Chapter 1

Introduction

In earlier days, most of the business applications used traditional databases for storing data. If in any condition the system gets crashed then the data may b e lost and it is di cult to retrieve it. So, using the cloud Database we can store data safely and securely. The main goal of this project is to automate the process carried out in the business with improved performance. The working of the project is as follows:

The first page provides several links. The Home page contains information about the daily collection amount, Date, Excel Download link for each module. User Login module helps the user to login to the site. He must type the username and password correctly. The login provision on this page helps the already registered user to directly access the site. The easy recharge module contains information about easy recharge, SIM information, SIM services, payment bank. FSE distributor module contains data about all eld distributors like his/her name, id, and overall balance and payments. Bank distributors module contains FSE collection, SIM card collection, additional amount, and overall remaining balance. Bank details contain bank name and bank transactions.

Chapter 2

Problem Life Cycle

2.1Problem Identification

The existing business application uses a relational database so it is not efficient for storing large amounts of data. And also, it is unable to access data remotely. So, the solution to this problem we provided is 000webhost database.

2.2Problem Selection

It is important to provide the solution for the problem faced in the business. At present, it is di cult to handle all the data related to customer to employee. When customer visits to store, employee has to write information taken from customer manually on paper or register, which is time consuming.

2.3Problem Definition

Used by employees of the Airtel store for maintaining their daily business data. It mainly contains three modules that are easy recharge, FSE distributor and Bank distributor. Each module contains sub-modules, Easy recharge contains Sim Swap, Sim Cards, Airtel payment bank. FSE distributor stores the record of eld salesman employees, they have to enter the name of that distributor, id. The stored data can be downloaded in Excel format. Bank Distributor contains collection and Bank details. They can download the records into excel sheets. The main objective of this project is to reduce the manpower needed for doing all entries into the register. However, using this application they can save their time

and also, cannot lose their data as we are using cloud databases, so the data will remain safe. And there's no worry even after a system crash.

2.4Problem Analysis

2.4.1 Fishbone Diagram

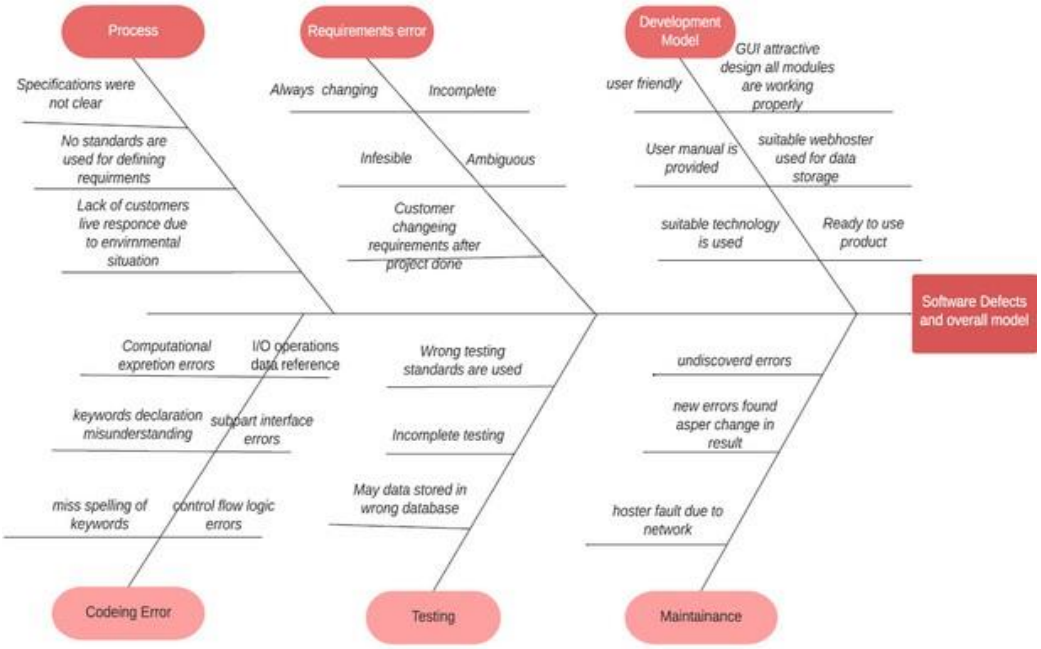

Figure 2.1: Fishbone Diagram

2.5End Users

Business owner and employee of the business.

Chapter 3

Literature Survey and Motivation

In this chapter, we discussed techniques used for web application for business management or it's types by difierent researchers.

Sapna Jain and M AfsharAlamhas [1], written Comparative Study of Traditional Database and Cloud Computing Database that Cloud computing is a computing paradigm, where a large pool of systems are connected in private or public networks, to provide dynamically scalable infrastructure for application, data. A Relational Database Management System (RDBMS) allows the organizations to conveniently develop databases for various applications. A database is an integrated collection of data records, les, other objects. A DBMS allows different user application programs to concurrently access the same database. DBMSs may use a variety of database models, such as the relational model or object model to conveniently describe and support applications. The main concern is that the DBMSs and RDBMSs are not cloud-friendly because they are not as scalable as the web-servers and application servers, which can scale from a few machines to hundreds.

Waleed Al Shehri [2], has written Cloud Database As A Service that Cloud Computing has been the most adaptable technology in recent times, and the database has also moved to cloud computing now, so we look into details of the database and its functionalities. A database can be accessed by clients through the internet from the cloud database service providers when they demand it. The advantages and disadvantages of the database as a service will let you decide either

to use the database as a service or not. Database as a service has already been adopted by many e-commerce companies and those companies are getting bene ts from this service.

Maha A. Sayal, Ehsan Ali Al-Zubaidi [3], proposed Building Web Application Using Cloud Computing that Web applications evolved from sites of web or Web systems, This application builds on and extends a Web system to add business functionality. There are challenges that include scalability, and high availability, Cloud data stores provide high availability and scalability properties for web applications. Cloud Computing o ers the vision of a virtually in nite pool of storage, computing, and networking resources where applications can be scalably deployed. This paper demonstrates how to build any web application in the cloud, provide multiple interfaces for it, and how to choose appropriate services from Amazon Web Services for an application.

Sabah Al-Fedaghi [4], stated that One approach to developing service-oriented Web applications is to transform high-level business models to a composition language that implements business processes with Web services. In this paper, they propose using ow as a fundamental notion underlying understanding of activities in Web Services. They discuss the development of business processes through the introduction of a conceptual model. Web Applications are developed using browser-supported languages such as HTML, CSS, Bootstrap, and javascript, etc. Web applications are accessed via a web browser like Chrome.

Show U1, Segun O. Olatinwo2, Olusegun [5], proposed the development of an electronic commerce web system for efficient business management. The proposed system attempts to make a soft copy of all the products and goods available in a given business rm to be easily viewed by potential customers globally and have easy access to it. Web designing tools include the tools or applications which are needed to design or code the proposed E-Commerce web app. This can be achieved using coding languages such as HTML, ASP.NET, MySQL, and MICROSOFT VISUAL STUDIO.

Ram Naresh Thakur, Dr. U.S. Pandey [6],wrote in Study Focused on Web Application Development using MVC Design pattern they state The Model-View-Controller (MVC) is very useful for developing Interactive and Dynamic Web Applications. It has become the most powerful and dominant Programming Paradigm for developing large scale and Dynamic Web Applications. With MVC, developers can trust design patterns that are widely accepted as solutions for recurring problems and used to develop flexible, reusable, and modular software. Applying the MVC design pattern to Web Applications is therefore complicated by the fact that current technologies encourage developers to partition the application as early as in the design phase. We have developed a web-based application using the MVC framework using Java Web Architecture.

