

# THE METRO RAILWAY MANAGEMENT

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## ABSTRACT

*The system manages public feedback among services through its complain management system. Thus the system will also be containing an online ticket recharge module where users can recharge their smart cards online through the site. There is also an admin module where admin will be able to add stations. The trains routes and also update the fares. The admin should be a panel consisting of a group of authorized persons.*

## 1. INTRODUCTION

This is an integrated service which provide all information about the metro rail and it's routes for public. The proposed system is a web based application which provides information regarding timings, routes, fair. This system manages public feedback about services through it's complaint management system. This system also contains an online ticket recharge module where users can recharge their smart cards online through the site. There is also an admin module where admin can add stations, trains, routes and also update the fairs. The admin is a panel consisting of a group of authorized persons.

### 1.1 Existing System

In existing system there are flaws which really makes it an important issue to develop it. Some of them are information cannot be collected, processed and communicated more quickly and efficiently. Current working systems doesn't ensure that right information reaches the right person at the right time.

### 1.2 Solution to these problems

The proposed system is designed to eliminate the disadvantages of the existing system. The proposed system "Metro Rail Management System" is mentioned for tracing the problems in the existing system. Increased efficiency and reliability, easier Access. Easy to use, provide accurate information to the user for taking necessary decisions, accuracy-The information will be correct, accurate and unambiguous, efficiency-information can be collected, processed and communicated more quickly and efficiently, systems ensure that right information reaches the right person at the right time, reliability-since systems are free from boredom and tiredness, they work constantly on data to produce more reliable outputs, accessibility, usability and understandability, the options used can be easily accessed, used and realized.

## 2. CONVINIENCE STUDY

System design is the solution for the creation of a new system.

This phase focuses on the detailed implementation of the feasible system. It emphasis on translating design specifications to performance specification. System design has two phases of development

- Logical design

- Physical design

During logical design phase the analyst describes inputs (sources), outputs (destinations), databases (data stores) and procedures (data flows) all in a format that meets the user requirements. The analyst also specifies the needs of the user at a level that virtually determines the information flow in and out of the system and the data resources. Here the logical design is done through data flow diagrams and database design. The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which specify

exactly what the candidate system must do. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data and produce the required report on a hard copy or display it on the screen.

## 2.1 Theoretical Convenience

### DATABASE DESIGN:

Databases are the storehouses of data used in the software systems. The data is stored in tables inside the database. Several tables are created for the manipulation of the data for the system. Two essential settings for a database are

- Primary Key- the field that is unique for all the record occurrences.
- Foreign Key-the field used to set relation between tables.

Normalization is a technique to avoid redundancy in the tables.

## 2.2 Operational Convenience

The various system tools that have been used in developing both the front end and the back end of the project are being discussed in this chapter.

Front End: JSP, HTML, CSS, JAVA SCRIPTS are utilized to implement the frontend.

### Java Server Pages (JSP)

Different pages in the applications are designed using jsp. A Java Server Pages component is a type of Java servlet that is designed to fulfil the role of a user interface for a Java web application. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands. Using JSP, one can collect input from users through web page.

### HTML (Hyper Text Markup Language)

HTML is a syntax used to format a text document on the web.

### CSS (Cascading Style Sheets)

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language.

### Java Script

JS is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed.

Back End: The back end is implemented using MySQL which is used to design the databases.

### MySQL

MySQL is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language.

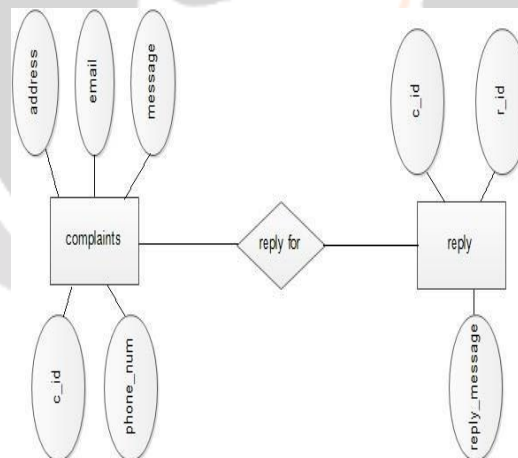
An application software called wamp was used to design the tables in MySQL.

