure the service is easy to use. Here the users doesn't need any technical skills .but the should not try to use any violations like use of expired card .Administrators must provide correct fare details, notification at correct time. Station masters should provide information about the station to the administrators

2.4 Performance requirements

The system must show good performance. The responses must not be delayed. Notifications should provide at the right time. Payments must be in a secure manner.

2.5 Logical database requirements

The system need confidential information from users like bank details.so the details must store and processed in secure manner. MySQL is used as the back end, and normalization, and encryption techniques are used

2.6 Design constraints

The system should be simple with good performance. The design should be cost effective, it should be attractive, but reliable and easy to maintain. The responses should not delayed

2.7 Software system attribute

The web application should run in latest chrome .Firefox in windows, Mac os Linux os.The data should store in secure manner

3 Verification

This section verify all of the mentioned requirements have been satisfied by the system. This task involves making sure the requirements are correct and complete. The stake holders evaluate all requirements given by them are satisfied

4. Reference

Software requirement specification Document Reqview

<https://kochimetro.org>

<http://www.cse.chalmers.se>