

BRICK FACTORY MANAGEMENT SYSTEM

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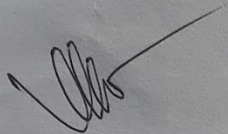
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APPROVAL

This Project titled “**Brick Factory Management System**”, submitted by Sabuj Sarker, ID No: 152-15-5703, Shubho Kumar Bosu, ID No: 152-15-5645 and Puja Saha, ID No: 152-15-5792 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 3rd May 2019.

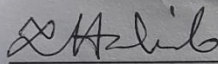
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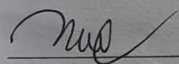
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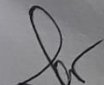
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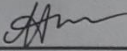
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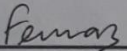
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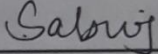
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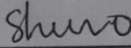


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
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ABSTRACT

This project titled “Brick Factory Management System” which can help the brick factory owners to maintain their all activities. It can maintain their factory by storing some information such as brick category, expense information, customer’s information, purchase information, raw bricks information, loaded bricks information, unload bricks information, advanced payment information etc. The factory owners also see and download the monthly, weekly or any time expense and bill report which he wants. This application has been developed by content management system using HTML, CSS, Java script, Bootstrap4 and written in PHP (Codeigniter Framework MVC Pattern) and MYSQL Database. This application can play a vital role to maintenance a brick factory easily.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Our country is a developing country. Day by day every sector is being developed by using the modern technology. Maximum no of brick industry is situated in rural area where the workers and also owners don't have enough knowledge about modern technology. For those factory owners this project provides everything which is need to enhance a bricks business and maintenance a brick factory. It is a user friendly management system that's why the bricks factory owners can use it simply and easily.

1.2 Motivation

Nowadays, most of our bricks factory owners maintain their all activities manually. It wastes their valuable time and energy. Suppose if anyone want to know their previous year factory bill report or anything then he has to search on all his previous documents so it is very difficult process for them. For those reason, we are developing a management system for the brick factory owners so that they can maintain all their activities by a software.

1.3 Objectives

- To maintain bricks factory management easily.
- To secure factory related data.
- To make transparency between owners and sarders of a factory.
- To gather all kinds of calculative data efficiently.
- To get factory sells or cost report instantly.
- To get exact calculative result of any sector easily.
- To calculate waste of a brick factory.
- To make clear identification about all machine productivity.

1.4 Expected Outcome

We will get a management software where the user is brick factory owners. They can maintain their all factory manufacturing activities through this management software. This software contains simple features so the factory owners use this software easily.

1.5 Report Layout

Chapter 1: Introduction

Here we discuss about the introduction, motivation, objectives, expected outcome and also this report layout in this project.

Chapter 2: Background

In this chapter we discuss about the used tools in this project and also discuss about the similar projects which is developed before. We also discuss about the new features in our project and what is the challenges on the way to develop this project.

Chapter 3: Requirement Specification

Here we discuss about the business process modeling, requirement collection and analysis, use case modeling, logical data model and also discuss about the design requirements.

Chapter 4: Design Specification

In this chapter basically we discuss about the design pattern of our project such as front-end design, back-end design, interaction design & UX and also discuss implementation requirements.

Chapter 5: Implementation and Testing

This chapter is all about implementation of various things such as database, front-end design, interactions. Here we also describe testing implementation, test result and reports of this project.

Chapter 6: Conclusion and Future Scope

Here we discuss about the conclusion of our project. In future if we want to add any new features and want to develop this system to make more efficient here we taking about that topics.

CHAPTER 2

BACKGROUND

2.1 Introduction

A web application is software that runs on web server. We develop this system by using NetBeans ide, Notepad++ ide. Here we used PHP (Codeigniter framework) as the coding language and we used HTML5, CSS, JAVASCRIPT, BOOTSTRAP as the design purpose.

In our project we used MYSQL database and also used WAMPSEVER as web server.

2.2 Related Works

We have found one web application existing which some features are like our application. But their huge difference between that application and our application. Actually we found that project at you tube named brick software.

Here we give the features of **Brick Software** [1], in figure 2.1.