Chapter 4

Proposed System and Requirement Specification

4.1Proposed Solution

The aim of the proposed system is to develop a system of improved facilities. The Proposed System can overcome all the limitations of the existing system. The system provides proper security and reduces manual work.

- Security of data.
- Ensure data accuracy
- Minimize Manual data entry.
- Minimize the longer calculations.
- Keep the historical record.
- Minimize the time required.

4.2Software Requirements Specification

Modules

There are three main modules:

1.Easy Recharge

This module includes Sim Swap, Sim card, and Airtel payment bank, users will enter existing balance and add balance then automatically remaining

balance and OTF will be calculated. It has sub-modules like Sim card consisting of new sim card details and MNP sim card details of customers. Sim swap consists of sim swap mobile no, amount,4G mobile no, total balance. It shows total collection, expenses, expenses value, and total amount. And Airtel payment bank has the records of transferred and deposited cash.

2. FSE Distributor

This module contains the FSE distributor name, employee id. It shows old balance, new balance, cash paid, total dues, the quantity of sim, rate, how much cash paid, and the remaining balance of each distributor.

3. Bank Distributor

This module includes collection and bank details of customers like bank name, available balance, total debit, total NEFT, and remarks.

Functional Requirements

1. For designing the front end, we are using PHP, JavaScript, HTML, Bootstrap.
2. For designing the back end of the system we are using 000webhost service, and online localhost.
3. We access this website remotely through any local machine or computer.

Non-Functional Requirements

1. Performance Requirements

- This system we are going to develop a business management module to manage the business as well as update records by managing the whole database of the system.
- The system should be easy to handle.
- The system should give the expected performance results.

2. Safety Requirement

The registered record of the notebook may get crashed at anytime. Therefore, it is required to manage the backup les of all the data entered on the system.

4.3Significance of Project

This application is used by employees of the Airtel store for their Business control. For storing large amounts of data, the traditional databases are not capable. That's why the Cloud database plays an important role here. Hence, we have provided the solution to this problem a website with the Cloud database. Using this we are able to store large amounts of data without any loss. This leads to a secure, and efficient storage of important data. In the manual-system the calculations of larger data will be incorrect, therefore we have provided an automatic calculation facility through this system. which will reduce human e orts.

4.4Scope of Project

- In web application for business management we intend to reduce human errors by doing mathematical calculations using formulas into our system via phones and web servers.
- Key feature of our system is to reduce the time and human e orts and essay to use.
- A user can maintain the record of his data over the span of time.

4.5Deployment requirement

4.5.1 Software requirement

- Sublime text editor
- Internet connection
- Browser

4.5.2 Hardware Requirement

Any Computer /Laptop /Mobile with Any Browser.

4.6Project cost estimation

Nil

Chapter 5

Design

5.1Architecture

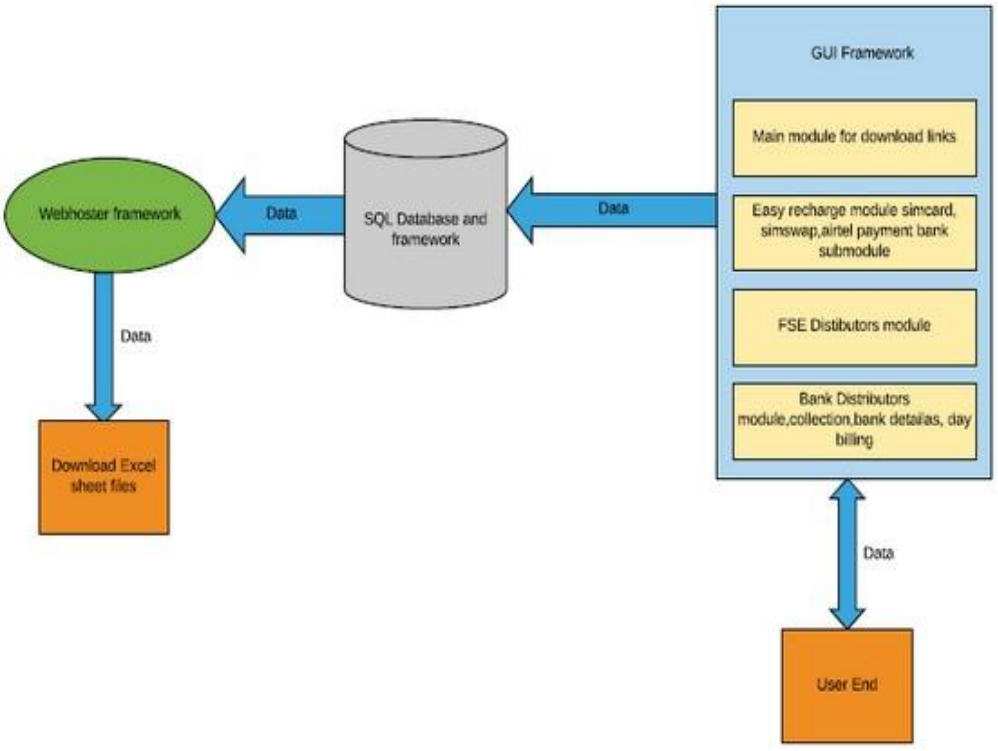

Figure 5.1: System Architecture

In Figure 5.1, user gives an input. After giving input data is saved into the database. And if the employee need any information then he/she can download the data using excel sheet.

