Metro Railway Management System

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled **"Metro Railway Management System"**, submitted by Md. Nur-A-Rabbi , ID: 162-15-8174,Tanvin khan Shochcha, ID: 163-15-8279 AND Tasfiqur Rahman Shanto , ID: 163-15-8416, to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 01/06/2021.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Ms. Moushumi Zaman Bonny, Assistant Professor, Department of CSE,** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

An integrated service that provides all information about the metro rail and its routes for the public. A web-based application that provides information regarding time, routes, fair. It manages public feedback about services with the help of a complaint management system. This system also contains an online recharge module where users can recharge their smart cards or metro card online through the site.

MetroCard can be recharged using several online payment methods such as bKash or rocket. Also, has an admin module where the admin can add stations, trains, routes update the fairs, and also add a new admin. Admin panel is only consisting of a group of authorized persons.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Metro rail website is designed to handle huge crowds and make it much easier to help users Instantly . Every metro rail system in different parts of the world has its own website that is designed specially to align with their tradition and practices. Our country is also stepping into the era of Metrorail and it needs a specialized system that can help us manage multi-million dollar projects with perfection. We need to keep pace with it for economic benefits, ease of management, and better user interactions with management. Modern art and technology go hand in hand with amazing talent and with the development of these terms, the use of technology has become a part of our lives. Now and then we are waiting for the best possible situation for our lives. As a result, a name like living comfortably with the use of technology is no longer a luxury but a good choice. This web-based project will help in the future of COVID 19 so we are interested in this web-based program.

1.2 Motivation

This is a new era of information technology. People are getting stronger day by day. These days people have a lot going for online based jobs. So build this a good thing for people who want to buy a train ticket from the internet. Using our system can save your time and your life. Customer will not need surf for a long time. Our program encourages both for admin & user. The user can easily buy a ticket to replenish his card at home.In the case of an epidemic Very effective web based project for peoples.

1.3 Objective

The objectives of the project :

- Apply for a metro card.
- User can express their opinion or problem through the complaints management system.
- Metro rail timetable.
- A admin can manage the whole account.
- Admin can update and delete both of system including stations, route, fair, trains even a new admin too.

1.4 Expected Outcome

Propose System Model: For developing Metro Rail system We have arranged a system model.
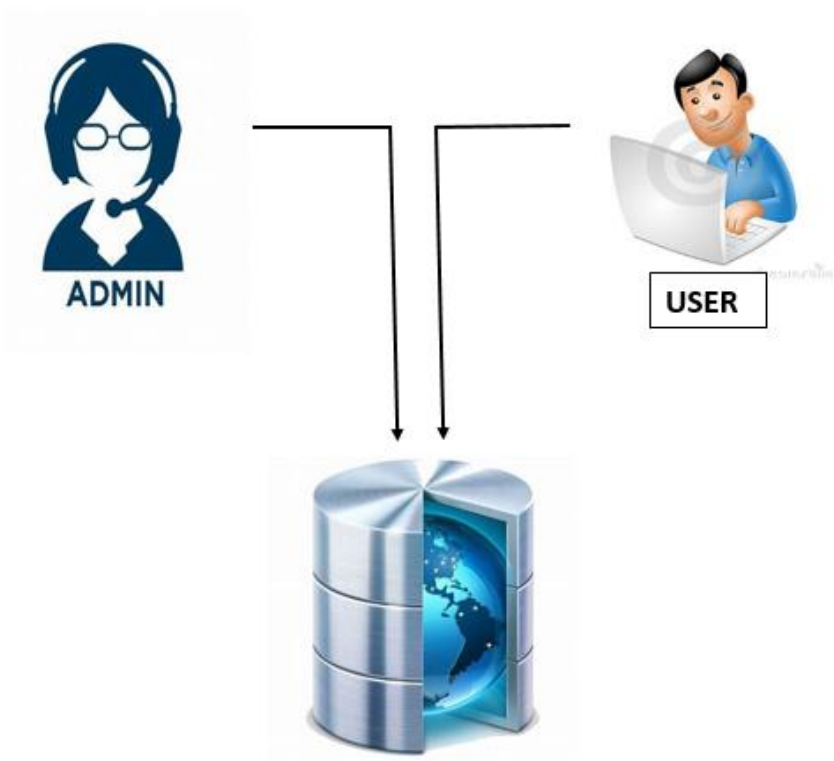

Fig 1.4 Propose System Model

Where admin can --------

- Approve User Application.
- Add Admin.
- Issue Metro Card.
- Reply Complaint.
- Add Station.
- Add Train.
- Add Route.
- Add Trip.
- Add & Update Fair Details.

1.5 Report Layout

- Step one includes the motivation, objectives and goals of our system.
- Step two will have overall ideas that shows managerial challenges and phases.
- In step three, we will discuss about the Software Requirement our system.
- Step four is on System Analysis.
- Step five has the system design and specification of the project.
- Step six will have Implementation, and Testing.
- Finally step seven is on conclusion

CHAPTER 2

BACKGROUND

2.1 Introduction

Metro rail, is a high-capacity method of public transport that is mostly in use in urban areas. It is also known as a rapid transit system. Metro rail is grade-separated in elevated railways or tunnels away from regular traffic and operates on an exclusive right of way. Although some metro rails use guided rubber tires, magnetic levitation, or monorail, most modern metro rails are provided on designated lines between stations typically using electric multiple units on the rail track. They are the most effective method of quickly transporting large numbers of people within short distances and remain unchallenged so up to date[2].

2.2 Related Work

There are many successful and efficient Metrorail systems with their own websites that serve both, management and users. Most popular among those are of course Tube, Metro Transit Authority (MTA), Tokyo Metro, etc. Their websites mostly provide some basic information and allow their users to request a metro card.

The information these websites provide, mostly are how many and which routes are available, how many trains are covering those routes, where the stations are, what is the fair for riding, etc.

They also provide additional information on where can they get cards, how to apply for MetroCard, what should they be concerned about, etc.

2.3 Comparative Studies

There are many app & websites featuring different rail systems. Many primary functionalities are the same or similar in Bangladesh. Such as Rail Sheba,Amader Rail e.t.c. So we are compare from it. But there are some additional functionalities that make this website stand out among them. Apart from common primary features, it also lets its users recharge their MetroCard from within this website. Most metro rail systems don't have that online, and even if they do, they need to search for it manually. While this website includes the most popular online payment methods within it.

Like all other websites, its design features our national identity, and the metro transport system it is working with. It also has a simpler structure so that it is easier for users to get used to.

It also has a simple but multifunctional interface for the admin side. Management can do everything they need without reaching out to the database manually.

2.4 Scope of the Problem

There is a huge range of startups within our platform. We have now focused on a website based system . So here little by little we can go out with other everyday . We can collect specialized locally based wepsite IP at very low prices. Therefore   this website will be available everywhere at a very low price.As this website includes payment methods built-in, the security system of it should improve day by day. Other conventional payment methods are to be included. Which, without any doubt, will make it more user-friendly and flexible.

As it is supposed to be a public transport system, it should include facilities offered to its users with special needs. A large scope to work in future.

2.5 Challenges

- As it integrates an online banking system within it, there's always a risk involved. Therefore, it is a major security concern.

- It has a huge range of functions available, many people may get riddled while using it.