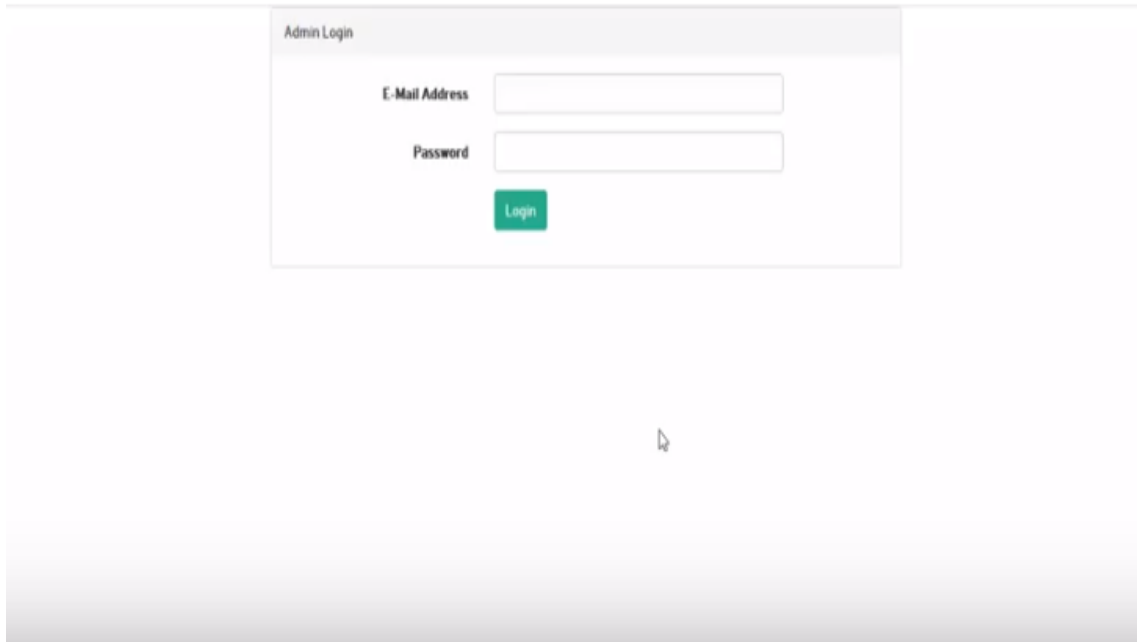


Figure 2.1: Brick Software

Features:

- User can login in the system.
- Here they can maintain some features like customer's info, sells amount, expense amount, workers info, daily expense and profit, delivery date, owners personal cost, brick info etc.
- Factory owners can't download the report or don't print it.

Problems:

- This system doesn't have any machine info which is used in brick factory.
- User can't add brick info according to brick category.
- Specific which work is running under a sarder of a factory don't show here.
- Single Sarders expense report can't calculate.
- Don't show category wise sells and expense reports.
- Here is no waste calculation.

2.3: Comparative Studies

There are many common things is existing in our application. But our application is more user friendly and more fruitful than that application. In our application the factory owners can found all their required features and we also added many new features that wasn't the another application which we mentioned before. There we see many problems but in this application we fix all their problems by discussing many bricks factory owners and also following their requirements. So our bricks factory management system is better than others.

2.4 Scope of the problem

This is a web based application. There are many developers now work on this platform. Day by day technology is being updated. Suppose someone made an application some month or some years ago but now the user needs more features in that application when others developers can want to fulfill their requirements as the need. They make another application for them. But therefore some difficulties always have in a system. In our application we are tried to fulfill all of the requirements of bricks factory owners that's why they can simply and easily maintain their bricks manufacturing activities. We can ensure this the most efficient application for bricks factory.

2.5 Challenges

At the beginning stage of every work in our daily life we have to face many kinds problems. But when we start to do that task one by one we overcome all of the problems. We are good at problem solving using language c, c++ etc. But in development project we faced many challenges such as

- We have little bit knowledge in PHP. It was a great challenge for us to learn PHP (Codeigniter framework).
- Secondly we must have to use database for any development project. For that we preferred MYSQL database for our project and it was also a big challenge to learn this.
- When we were thinking about the project idea then their no web application about it but some days later when we started our development process we found one similar application. So here it was a great challenge for us to added more efficient features for a bricks factory. For that we talked many factory owners about what they needed by visiting many factories.
- In development process when we want to add a features like under a date. There have to added many data in this particular part. We had to used JAVASCRIPT. So for learning that was a huge problem.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modelling

BPM or Business Process Modeling is a procedure of developing a basic perspective on a framework or procedure. In our system admin enter the system then he can add brick category, vendor info, expense category, sarder type, and others features shown in figure 3.1. Sarder can add raw brick but here he has to take data from machine category and sarder info for this task, he also can add loaded bricks, unload bricks etc. Figure 3.1 shows the business process model of our system.