## 3. SYSTEM DESIGN

System Design is the design that depicts all the working of a system. These designs are the plans and the work flows through which the desired system is to be constructed. Some of the diagrams that are to be discussed are architecture of the system, use case diagram and activity diagram.

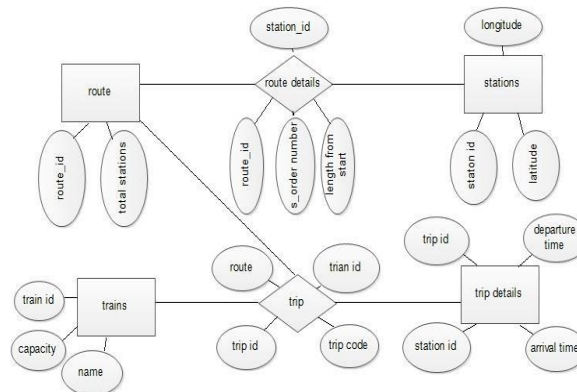
### 3.1 Architecture

Architecture is the basic working unit of a system. The different diagrams of the system are as follows:



**Fig -1:Complaint Management**

As we can observe from the above diagram reply for is the medium between complaints and the reply. When a complaint is to be registered addresses, email, messages, customer id as well as phone number is fetched or is obtained. And the reply mechanism works with the help of customer id and reply id with a reply message.



**Fig -2: Route and Trip Management**

From the above figure(fig-2), the entire route and trip management that is the architectural design of trains available, routes, stations, timings of train, details of the trip is explained.

### 3.2 Use Case Diagrams

A use case diagram is a structured analysis and design tool that can be used for flowcharting. A use case diagram is a network that describes the flow of data and the processes that change or transform the data throughout a system. This network is constructed by using a set of symbols that do not imply any physical implementation. So it is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of detail. DFD can be considered to an abstraction of the logic of an information-oriented or a process-oriented system flowchart. For these reasons DFD's are often referred to as logical data flow diagrams.

#### EXTERNAL ENTITY

An external entity is a source or destination of a data flow. Only those entities which originate or receive data are represented on a data flow diagram. The symbol used is a rectangular box.

#### PROCESS

A process shows a transformation or manipulation of data flow within the system. The symbol used is an oval shape.

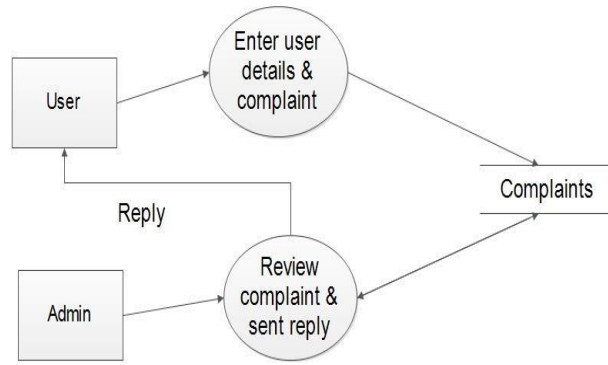
#### DATAFLOW

The data flow shows the flow of information from a source to its destination. Data flow is represented by a line, with arrowheads showing the direction of flow. Information always flows to or from a process and may be written, verbal or electronic. Each data flow may be referenced by the processes or data stores at its head and tail, or by a description of its contents.