- People resist getting involved in a new system. Especially when many people are not used to working with compound online systems.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Modeling of business processes is a clear indication of what the setting is equipped to do, what its possible consequences are. The representation of the business scale speaks the truth about the operating process of the framework so that the current cycle can be broken, developed, and made into a robot. BPM is usually eliminated through the use of various types of graphic materials, for example, broadcast frameworks, information charts, etc. The number below is a typical action plan for our agencies. It addresses almost all data flow and operational strategies for our 3 types of clients: manager, vendors and general client.
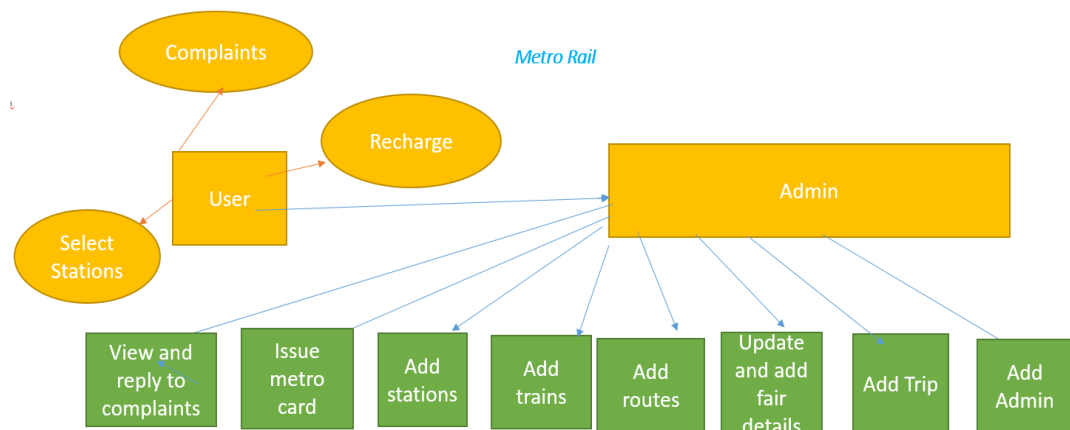
Fig : 3.1 Business Process Modeling

3.2 Requirement Collection and Analysis

We used xampp control panel for a local server. MySQL for the backend design and also HTML, CSS, BOOTSTRAP, JAVASCRIPT for frontend development.

3.3 Use Case Modeling and Description

To model a system, the most important aspect is to capture the dynamic behavior. Dynamic behavior means the behavior of the system when it is running/operating.

Only static behavior is not sufficient to model a system rather dynamic behavior is more important than static behavior.

Use case diagram explains the dynamic properties of the system graphically.

The use case diagram of our system has two sides, user side and admin or management side
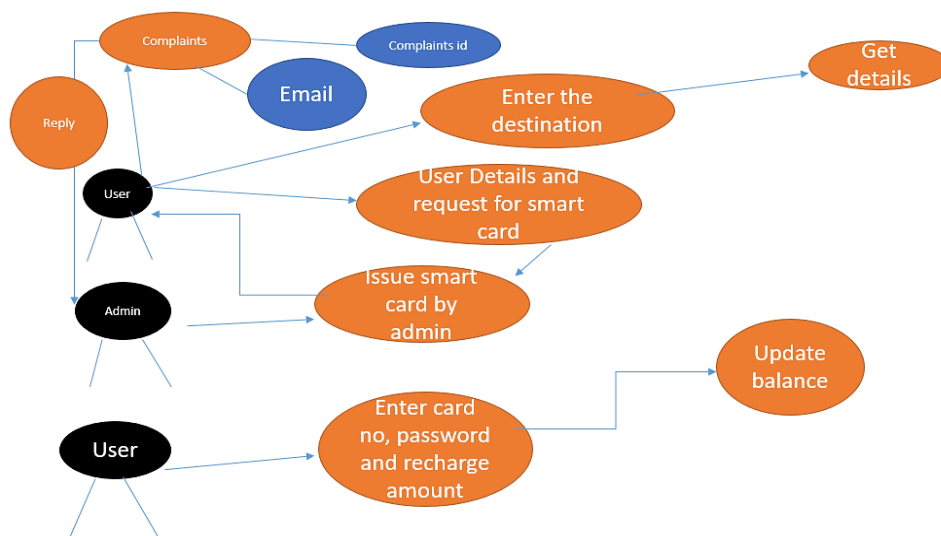
Fig 3.2   Use Case Modeling

3.4 Logical Data Model
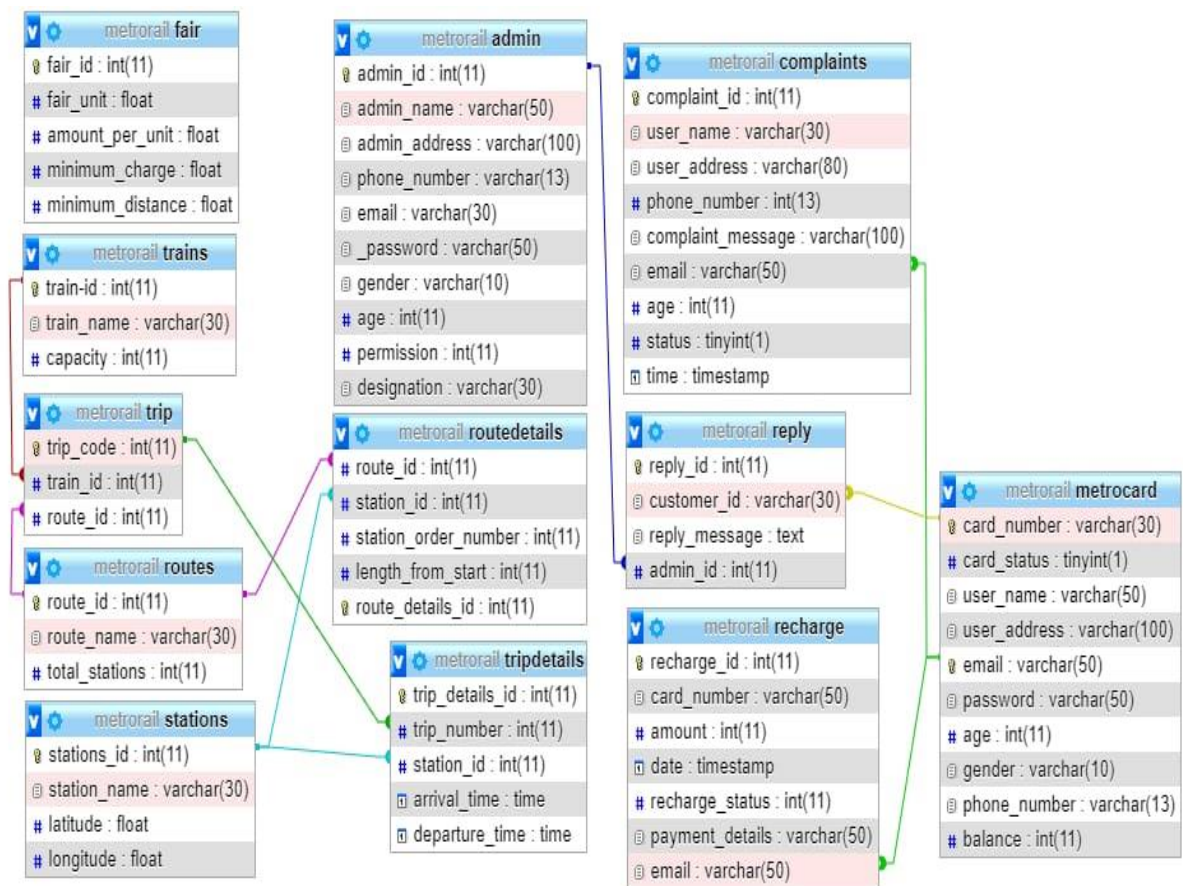
Fig 3.3 Logical Data Model

3.5 Design Requirements

Html, CSS, JAVASCRIPT, Bootstrap, MYSQL, and PHP languages are used to build this system where MYSQLi is used for database and PHP is used for backend development and the others are used for front-end development.