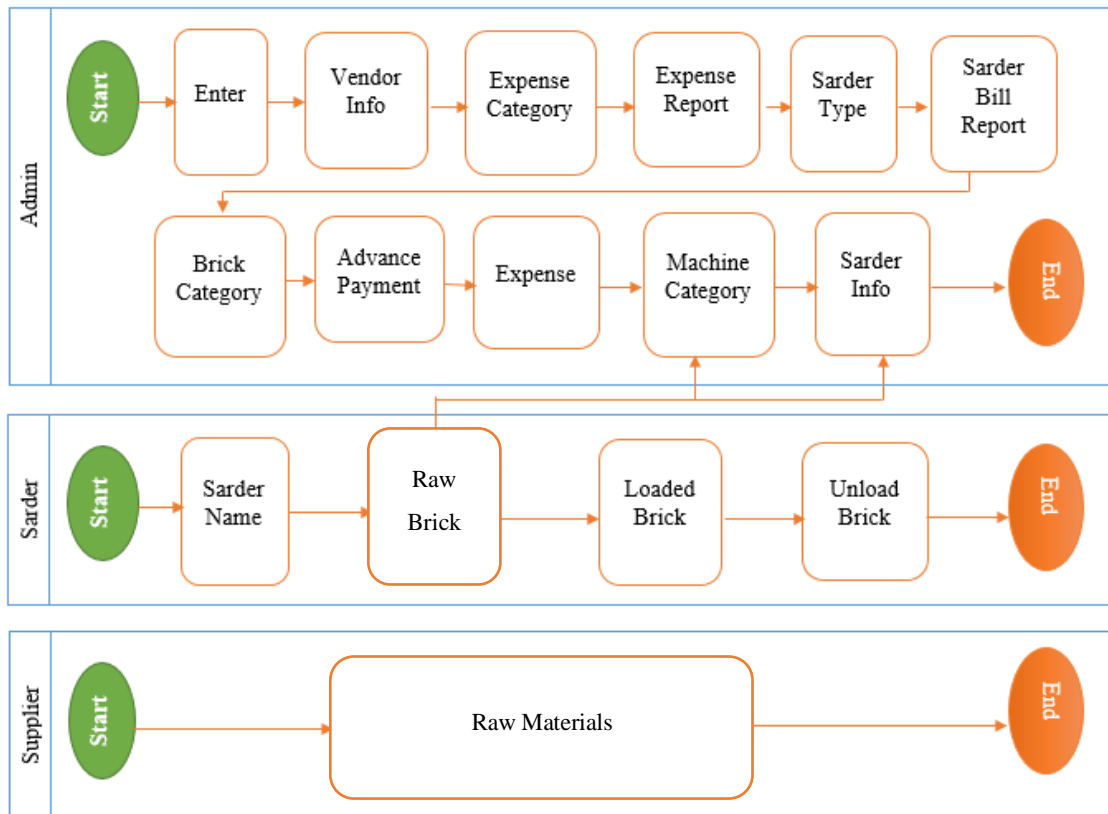


Figure 3.1: Business Process Model

3.2 Requirements Collection and Analysis

Requirement collection means which is needed to develop our project. It could be hardware requirements or software requirements. Here we give all of the requirements that's we used for developing our project.

- Languages for coding
 - PHP(Codeigniter)
 - HTML
 - CSS
 - BootStrap4
 - JavaScript
 - MySQL
- Software IDE
 - Notepad++
 - NetBeans
- Hardware
 - Computer

Analysis

This system is only for the brick factory owner. When we see their activities that they input all their data in a paper in short their maintenance system is manually then we decided to make their work so easy and efficient. This system existing with collaborate features and also user friendly that why if anyone just have some knowledge about operating computer then he can use this system efficiently.