5.2Process Flow

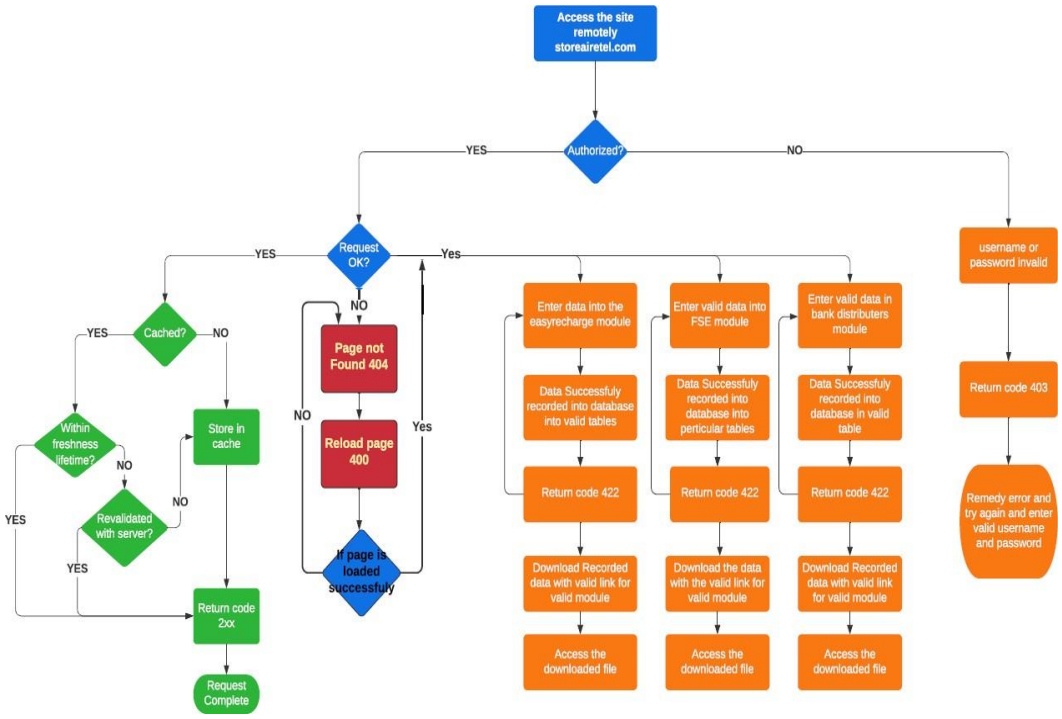

Figure 5.2: Flowchart

5.3Data Flow Diagram

5.3.1 DFD Level 0

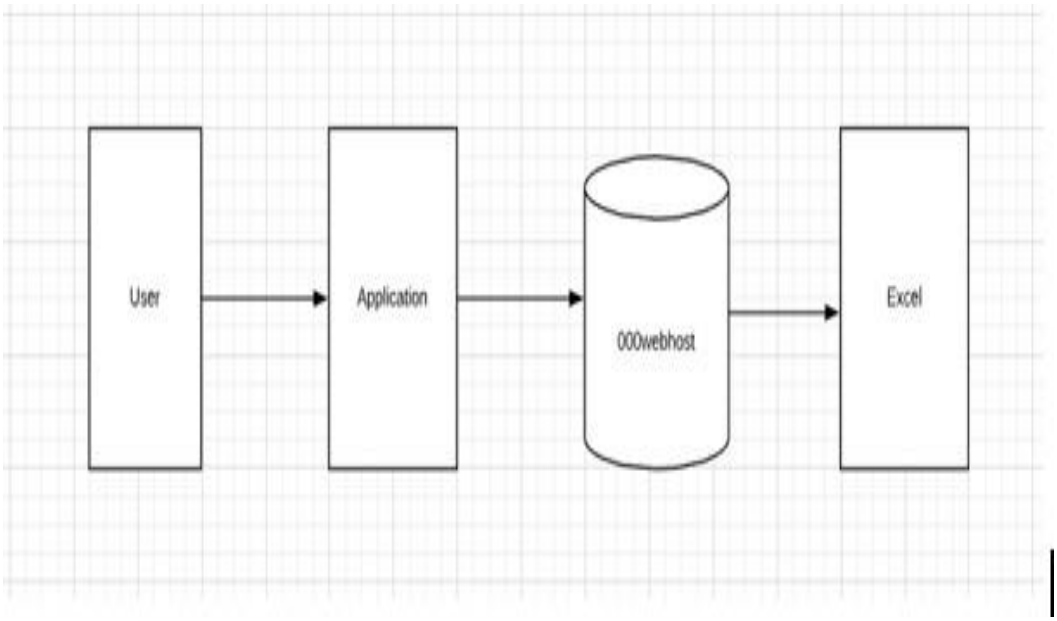

Figure 5.3: DFD level 0

5.3.2 DFD Level 1

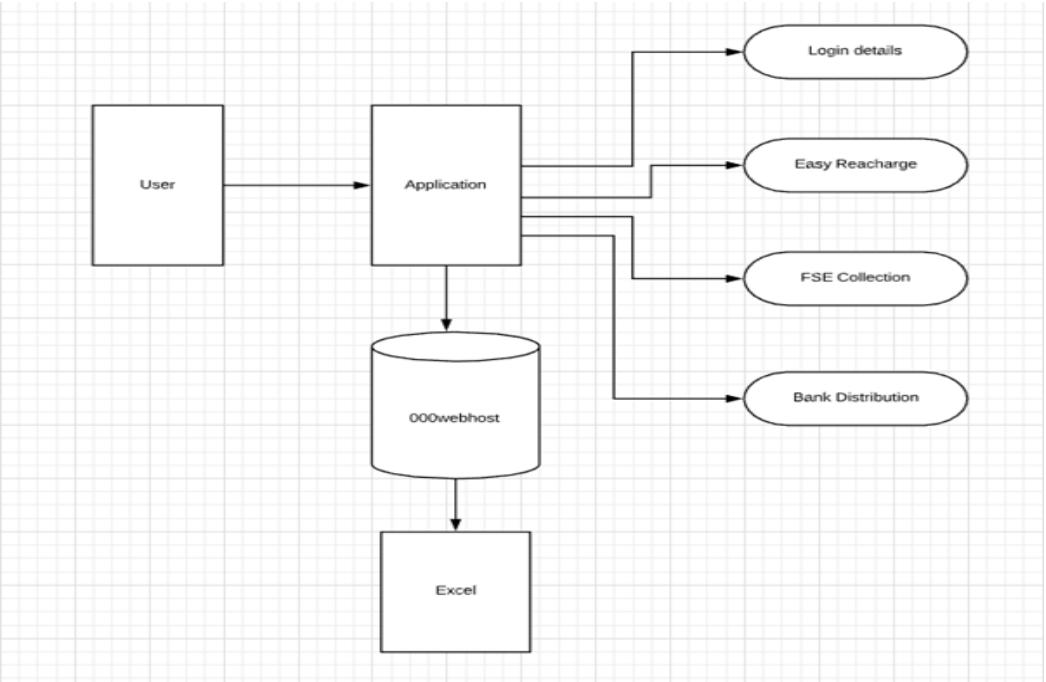

Figure 5.4: DFD level 1

5.3.3 DFD Level 2

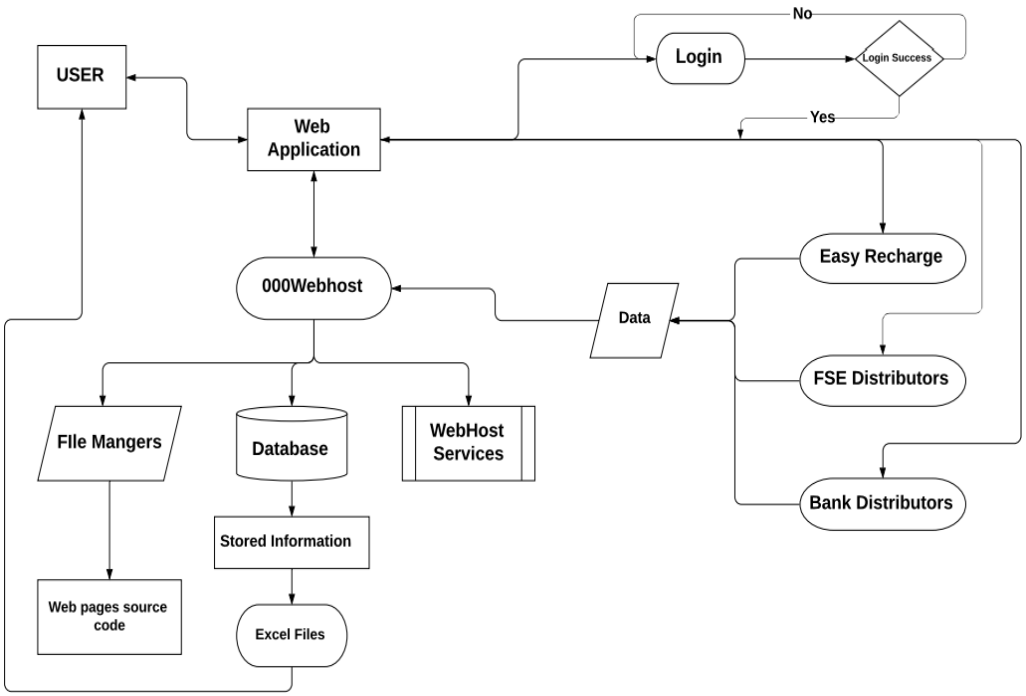

Figure 5.5: DFD level 2

5.4 UML Diagram

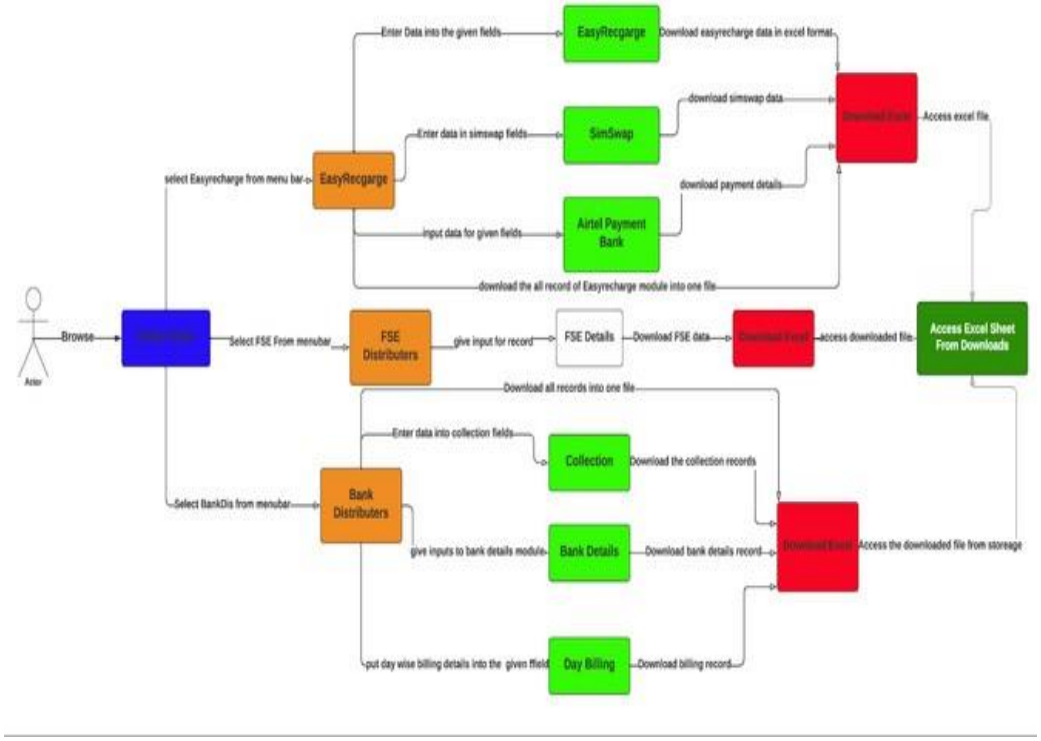

Figure 5.6: UML Diagram

5.5Database Diagram

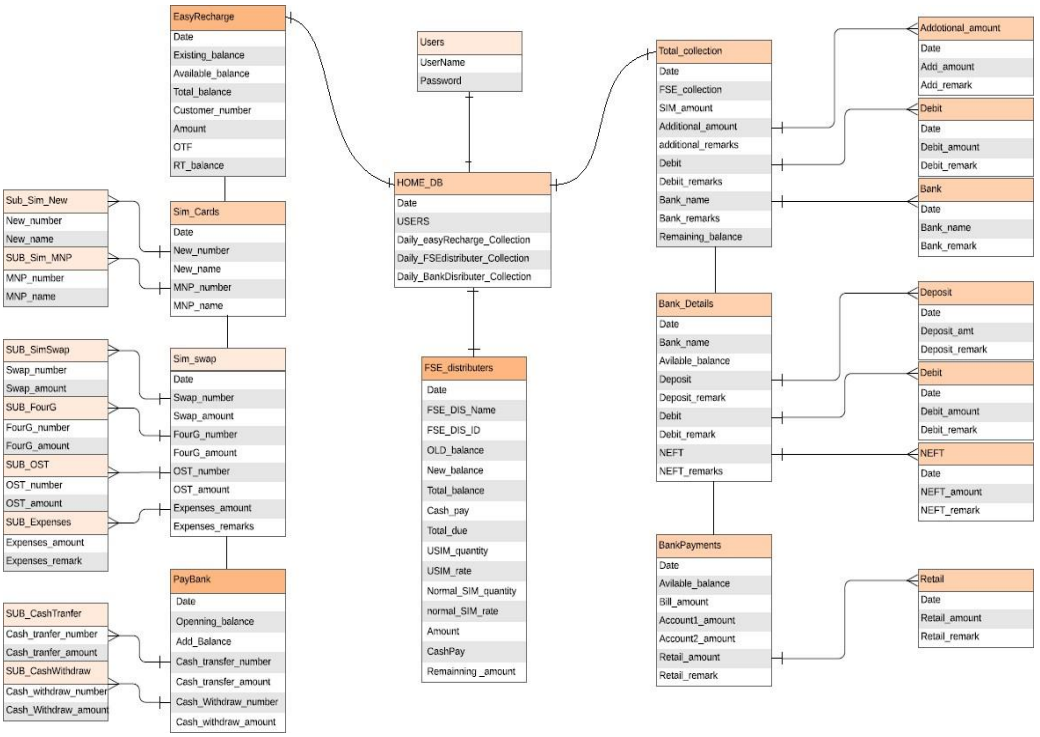

Figure 5.7: Database Diagram

Chapter 6

Development/Implementation Details

6.1Technology Implementation

- PHP

  PHP is an acronym for "PHP: Hypertext Preprocessor". PHP is a server scripting language and a powerful tool for making dynamic and interactive Web pages. PHP is a widely-used, free, and e cient alternative to competi- tors such as Microsoft's ASP. PHP 7 is the latest stable release.

  PHP can do-

  1. PHP can generate the dynamic page content.
  2. PHP can create, open, read, write, delete, and close les on the server.
  3. PHP can collect form data.
  4. PHP can send and receive cookies.
  5. PHP can add, delete, modify data in your database.
  6. PHP can be used to control user-access.
  7. PHP can encrypt data.

  PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.). PHP is compatible with almost all servers used today (Apache, IIS, etc.). PHP supports a wide range of databases.

- HTML

1. HTML is the standard markup language for creating Web pages.
2. HTML stands for HyperText Markup Language.
3. HTML describes the structure of a Web page.
4. HTML consists of a series of elements.
5. HTML elements tell the browser how to display the content.
6. HTML elements are represented by tags.

HTML tags label pieces of content such as "heading", "paragraph", "table", and so on. Browsers do not display the HTML tags but use them to render the content of the page.

- Bootstrap

1. Bootstrap 4 is the newest version of Bootstrap, which is the most popular HTML, CSS, and JavaScript framework for developing responsive,mobile-rst websites. Bootstrap is a free front-end framework for faster and easier web development.
2. Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins.
3. Bootstrap also gives you the ability to easily create responsive designs.

Responsive web design is about creating web sites that automatically adjust themselves to look good on all devices, from small phones to large desktops.