CHAPTER 4

DESIGN SPECIFICATIONS

4.1 Front-end Design

For our project, We have used various kinds of components to form our idea to be a structure. There has two-part. Front–end, and back-end. In the design of the front-end, we try to give an interface. It is totally responsive website and user-friendly. In this section we use HTML, CSS,BOOTSTRAP,JAVASCRIPT for designing . We are providing various features through our work like metro card application, metro timetable, online recharge, update balance, complaints. For complaints, users can complain about their problem or share their opinion about metro rail. Users can recharge with the help of a metro card and also update their balance. Users can see the metro timetable fair and route.

Admin:

 Basically, an admin is A person who has specific controls to a website, forum, etc. that allows them to control the forum or website. The admin has a responsibility to change the forum settings to make more users happier.
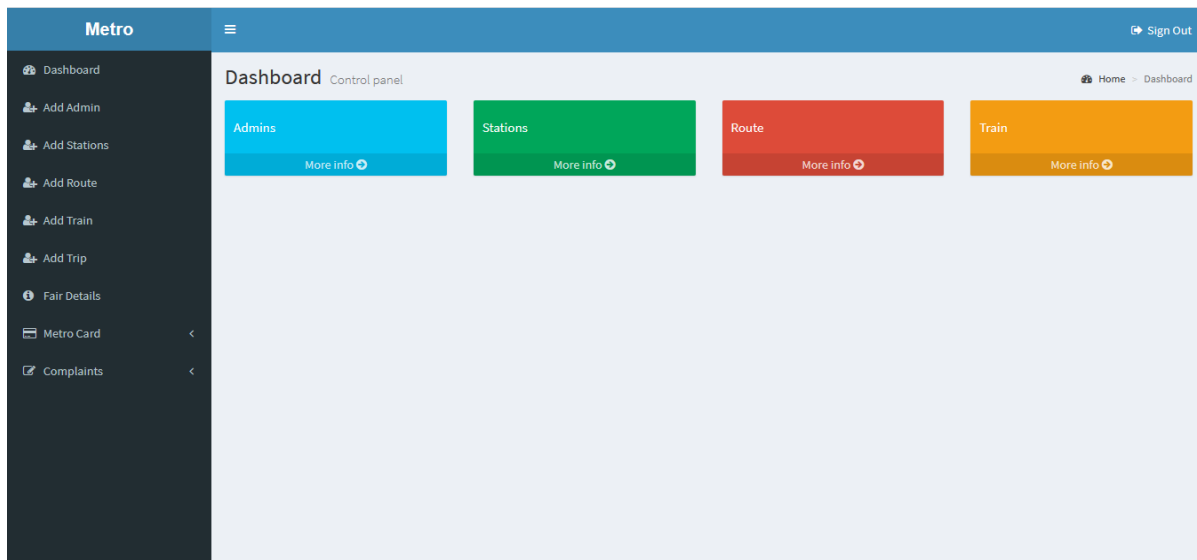
Fig 4.1

Admin Panel

4.2 Back-end Design

PHP is the most popular writing language for web development. Free, open source and server side (code generated on server). MySQL is a Relational Database Management System (RDBMS) that uses Structured Questionnaire Language (SQL). And it is a free and open source. PHP integration with MySQL provides unlimited options for building almost any type of website - from a small form of communication to a large corporate website. We create PHP & MySQL for Back-end Design.

ER DIAGRAM   FOR EXAMPLE
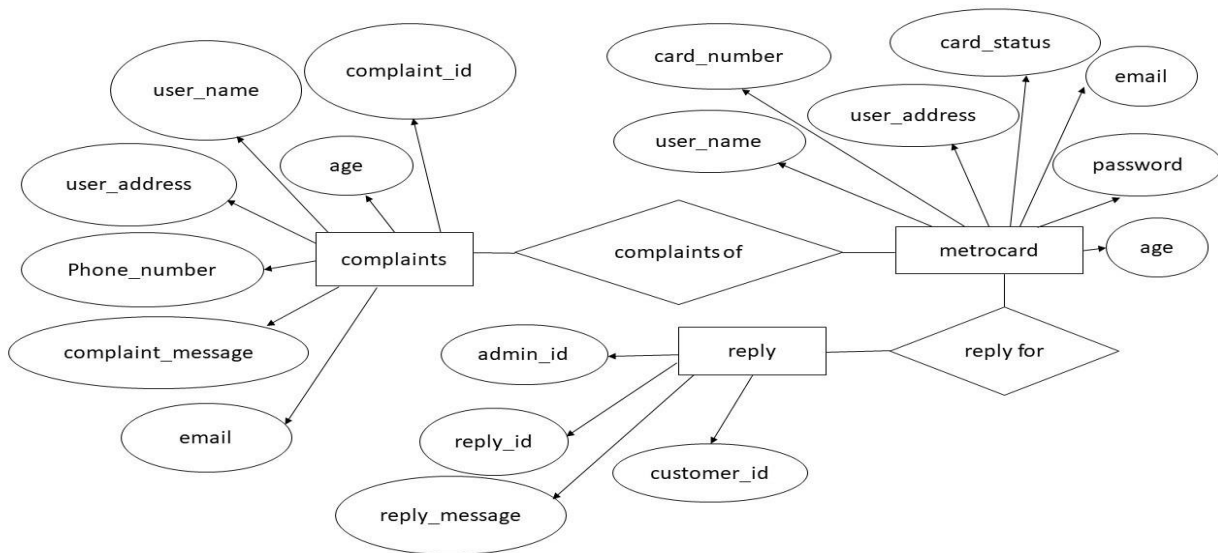
Fig 4.2 E-R diagram of Complaints

4.3 Interaction Design and UX

 Interaction design, alternately known as user experience design. As there's a lot of things common between these two. UX design is all about forming the experience of using a product and the primary step of it is interaction between the user and the product. But in reality these two are not the same.