#### DATA STORE

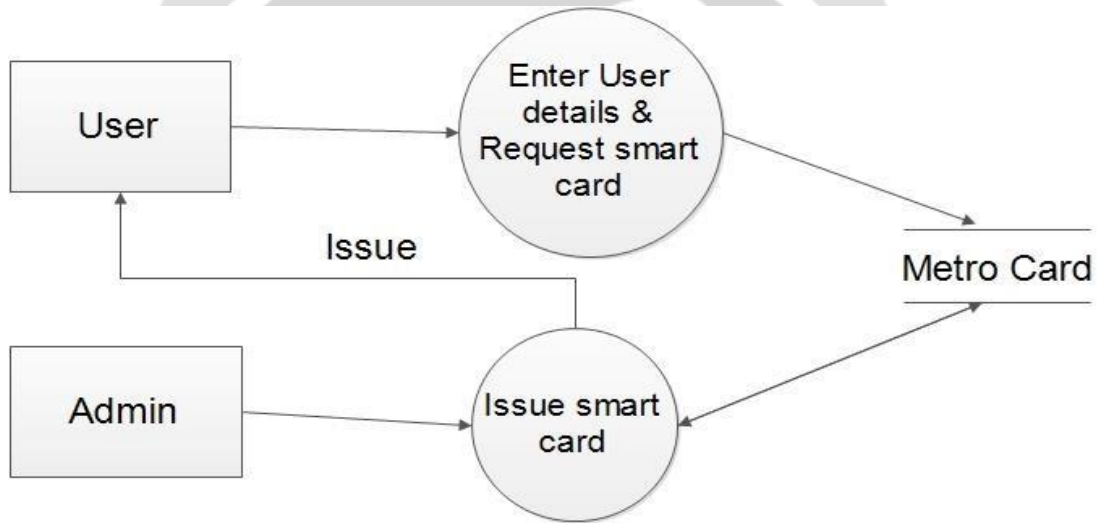
A data store is a holding place for information within the system: It is represented by an open ended narrow rectangle. Data stores may be long-term files such as sales ledgers, or may be short-term accumulations: for example batches of documents that are waiting to be processed. Each data store should be given a reference followed by an arbitrary number.