- JavaScript

JavaScript is the programming language of HTML and the Web. JavaScript is easy to learn. This tutorial will teach you JavaScript from basic to advanced.

1. HTML to de ne the content of web pages.
2. CSS to specify the layout of web pages.
3. JavaScript to program the behavior of web pages.

Web pages are not the only place where JavaScript is used. Many desktop and server programs use JavaScript. Node.js is the best known. Some databases,

like MongoDB and CouchDB, also use JavaScript as their programming language.

- MySQL

  MySQL is a database management system that allows you to manage relational databases. It is open-source software backed by Oracle. It means you can use MySQL without paying a dime. Also, if you want, you can change its source code to suit your needs. If you develop websites or web applications, MySQL is a good choice. MySQL is an essential component of the LAMP stack, which includes Linux, Apache, MySQL, and PHP.

6.2Implementation Tools

- SublineText

  Sublime Text is a shareware cross-platform source code editor with a Python application programming interface. It includes programming and markup languages and it is maintained under free-software licenses.

Chapter 7

Testing

Testing is used to evaluate the system and check whether user requirements are satisfied or not. It is used to detect defects/ error/ bugs of the system. Testing is used to check whether the objectives are being met or not.

Types of testing:

- Unit Testing: Testing where individual units/ components of a software are tested is known as Unit Testing. It is done by programmer. Detail of knowledge is required.
- Integration Testing: Separate units are combined and tested as a collection in Integration testing.
- System Testing: It is the type of black box testing where the whole system is tested. It is based on requirement specification and it covers integrated part of system.
- Regression Testing: After modification of single unit of code, it should not affect the complete system.
- Monkey Testing: Monkey testing is performed by tester. In this testing, tester provides random input without having any knowledge of the application.

Software testing tools:

- Selenium: Selenium is popular automation tested tool. It is especially designed for the automation testing. With the help of selenium, test cases are prepared automatically. Test cases can execute on any OS.

- {Ranorex: Ranorex is all in one tool of test automation.
- Test Studio: It is comprehensive test automation solution. Test studio is best for API and GUI testing. Mobile and web applications can be tested by using test studio.

7.1Test Case Table: -

Table 7.1: Test Case Table

Sr.No.	Test Case Title	Description	Valid Input	Output	Invalid Input	Output Error Message
1.	Admin Registration	Admin must register by providing all details	Enter valid email id and valid password	Display Admin Home page.	If any eld left empty.	Please enter valid email id and password
2.	Admin login	The login page is displayed	Enter user name and password	Display home page	1.Invalid email id and valid password 2.Valid email id and in- valid password 3.Invalid email id and invalid password	Please enter a valid user name and password.
3.	Easy recharge	Admin can enter existing balance and old balance.	Enter valid existing balance and old balance.	Display total balance	If a negative number is entered.	Please enter a valid number.
4.	Easy recharge	Admin can enter customer number, amount and OTF	Enter valid customer number.	Stored in the database.	If the invalid customer number entered.	Please enter a valid customer number.
5.	Sim cards	Admin can enter customer number and name for a new sim	Enter valid customer number and name.	Stored in the database.	If the invalid customer number, name.	Please enter a valid customer number, and name.
6.	Sim swap	Admin can enter customer number and name for porting a sim card	Enter a valid customer number, and name	Stored in the database.	If the invalid customer number.	Please enter a valid customer number and name.
7.	Sim swap	Admin can enter the customer number and the amount for a sim swap	Enter a valid customer number and amount	Stored in the database.	If the invalid customer number, amount	Please enter a valid customer number and amount
8.	Sim swap	Admin can enter the customer number and the amount.	Enter a valid customer number and amount.	Stored in the database.	If the invalid customer number, amount.	Please enter a valid customer number and amount.
9.	Logout	Person must logout from the site.	Click logout	Successfully logged out		

In Table 7.1, Test cases are de ned for Admin page, Registration and Login Page, Easy recharge page, Sim card page, Logout page. If user provide valid credentials then system will redirect to next page otherwise it will remain on same page.

Chapter 8

Deployment

8.1Readme File

- Please ensure that you have a good internet connection.
- Ensure that you have at least one browser to access the website. (ex. Chrome,Firefox,internet explorer)
- For better results please refer Chrome.
- Enter a valid URL in the browser and access the website.

8.2User Manual

8.2.1 Welcome page module

1. We provided a link for downloading the excel sheet of easy recharge submodules.
2. We provided a link to download the excel sheet of the sim card module with dates.
3. We provided a link for downloading the excel sheet of the sim swap module of an easy recharge module.
4. We provided a link to download the excel sheet of airtel payment bank data entries in the system.
5. We provided a download link for downloading the FSE distributor's data entries of their daily records.