The primary difference between the two is in the way we think about user interactions. Interaction designers focus on improving the interactive experience when a user interacts with their product. In contrast, UX designers work with all the user facing aspects of a product or system rather than concentrating on only the interaction part. Interaction design thus is a part of UX design.
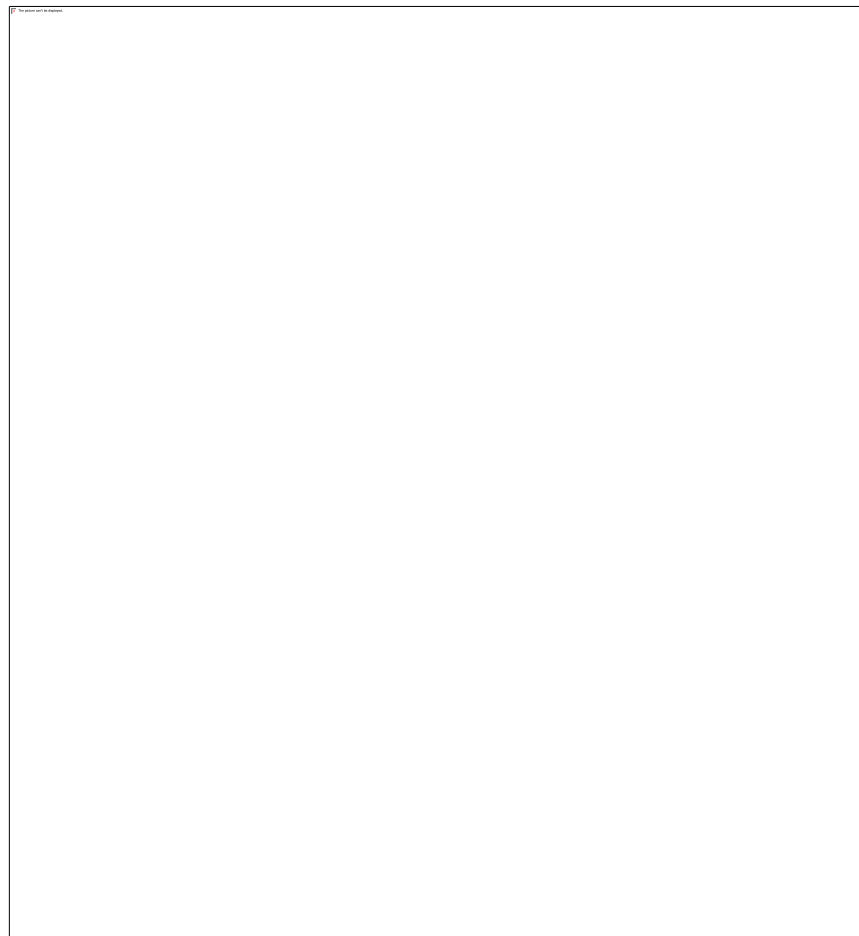
Fig: 4.3 Interaction Design and UX

4.4 Implementation Requirements

Needs testing was the main cycle of promise. Of course we first research our needs, evaluate the requirements and then get ideas when evaluating with clients and the professional organization. After testing our initial requirements we assemble the model and then test the model. After testing the customer model we continue with our site plan. We explore different types of site and get ideas and then make a remarkable site plan
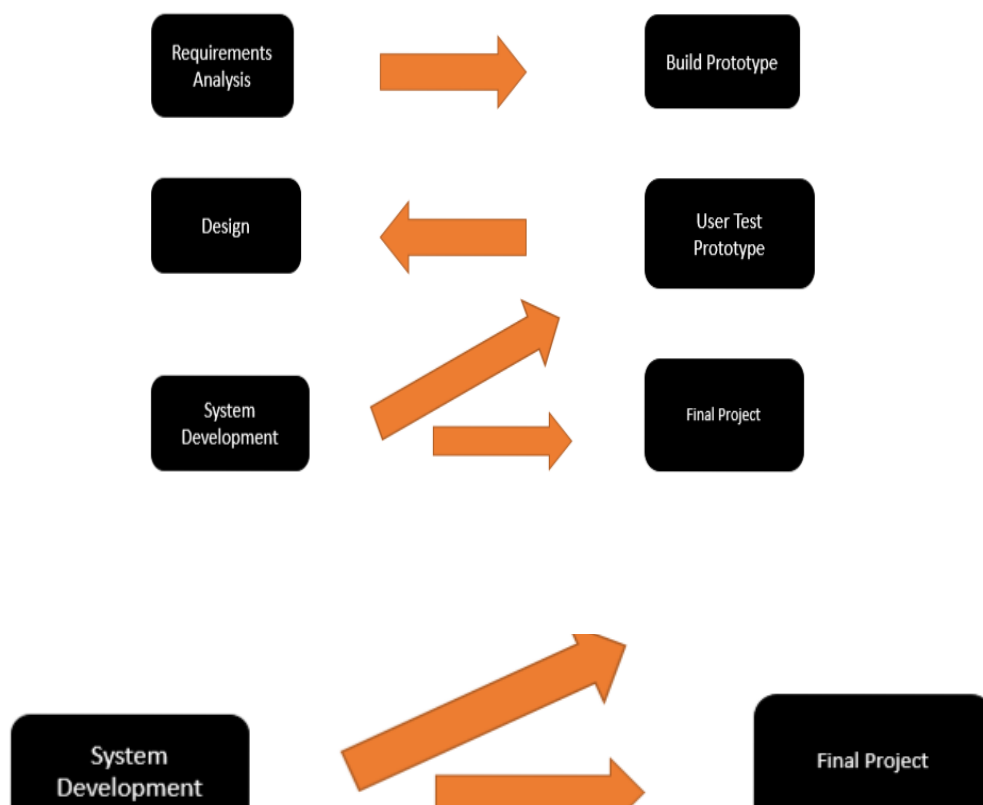
Fig: 4.7 Implementation Requirements

CHAPTER 5

IMPLEMENTATION & TESTING

5.1 Implementation of Database

An organized collection of structured information or data generally stored from a computer system is Database. It is also called an electronic database. It is more complex. It is controlled by DBMS(database management system). In response to queries from the database, DBMS extracts information. Inside the database tables, data are stored. Keep records of a Metrorail project that uses MySQL as a database and a National Database Management System.

5.2 Implementation of Front-end Design

To make a preliminary plan, we first check the program about our site and then we start making our previous plan.
End-to-end design using HTML, CSS, Bootstrap, JavaScript.

HTML: It is called the root of a website, which means building a website structure that requires Html first.

CSS: CSS works for design purposes which means to give the best UI we need CSS.

BOOTSTRAP: To make a website response we need bootstrap.

JAVASCRIPT: JAVASRIPT needs to build an engaging and dynamic website.

5.3 Implementation of Interaction

For the satisfaction and insight of the client, we try our best to develop this site as the best site.

• User-friendly website.

• Simplify the website user interface.

• Secure their information

• Flexible.

• User friendly

• Easier to use.

• It is able to save users valuable time.

• People with an internet connection in their mobile, laptop, or desktop are able to use this site.

5.4 Testing Implementation

There are many construction issues that need to be addressed. Software will be built to run on Windows

nature. To make the user interface easier and more accessible, we will be reducing the number of

submenus and components in the user interface for clicking. One of our goals is also safety so we should

enter user ids and / or passwords. We are limited in time, so we decided not to include innovation activities that represent separate differences from our plans during the requirements phase.

5.5 Test Results and Reports

Login Report

Test No	Date	Module	Cases	Data	Pass/Fail	Number of Bug	Comments
1	03/02/2021	Login	Login as Admin	Admin's username and password	Pass	N/A	Only Login Access for Admin
2	03/02/2021	Login	Login as User	User's email and password	Pass	N/A	Login access for registered users

Fig : 5.5 Login Report Table

Metro Card Application and verification Report

Test No	Date	Module	Case	Data	Pass/Fail	Number of Bug	Comments
1	03/02/2021	Metro card Application and verification	User Application and verification	User name, email, password, phone number ,age, address	Pass	N/A	Application for the MetroCard Completed.

Fig: 5.6 Metro Card Application and verification Report

.