- DATA FLOW DIAGRAM FOR COMPLAINT MANAGEMENT SYSTEM

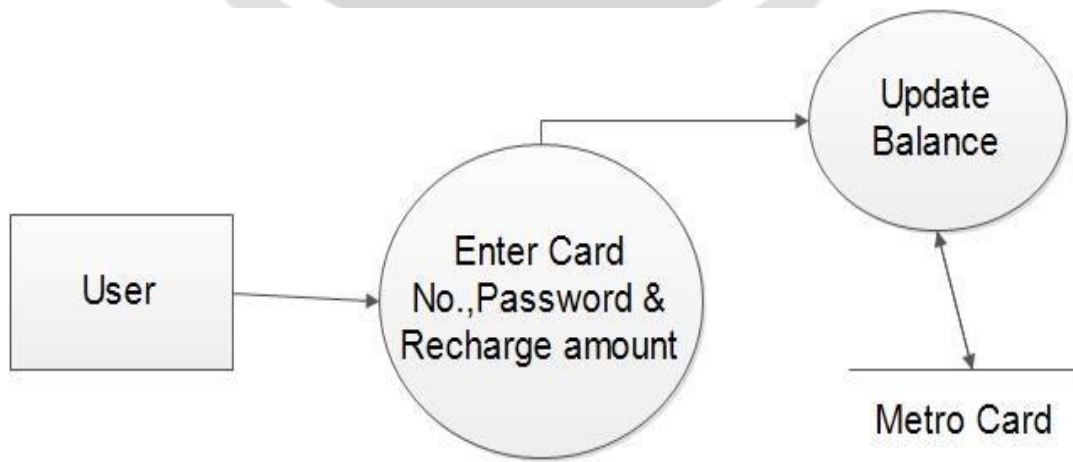


**Fig 3:** Complaint management system DFD

- USE CASE DIAGRAM FOR ONLINE TICKET RECHARGE



**Fig 4.1.**



**Fig 4.2**

- DATA FLOW DIAGRAM FOR METRO TIME TABLE

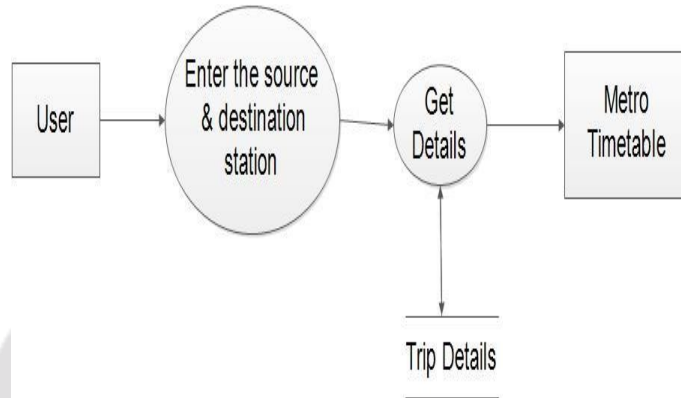


Fig 5: Metro time table DFD

- DATA FLOW DIAGRAM FOR FAIR & ROUTE MAP

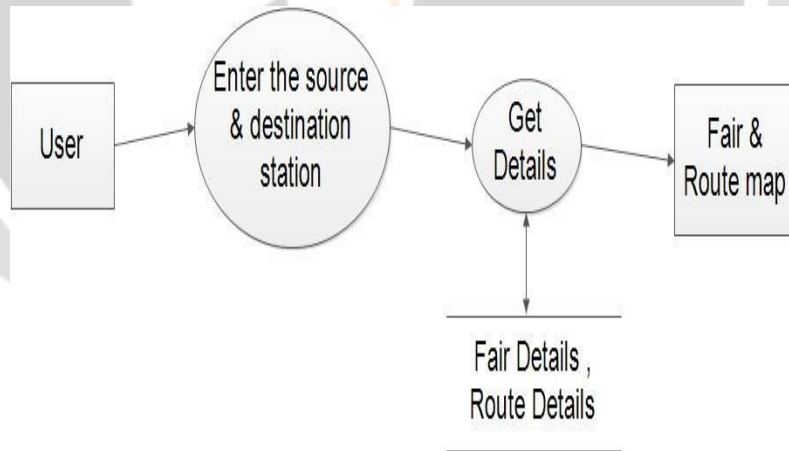
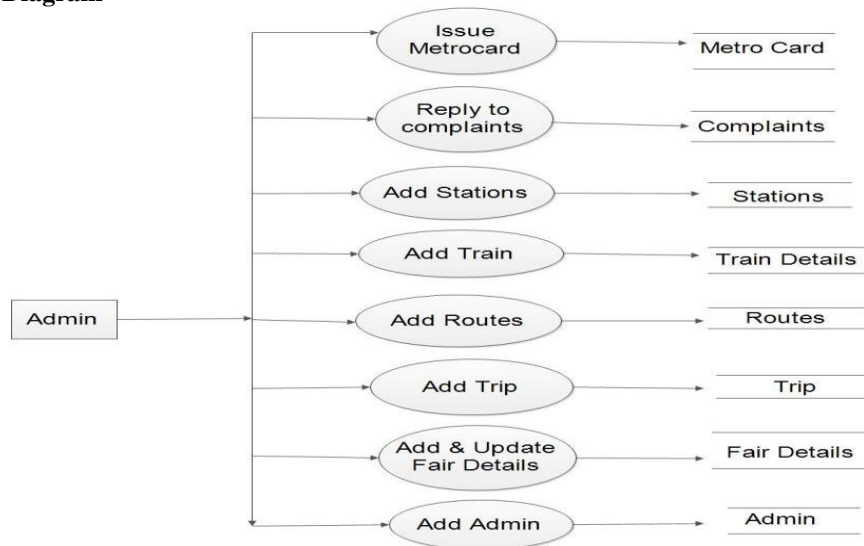


Fig 6: Fair and route map DFD

### 3.3 Activity Diagram



**Fig 7: Activity Diagram**

The above figure(fig:7) holds the the activity of the system resembling the admin module. An activity diagram generally is the the activity by which it can be known how the system is going to act based on the changes made by the admin.

### 4. CONCLUSIONS

The system has been developed with much care and free of errors and at the same time it is efficient and less time consuming. The purpose of this project was to develop a web application for metro rail management . The entire system is secured. Also the project helps one understand about the development phases of a project and software development life cycle. Besides getting benefited for the knowledge gained this project is very useful in daily life and can be efficiently implemented or worked upon.

### 5. ACKNOWLEDGEMENT



I would like to acknowledge our Project Guide for letting us proceed with the project topic as well as helping us with the step by step method of the system, our Project Coordinator for providing us with the useful guidelines and information about recent system types and modules and our Head Of The Department for granting us the opportunity to perform a project as well as providing us the encouragement

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