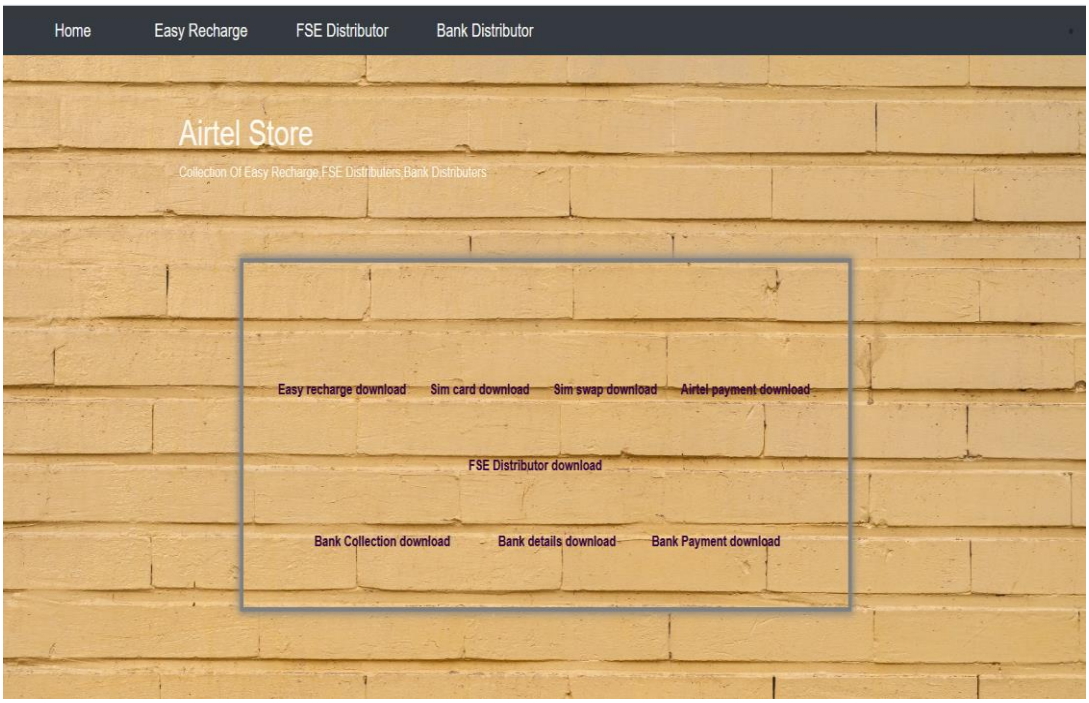

Figure 8.1: Menu

6. The 6th number download link will download the data entries of bank collections.

7. The 7th displayed link will download the bank details into excel format.

8. Using the 8th download link, we can download the bank payments and other payment details into an excel sheet.

8.2.2 Easy recharge module

Easy recharge

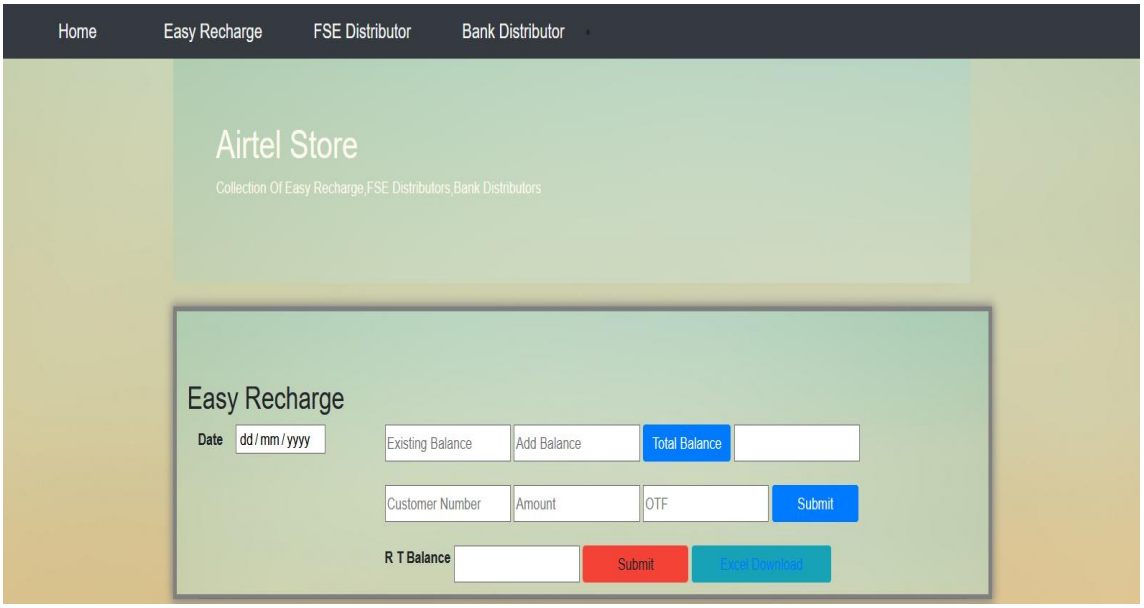

Figure 8.2: Easy Recharge

1. First, select the date for the further process of storing data into the database.
2. If you fill existing balance and add balance then with the help of this button
   you can do calculations and show onto the next eld.
3. To calculate R T balance you can use this button to perform an operation.
4. After all the processes of entries when you press this button then all data should be stored in the database.
5. Using this link you can download the easy recharge entries which are stored in the database into an excel file.

Sim cards and sim swap

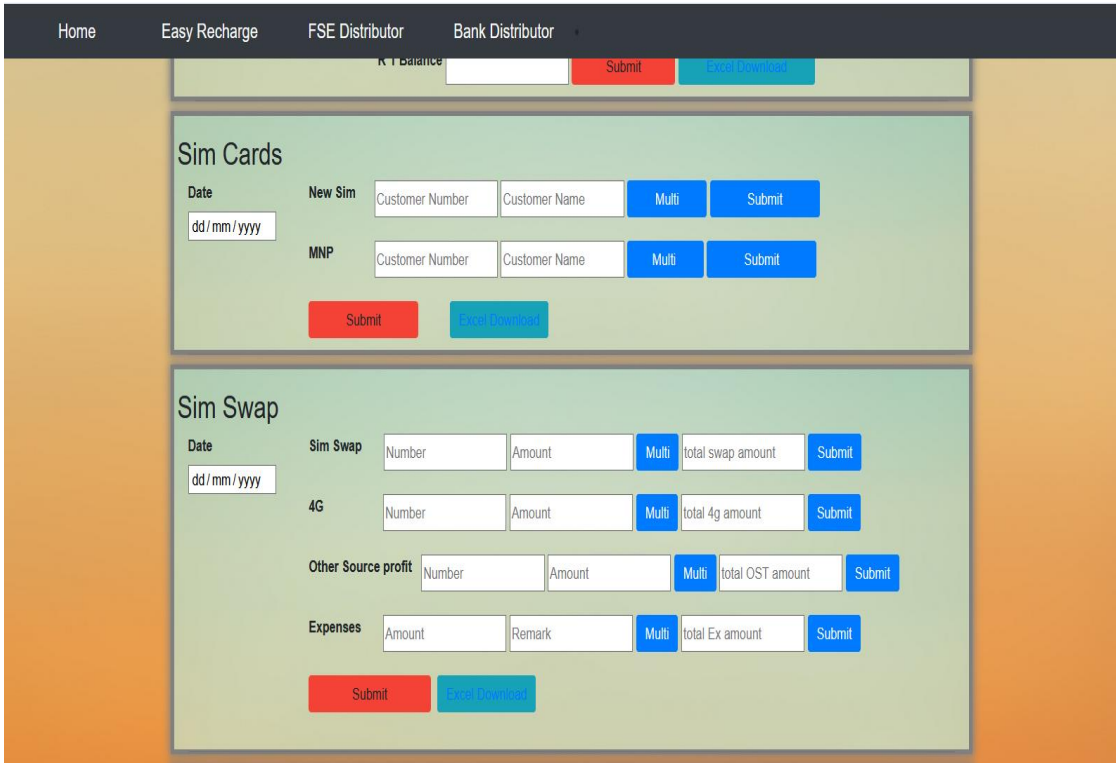

Figure 8.3: Sim cards and sim swap

1. First, select the date for the further process of storing data into the database.
2. Working of this multi-button is the same as the previous one this button also performs the multiple entries at a time with respect to their elds.
3. If all elds are filled with their data elds then with the help of this button you can store data into the database.
4. You can store all the data which is entered in the elds and it will store it in the database.
5. Using the given downloaded link, you can download the sim card entries into an excel file.
6. Working of this multi-button is the same as the previous one this button also performs the multiple entries at a time with respect to their fields.
7. If you want to store the data of a respected eld then you can use this button to store the data into the database.

8. And if you want to store all data of respected elds then you can use this button to store data into the database.

9. For downloading the data entries of the respected module then you can use this link to download the excel file.

Airtel payment bank

Figure 8.4: Airtel payment bank

1. First, select the date for the further process of storing data into the database.

2. Using this button you can add an opening balance with new balance into the database.

3. As per the working of the previous multi-button this multi-button is used to store multiple data entries into the database.