CHAPTER 6

CONCLUSION & FUTURE SCOPE

6.1 Discussion and Conclusion

Metrorail is a web-based application. It helps us to make user life easy and comfortable This project helped us to understand the software development life cycle. This system is efficient and less time-consuming and also user-friendly.

6.2 Scope for Further Development

❖ API's of popular online money transfer systems to be added to make it more practical.

❖ Real-time Google Maps will be added to pages to make it easier for users to get locations quickly

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APPENDICES

Project Reflection

_backend_complaints.php

```php
<?php

include("database_connect.php");
session_start();

if($_SERVER["REQUEST_METHOD"] == "POST") {


     $name = mysqli_real_escape_string($db,$_POST['name']);
     $age = mysqli_real_escape_string($db,$_POST['age']);
     $email = mysqli_real_escape_string($db,$_POST['email']);
     $number = mysqli_real_escape_string($db,$_POST['number']);
     $address = mysqli_real_escape_string($db,$_POST['address']);
     $message = mysqli_real_escape_string($db,$_POST['message']);


   if(isset($_SESSION['metro_user'])) {


     $sql = "INSERT INTO
`complaints`(`user_name`,`user_address`,`phone_number`,`complaint_message`,`email`,`age`,`status`)
     VALUES ('$name','$address',$number,'$message','$email',$age,1)";
     mysqli_query($db,$sql);



     header("location:
http://localhost/metroRailway/admin/metroUser/complaints.php");

   }else {
     echo "Could not add complaints.";
   }
}

?>
```

_backend_user_login.php

```php
<?php

include("database_connect.php");
session_start();

if($_SERVER["REQUEST_METHOD"] == "POST") {



  $email = mysqli_real_escape_string($db,$_POST['email']);
  $password = mysqli_real_escape_string($db,$_POST['password']);


  $sql = "SELECT * from metrocard where email='$email' and `password`='$password' and
`card_status`= 1";
      $result=mysqli_query($db,$sql);
  $rows=mysqli_num_rows($result);


  if($rows==1) {
  $values=mysqli_fetch_assoc($result);
    $_SESSION['metro_user']=$values['card_number'];
    echo $_SESSION['metro_user'];




    header("location: http://localhost/metroRailway/admin/metroUser/index.php");

  }else {
    echo "Email or password didn't match.Please Create a new Metro Card Application. ";
  }
}
```

_backend_metrocard.php

```php
<?php

include("database_connect.php");
session_start();

if($_SERVER["REQUEST_METHOD"] == "POST") {


  $name = mysqli_real_escape_string($db,$_POST['name']);
  $age = mysqli_real_escape_string($db,$_POST['age']);
  $email = mysqli_real_escape_string($db,$_POST['email']);
  $number = mysqli_real_escape_string($db,$_POST['number']);
  $address = mysqli_real_escape_string($db,$_POST['address']);
  $password = mysqli_real_escape_string($db,$_POST['password']);
  //$gender = mysqli_real_escape_string($db,$_POST['gender']);




      $x=rand();
    $sql = "INSERT INTO
`metrocard`(`card_number`,`user_name`,`user_address`,`phone_number`,`password`,`
email`,`age`)
    VALUES ('$x','$name','$address',$number,'$password','$email',$age)";
    mysqli_query($db,$sql);



    header("location:
http://localhost/metroRailway/admin/metroUser/applicationForMetroCard.php");


  } ?>
```
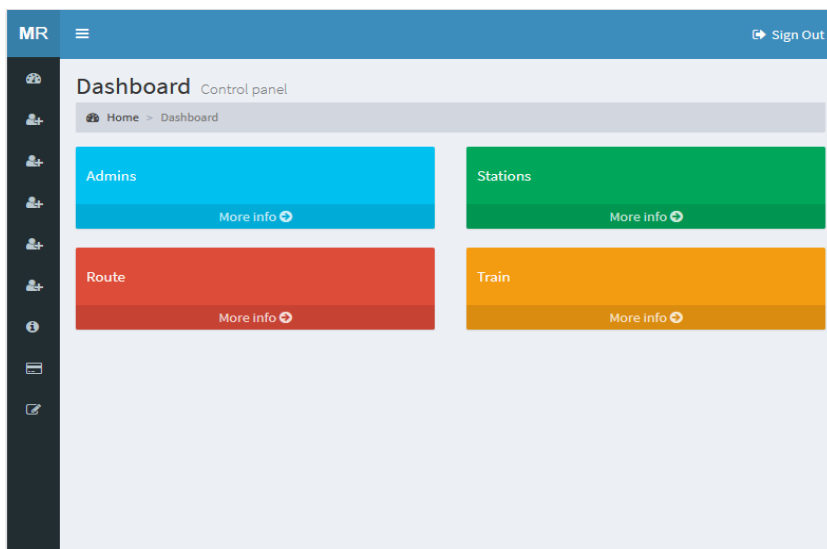
_backend_rechargeMetrocard.php

```php
<?php

include("database_connect.php");
session_start();

if($_SERVER["REQUEST_METHOD"] == "POST") {



  $amount = mysqli_real_escape_string($db,$_POST['amount']);
  $pay=mysqli_real_escape_string($db,$_POST['pay']);




  if(isset($_SESSION['metro_user'])) {

    $user=$_SESSION['metro_user'];
    $sql="SELECT email from metrocard where `card_number`='$user'";
    $result=mysqli_query($db,$sql);
    $values=mysqli_fetch_assoc($result);
    $email=$values['email'];


    $sql = "INSERT INTO
`recharge`(`card_number`,`amount`,`date`,`payment_details`,`email`) VALUES
('$user','$amount',now(),'$pay','$email')";
    mysqli_query($db,$sql);

    $sql = "UPDATE metrocard set balance=balance+$amount where
card_number='$user'";
    mysqli_query($db,$sql);



    header("location:
http://localhost/metroRailway/admin/metroUser/balanceEnquire.php");

  }else {
    echo "Could not recharge metrocard.";
  }
}

?>
```

_backend_addRoute.php

```php
<?php

include("database_connect.php");
session_start();

if($_SERVER["REQUEST_METHOD"] == "POST") {


  $name = mysqli_real_escape_string($db,$_POST['name']);
  $station1 = mysqli_real_escape_string($db,$_POST['station1']);
  $length1 = mysqli_real_escape_string($db,$_POST['length1']);
  $station2 = mysqli_real_escape_string($db,$_POST['station2']);
  $length2 = mysqli_real_escape_string($db,$_POST['length2']);
  $station3 = mysqli_real_escape_string($db,$_POST['station3']);
  $length3 = mysqli_real_escape_string($db,$_POST['length3']);




  if(isset($_SESSION['admin_type'])) {
    $sql = "SELECT route_id from `routes` where route_name='$name'";
    $result=mysqli_query($db,$sql);

    $row=mysqli_fetch_assoc($result);


    if ($row==0){
      $sql = "INSERT into `routes`(route_name) values ('$name')";

      mysqli_query($db,$sql);




    }
    $sql = "SELECT route_id,total_stations from `routes` where
route_name='$name'";

    $result=mysqli_query($db,$sql);

    $row=mysqli_fetch_assoc($result);

    $id=$row['route_id'];
```

```php
$total=$row['total_stations'];

$sql = "SELECT MAX(station_order_number) from `routedetails` where
route_id=$id";

$result=mysqli_query($db,$sql);

$max=mysqli_fetch_assoc($result);

$order=$max['MAX(station_order_number)'];

if($station1!='empty'){

    $total=$total+1;

    $sql="SELECT stations_id FROM `stations` where station_name
='$station1'";

$result = mysqli_query($db,$sql);

$st = mysqli_fetch_assoc($result);

$sta=$st['stations_id'];

$order=$order+1;

    $sql = "INSERT INTO
`routedetails`(route_id,station_id,station_order_number,length_from_start) values
($id,$sta,$order,$length1)";

mysqli_query($db,$sql);

$sql = "UPDATE `routes` set total_stations=$total where route_id=$id";

mysqli_query($db,$sql);

}


if($station2!='empty'){

$total=$total+1;

$sql="SELECT stations_id FROM `stations` where station_name ='$station2'";

$result = mysqli_query($db,$sql);

$st = mysqli_fetch_assoc($result);

$order=$order+1;

$sta=$st['stations_id'];
```

```php
$sql = "INSERT INTO
`routedetails`(route_id,station_id,station_order_number,length_from_start) values
($id,$sta,$order,$length2)";

   mysqli_query($db,$sql);

   $sql = "UPDATE `routes` set total_stations=$total where route_id=$id";

   mysqli_query($db,$sql);

}

   if($station3!='empty'){

      $total=$total+1;

      $sql="SELECT stations_id FROM `stations` where station_name ='$station3'";

   $result = mysqli_query($db,$sql);

   $st = mysqli_fetch_assoc($result);

   $order=$order+1;

   $sta=$st['stations_id'];



   $sql = "INSERT INTO
`routedetails`(route_id,station_id,station_order_number,length_from_start) values
($id,$sta,$order,$length3)";
   mysqli_query($db,$sql);
   echo $id.":".$sta.":".$order.":".$length1;
   $sql = "UPDATE `routes` set total_stations=$total where route_id=$id";

        mysqli_query($db,$sql);

   }


      header("location:
http://localhost/metroRailway/admin/metroAdmin/routeList.php");

   }else {
      echo "Only admin can add new route.";
   }

  }

  ?>
```

_backend_addStations.php

```php
<?php

include("database_connect.php");
  session_start();

  if($_SERVER["REQUEST_METHOD"] == "POST") {

    $name = mysqli_real_escape_string($db,$_POST['name']);
    $latitude = mysqli_real_escape_string($db,$_POST['latitude']);
    $longitude = mysqli_real_escape_string($db,$_POST['longitude']);


    if(isset($_SESSION['admin_type'])) {
      $sql = "INSERT INTO `stations`(station_name,latitude,longitude)
      VALUES ('$name',$latitude,$longitude)";
      mysqli_query($db,$sql);
      header("location:
http://localhost/metroRailway/admin/metroAdmin/stationList.php");

    }else {
      echo "Only admin can add new stations.";
    }
  }

?>
```

backend_addTrain.php

```php
<?php

include("database_connect.php");
  session_start();

  if($_SERVER["REQUEST_METHOD"] == "POST") {

    $name = mysqli_real_escape_string($db,$_POST['name']);
    $capacity = mysqli_real_escape_string($db,$_POST['capacity']);

   if(isset($_SESSION['admin_type'])) {

    $sql = "INSERT INTO `trains`(train_name,capacity)
    VALUES ('$name',$capacity)";
    mysqli_query($db,$sql);
    header("location:
http://localhost/metroRailway/admin/metroAdmin/trainList.php");

  }else {
    echo "Only admin can add new train.";
  }
 }

?>
```

APPENDIX B

RELATED DIAGRAM

DATA FLOW DIAGRAM

Complaint Management System (DFD)
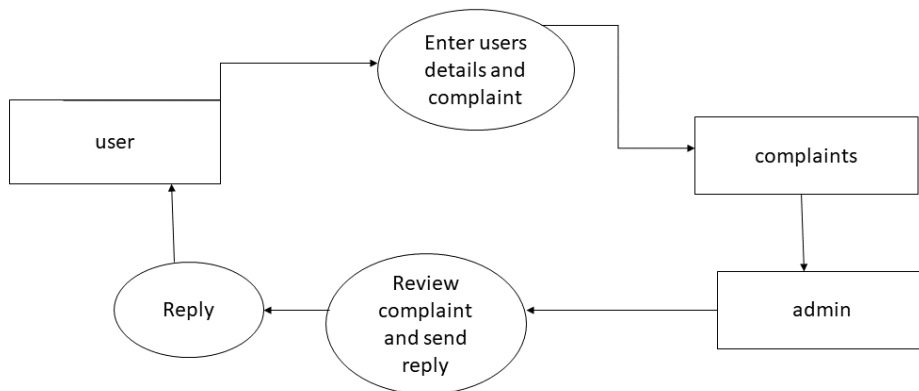
Fig 4.5 Complaint Management System (DFD)

Online Ticket Recharge (DFD)

Fig 4.6 Online Ticket Recharge (DFD)

Metro Time Table (DFD)

Fig: 4.7 Metro Time Table (DFD

Fair & Route Map   (DFD)
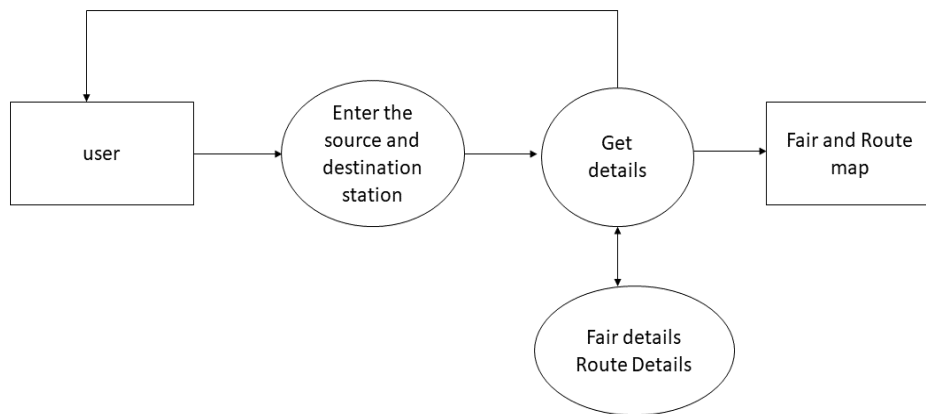
Fig 4.8 Fair & Route Map   (DFD

Admin (DFD)
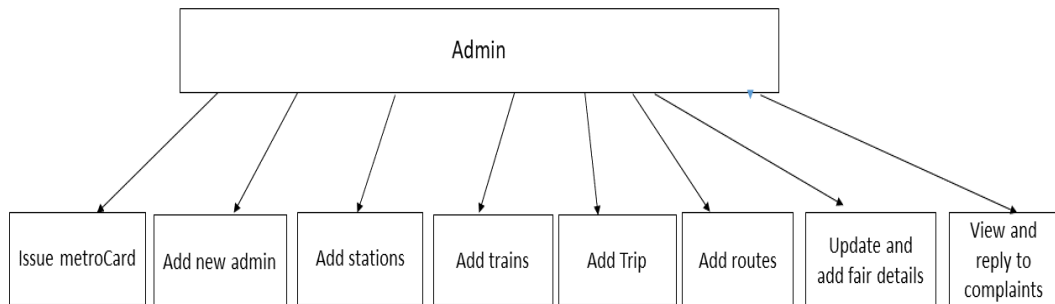
Fig 4.9 Admin (DFD)