4. To submit or store the data of a respected le you can use this button to store data in the database.

5. Using this button you can store all data which is filled into respected elds.

6. If you want to download the excel sheet of this module then you can use this link to download the excel file.

8.2.3 FSE distributors

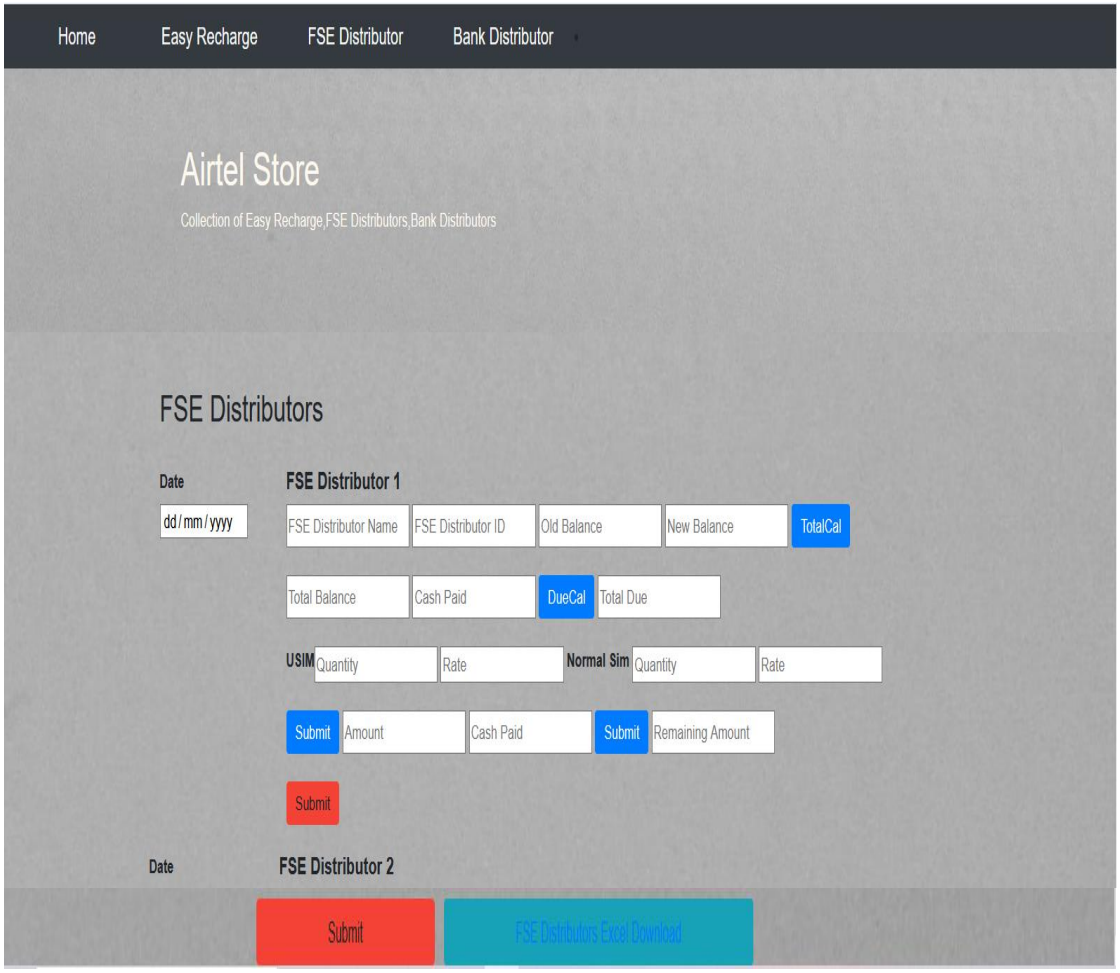

Figure 8.5: FSE distributors

1. First, select the date for the further process of storing data into the database.
2. The total collection will store the addition of old and new balance.
3. If the FSE distributor is paid some amount of the due payment then you can calculate their due with the help of this button.
4. After collecting the new items from the distributor, the distributor can calculate the amount and cash paid by the FSE distributors.
5. After clicking on this button, you will get the remaining balance on the screen.
6. Using the submit button you can store only one entry of FSE distributor as respect to their fields.

7. Using the last submit button you can store all entries and all distributors fields into the database.
8. And if you want to download the excel sheet of the FSE distributors module you can download an excel file.

8.2.4 Bank distributors

Collection

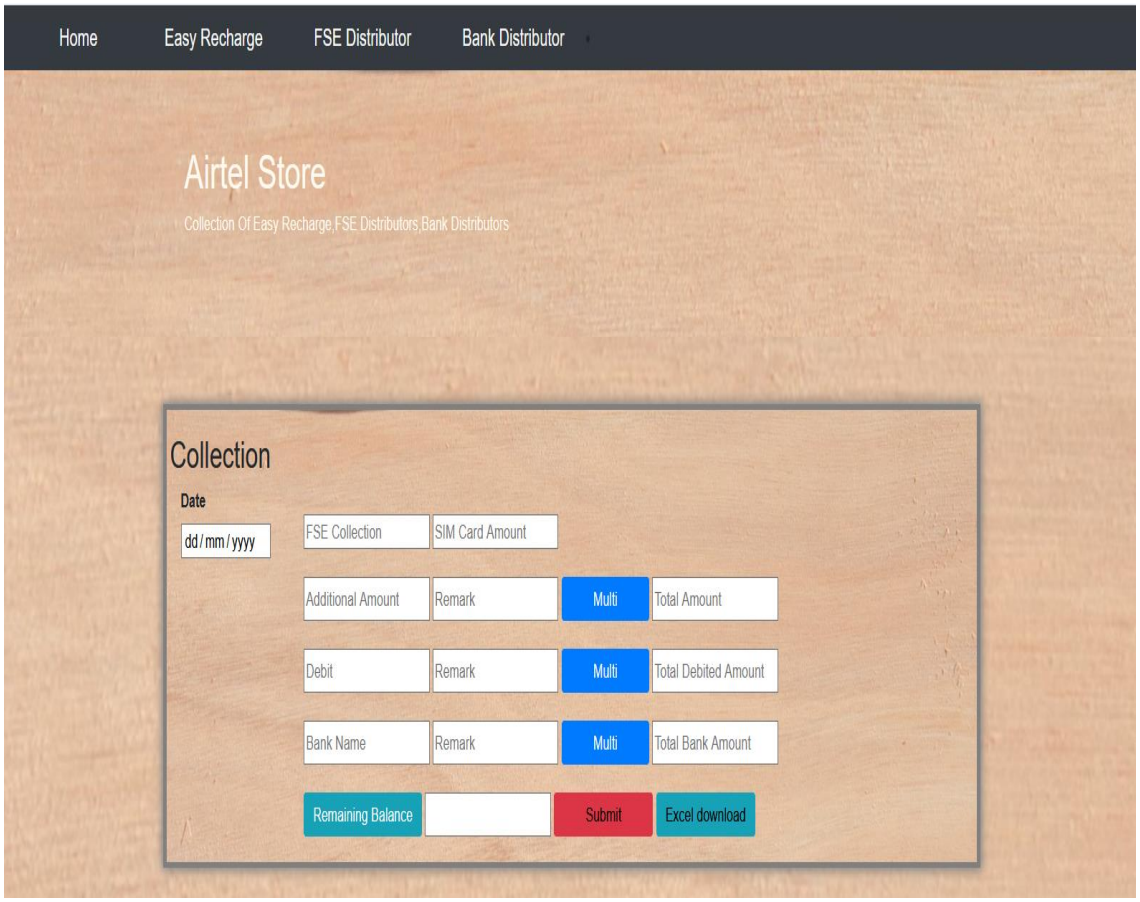

Figure 8.6: Collection

1.First, select the date for the further process of storing data into the database.

2.Working on this multi-button is the same as the previous one it will store multiple data entries into the database.

3.Using this button you can store data of respected elds into the database.

4.And if you want to download the excel file then you can download it by using this link.