Database

MetroRail

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	admin_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▾ More
2	admin_name	varchar(50)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
3	admin_address	varchar(100)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
4	phone_number	varchar(13)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
5	email	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
6	_password	varchar(50)	utf8mb4_general_ci		Yes	NULL			🖉 Change ⊖ Drop ▾ More
7	gender	varchar(10)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
8	age	int(11)			No	None			🖉 Change ⊖ Drop ▾ More
9	permission	int(11)			No	None			🖉 Change ⊖ Drop ▾ More
10	designation	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More

Tab: 5.1 Metrorail table

admin

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	admin_id 🔑	int(11)			No	None		AUTO_INCREMENT	✏ Change ⛔ Drop ▼ More
2	admin_name	varchar(50)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More
3	admin_address	varchar(100)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More
4	phone_number	varchar(13)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More
5	email	varchar(30)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More
6	_password	varchar(50)	utf8mb4_general_ci		Yes	NULL			✏ Change ⛔ Drop ▼ More
7	gender	varchar(10)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More
8	age	int(11)			No	None			✏ Change ⛔ Drop ▼ More
9	permission	int(11)			No	None			✏ Change ⛔ Drop ▼ More
10	designation	varchar(30)	utf8mb4_general_ci		No	None			✏ Change ⛔ Drop ▼ More

Tab: 5.2 Admin table

complaints

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	complaint_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change 🔴 Drop ▼ More
2	user_name	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change 🔴 Drop ▼ More
3	user_address	varchar(80)	utf8mb4_general_ci		No	None			🖉 Change 🔴 Drop ▼ More
4	phone_number	int(13)			No	None			🖉 Change 🔴 Drop ▼ More
5	complaint_message	varchar(100)	utf8mb4_general_ci		No	None			🖉 Change 🔴 Drop ▼ More
6	email 🔑	varchar(50)	utf8mb4_general_ci		No	None			🖉 Change 🔴 Drop ▼ More
7	age	int(11)			No	None			🖉 Change 🔴 Drop ▼ More
8	status	tinyint(1)			No	None			🖉 Change 🔴 Drop ▼ More
9	time	timestamp			No	current_timestamp()		ON UPDATE CURRENT_TIMESTAMP()	🖉 Change 🔴 Drop ▼ More

⊦ Options

		complaint_id	user_name	user_address	phone_number	complaint_message	email	age	status	time
□	🖉 Edit 📋 Copy 🔴 Delete	9	Nur	Dhaka	1670000001	I have faced miss behave from Atikur Rahman (ac of...	nur@gmail.com	22	1	2021-03-24 01:36:25
□	🖉 Edit 📋 Copy 🔴 Delete	10	Dola	rajshahi	1759494688	I need help.	dola@gmail.com	24	1	2021-04-09 16:14:56
□	🖉 Edit 📋 Copy 🔴 Delete	11	urmi	Rajshahi	1670000003	i lost my phone	urmi@gmail.com	23	1	2021-04-09 20:01:30

Tab: 5.3   Complaints table

fair

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	fair_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖊 Change ⊖ Drop ▾ More
2	fair_unit	float			No	None			🖊 Change ⊖ Drop ▾ More
3	amount_per_unit	float			No	None			🖊 Change ⊖ Drop ▾ More
4	minimum_charge	float			No	None			🖊 Change ⊖ Drop ▾ More
5	minimum_distance	float			No	None			🖊 Change ⊖ Drop ▾ More

Tab: 5.5 Fair table

metrocard

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	card_number 🔑	varchar(30)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
2	card_status	tinyint(1)			No	None			🖊 Change ⊖ Drop ▾ More
3	user_name	varchar(50)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
4	user_address	varchar(100)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
5	email 🔑	varchar(50)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
6	password	varchar(50)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
7	age	int(11)			No	None			🖊 Change ⊖ Drop ▾ More
8	gender	varchar(10)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
9	phone_number	varchar(13)	utf8mb4_general_ci		No	None			🖊 Change ⊖ Drop ▾ More
10	balance	int(11)			No	None			🖊 Change ⊖ Drop ▾ More

+ Options

	card_number	card_status	user_name	user_address	email	password	age	gender	phone_number	balance
🖊 Edit ⋮ Copy ⊖ Delete	303	1	Dola	Rajshahi	addylin.dola@gmail.com	123	24		1759494686	0
🖊 Edit ⋮ Copy ⊖ Delete	11	1	Dola	Rajshahi	dola@gmail.com	1234	24		1759494688	700
🖊 Edit ⋮ Copy ⊖ Delete	111	1	Natasha	Rajshahi	natasha@gmail.com	123456789	23		1759494680	900
🖊 Edit ⋮ Copy ⊖ Delete	231	1	Nur	Dhaka	nur@gmail.com	123	22		1670000001	500
🖊 Edit ⋮ Copy ⊖ Delete	1832281341	0	sabbir	rajshahi	sabbir@gmail.com	990	25		1759494681	0
🖊 Edit ⋮ Copy ⊖ Delete	2027548898	0	shanto	Dhaka	santo@gmail.com	1230	22		1759494680	0
🖊 Edit ⋮ Copy ⊖ Delete	1	1	soccho	Dhaka	soccho@gmail.com	009	22		1759894606	0
🖊 Edit ⋮ Copy ⊖ Delete	11111	1	Urmi	Rajshahi	urmi@gmail.com	000	23		1670000005	600

Tab: 5.6 Metrocard table

recharge

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	recharge_id 🔑	int(11)			No	None		AUTO_INCREMENT	✏ Change ⊘ Drop ▾ More
2	card_number	varchar(50)	utf8mb4_general_ci		No	None			✏ Change ⊘ Drop ▾ More
3	amount	int(11)			No	None			✏ Change ⊘ Drop ▾ More
4	date	timestamp			No	current_timestamp()		ON UPDATE CURRENT_TIMESTAMP()	✏ Change ⊘ Drop ▾ More
5	recharge_status	int(11)			No	None			✏ Change ⊘ Drop ▾ More
6	payment_details	varchar(50)	utf8mb4_general_ci		No	None			✏ Change ⊘ Drop ▾ More
7	email 🗝	varchar(50)	utf8mb4_general_ci		Yes	NULL			✏ Change ⊘ Drop ▾ More

+ Options

←T→		recharge_id	card_number	amount	date	recharge_status	payment_details	email
☐ ✏ Edit ⧉ Copy ⊖ Delete		25	231	0	2021-04-02 23:34:21	0	Rocket	nur@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		26	11	500	2021-04-09 16:09:38	0	Rocket	dola@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		27	11	200	2021-04-09 16:09:56	0	Rocket	dola@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		28	111	200	2021-04-09 18:46:57	0	Rocket	natasha@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		29	111	700	2021-04-09 18:47:07	0	Rocket	natasha@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		30	11111	300	2021-04-09 19:59:56	0	Bkash	urmi@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		31	11111	100	2021-04-09 20:00:11	0	Rocket	urmi@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		32	11111	100	2021-04-09 22:23:03	0	Bkash	urmi@gmail.com
☐ ✏ Edit ⧉ Copy ⊖ Delete		33	11111	100	2021-04-09 22:23:25	0	Rocket	urmi@gmail.com

Tab: 5.7   Recharge table

reply

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	reply_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▼ More
2	customer_id 🔑	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▼ More
3	reply_message	text	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▼ More
4	admin_id 🔑	int(11)			No	None			🖉 Change ⊖ Drop ▼ More

+ Options

	reply_id	customer_id	reply_message	admin_id
🖉 Edit ⊱ Copy ⊖ Delete	11	231	I will take the respective action as soon as possi...	1
🖉 Edit ⊱ Copy ⊖ Delete	12	11	please share your complaint with us.	1
🖉 Edit ⊱ Copy ⊖ Delete	13	11	share your problem as soon as possible.	1
🖉 Edit ⊱ Copy ⊖ Delete	14	11111	Don't worry. We try to solve this problem as soon ...	1
🖉 Edit ⊱ Copy ⊖ Delete	15	11111	We take an action against this problem.	1

Tab: 5.8 Reply table

routedetails

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	route_id 🔑	int(11)			No	None			🖉 Change ⊖ Drop ▼ More
2	station_id 🔑	int(11)			No	None			🖉 Change ⊖ Drop ▼ More
3	station_order_number	int(11)			No	None			🖉 Change ⊖ Drop ▼ More
4	length_from_start	int(11)			No	None			🖉 Change ⊖ Drop ▼ More
5	route_details_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▼ More

+ Options

		route_id	station_id	station_order_number	length_from_start	route_details_id
☐	🖉 Edit ⧉ Copy ⊖ Delete	11	13	1	30	20
☐	🖉 Edit ⧉ Copy ⊖ Delete	11	14	2	40	21
☐	🖉 Edit ⧉ Copy ⊖ Delete	11	15	3	46	22
☐	🖉 Edit ⧉ Copy ⊖ Delete	12	16	1	51	23
☐	🖉 Edit ⧉ Copy ⊖ Delete	12	17	2	59	24
☐	🖉 Edit ⧉ Copy ⊖ Delete	12	18	3	67	25
☐	🖉 Edit ⧉ Copy ⊖ Delete	15	25	1	67	32
☐	🖉 Edit ⧉ Copy ⊖ Delete	15	26	2	70	33
☐	🖉 Edit ⧉ Copy ⊖ Delete	15	27	3	80	34

Tab: 5.9 Routedetails table

routes

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	route_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▾ More
2	route_name	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▾ More
3	total_stations	int(11)			No	None			🖉 Change ⊖ Drop ▾ More

+ Options

←T→		route_id	route_name	total_stations
🖉 Edit ⦂ Copy ⊖ Delete		11	UNDERGROUND AIRPORT ROUTE	3
🖉 Edit ⦂ Copy ⊖ Delete		12	ELEVATED PURBACHAL ROUTE	3
🖉 Edit ⦂ Copy ⊖ Delete		15	route3	3

Tab: 5.10 Route table

stations

.

Tab: 5.11 Stations table

trains

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	train-id	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▽ More
2	train_name	varchar(30)	utf8mb4_general_ci		No	None			🖉 Change ⊖ Drop ▽ More
3	capacity	int(11)			No	None			🖉 Change ⊖ Drop ▽ More

+ Options

		train-id	train_name	capacity
☐	🖉 Edit ⌗ Copy ⊖ Delete	12	MRT1	400
☐	🖉 Edit ⌗ Copy ⊖ Delete	13	MRT2	450
☐	🖉 Edit ⌗ Copy ⊖ Delete	16	train3	550

Tab: 5.12 Trains table

trip

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	trip_code	int(11)			No	None			Change Drop More
2	train_id	int(11)			No	None			Change Drop More
3	route_id	int(11)			No	None			Change Drop More

+ Options

	trip_code	train_id	route_id
Edit Copy Delete	1	12	11
Edit Copy Delete	2	13	12
Edit Copy Delete	5	16	15

Tab: 5.13 Trip table

tripdetails

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐ 1	trip_details_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change ⊖ Drop ▽ More
☐ 2	trip_number 🔑	int(11)			No	None			🖉 Change ⊖ Drop ▽ More
☐ 3	station_id 🔑	int(11)			No	None			🖉 Change ⊖ Drop ▽ More
☐ 4	arrival_time	time			No	None			🖉 Change ⊖ Drop ▽ More
☐ 5	departure_time	time			No	None			🖉 Change ⊖ Drop ▽ More

+ Options

←T→		trip_details_id	trip_number	station_id	arrival_time	departure_time
☐ 🖉 Edit ⌗ Copy ⊖ Delete		7	1	13	10:00:00	10:30:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		8	1	14	10:30:02	11:30:06
☐ 🖉 Edit ⌗ Copy ⊖ Delete		9	1	15	11:35:07	12:59:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		10	2	16	11:30:00	12:30:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		11	2	17	12:40:00	13:50:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		12	2	18	14:50:00	16:00:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		19	5	25	10:00:01	10:30:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		20	5	26	10:35:00	11:00:00
☐ 🖉 Edit ⌗ Copy ⊖ Delete		21	5	27	11:01:00	12:30:00

Tab: 5.14 Tripdetails table

Screenshot :
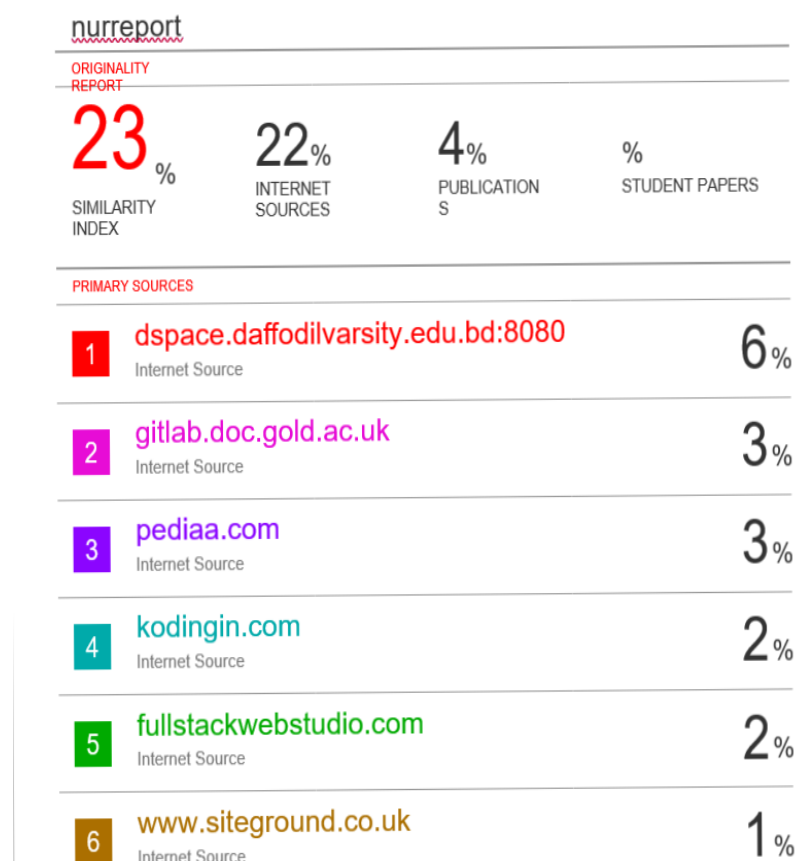
7 "Chapter 13 Managing Content", Springer
   Science and Business Media LLC, 2007
   Publication
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   Agun, Tarik Yerlikaya, Halil Nusret Bulus.
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   From Web Pages", IEEE Access, 2020
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