Bank details

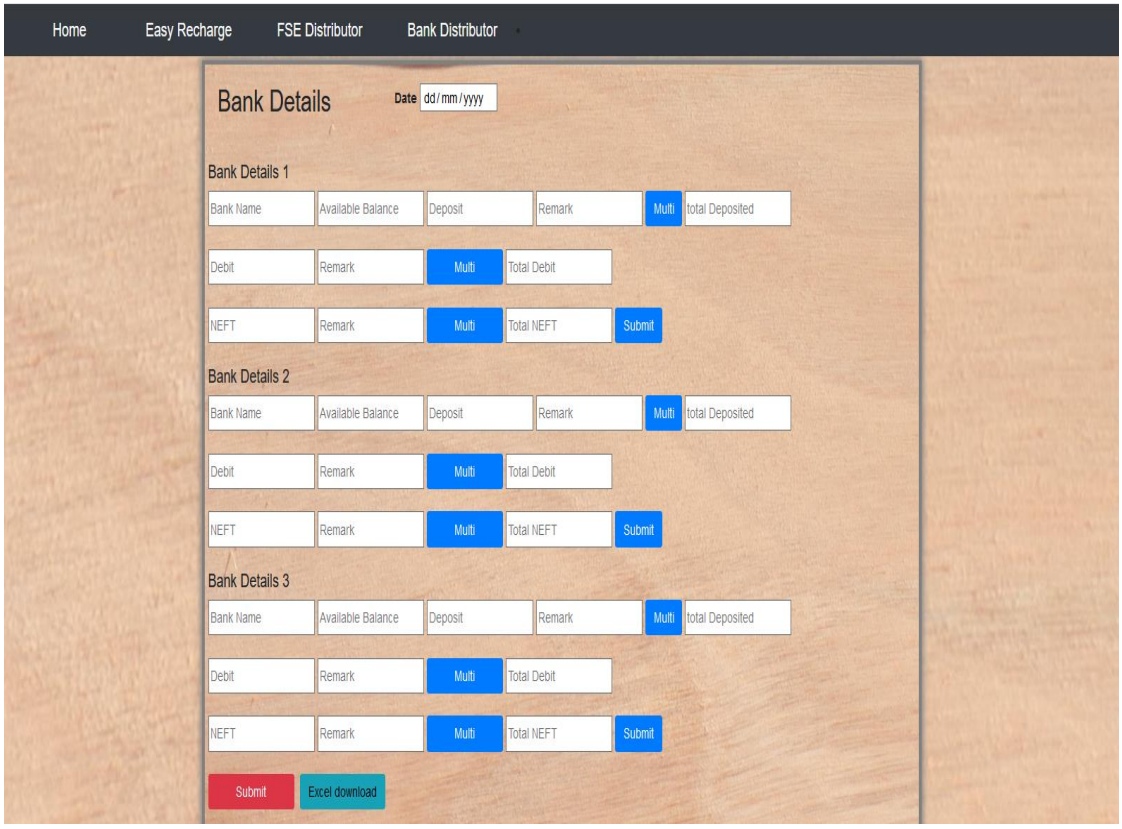

Figure 8.7: Bank details

1.First, select the date for the further process of storing data into the database.

2.Working on this multi-button is the same as the previous one it will store multiple data entries into the database.

3.Working on this multi-button is the same as the previous one it will store multiple data entries into the database.

4.If you want to store single bank details then you can use this button to store data into the database.

5.And if you want to do multiple bank details then you can use this button to store data.

6.And if you want to download the excel file then you can download it by using this link.

Day Billing

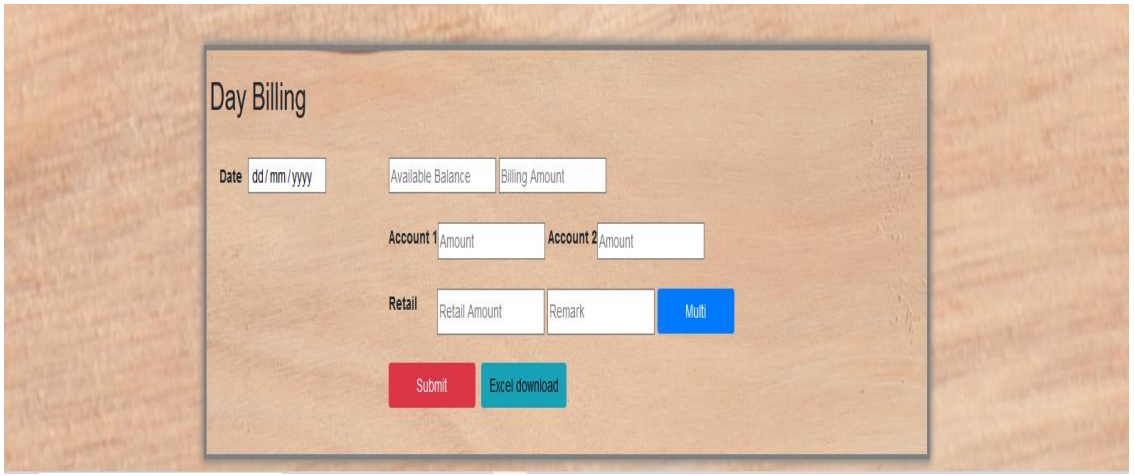

Figure 8.8: Day Billing

1.First, select the date for the further process of storing data into the database.

2.Working on this multi-button is the same as the previous one it will store multiple data entries into the database.

3.After lling all data of respected elds you can store data into the database using this button.

4.And if you want to download the excel le of the day billing module then you can use this link.

Chapter 9

Conclusion and Future Work

We have developed a user-friendly web application for users which is easy to use for them and they can change according to their requirements in the future. Our team has helped clients to take their business to the next level with the help of custom-made solutions. Using this application the user can store data related to their business and can store it into an online database so it can not get a ected due to any hardware related problem. In the future we will fully automate the web application and will provide more functions into the website.

Chapter 10

References

[1] Comparative Study of Traditional Database and Cloud Computing Databas-eSapna Jain, M AfsharAlam Department of CSE SEST JamiaHamdard, New Delhi, India.

[2] Cloud Database As a service Waleed Al Shehri Department of Computing, Macquarie University Sydney, NSW 2109, Australia.

[3] Building Web Application using Cloud Computing Maha A. Sayal, Ehsan Ali Al-Zubaidi Computer Science Department,College of Computer Science and Math-ematics, University of Thi-Qar.

[4] S.Al-Fedaghi, web-based description of conceptual and design levels†, IEEE International Conference on Computer Engineering and Technology 2009, January 22 24, 2009. Singapore.

[5] Development of an Electronic Commerce WEB ApplicationOlusegun O. Omi-tola, Department of Computer Engineering, AfeBabalola University, Ado Ekiti, Nigeria.

[6] A Study Focused on Web Application Development using MVC Design Pattern-Ram Naresh Thakur1, Dr. U.S. Pandey2 ,1Research Scholar, Mewar University, Rajasthan, India2Professor, University of delhi.

[7] Snider, J.H.; Ziporyn, Terra (1992). Future Shop: How New Technologies Will Change the Way We Shop and What We Buy. St. Martin's Press. ISBN 978-0- 312-06359-7. Retrieved 2012-12-28.

[8] Applegate, L.M. et al (1996) "Electronic Commerce: Building Blocks of New Business Opportunity", J. of Organizational Computing and Electronic Commerce (6)1, pp. 1-10

[9] Olsen,Robert (2010)."China's migration to e-commerce". Forbes.com.

[10] Visual Studio 2005 SDK. "Visual Studio Development Environment Model". Microsoft. Retrieved 2008-01-01.