3.3 Use Case Modelling

Figure 3.2 shows the use case diagram of our system

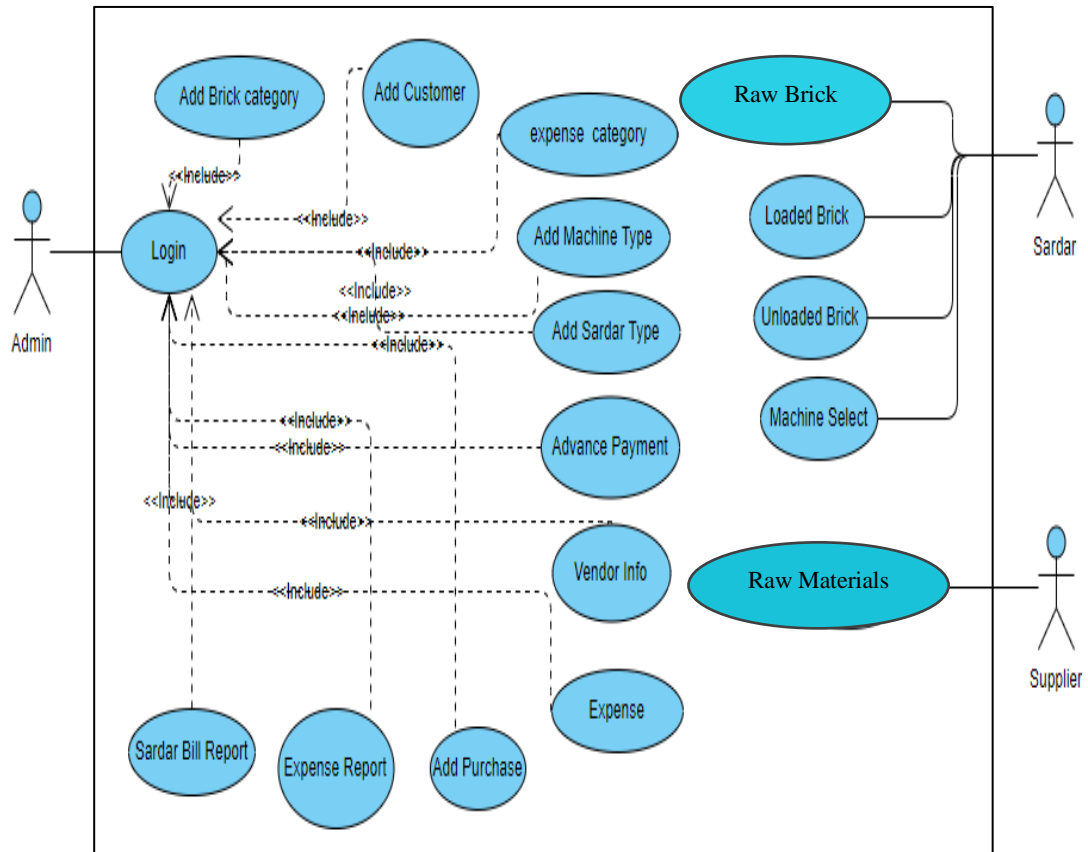


Figure 3.2: Use case diagram of Brick factory management system

3.4 Use Case Description

For Login

Table 3.1 shows the use case description for login. Here admin login in the system by entering valid username and password. If admin enter invalid username and password, then can't login the system.

TABLE 3.1: USE CASE DESCRIPTION FOR LOGIN

UCID	01
Use Case Name	Login
Actor	Admin
Pre-Condition	Null
Post Condition	Successfully enter the system
Normal Flow	Enter username and password
Alternative Flow	Invalid username and password then can't enter the system

For Add Brick Category

Table 3.2 shows the use case description for add brick category. Here admin have to login the system and enter the category name then admin able to add new category.

TABLE 3.2: USE CASE DESCRIPTION FOR ADD BRICK CATEGORY

UCID	02
Use Case Name	Add brick category
Actor	Admin
Pre-Condition	Login
Post Condition	Category added Successfully
Normal Flow	Enter the category name
Alternative Flow	Null

For Add Customer

Table 3.3 shows the use case description for add customer. Here admin have to enter the customer full information in the system and then admin can add the new customer information.

TABLE 3.3: USE CASE DESCRIPTION FOR ADD CUSTOMER

UCID	03
Use Case Name	Add customer
Actor	Admin
Pre-Condition	Login
Post Condition	Customer added Successfully
Normal Flow	Enter the customer name, fathers name, mothers name, mobile number, NID number, address
Alternative Flow	Null

For Add Expense Category

Table 3.4 shows the Use Case Description for Add Expense Category. For this purpose, admin have to enter the name of category and then admin able to add new expense category in the system.

TABLE 3.4: USE CASE DESCRIPTION FOR ADD EXPENSE CATEGORY

UCID	04
Use Case Name	Add expense category
Actor	Admin
Pre-Condition	Login
Post Condition	Expense Category added Successfully
Normal Flow	Enter the name
Alternative Flow	Null

For Add Machine Type

Table 3.5 shows the Use Case Description for Add Machine Type. Here admin can add all of his machine information. Admin have to enter machine name and others information to do that task.

TABLE 3.5: USE CASE DESCRIPTION FOR ADD MACHINE TYPE

UCID	05
Use Case Name	Add Machine Type
Actor	Admin
Pre-Condition	Login
Post Condition	Machine Type added Successfully
Normal Flow	Enter the machine name
Alternative Flow	Null

For Add Sarder Type

Table 3.6 shows the Use Case Description for Add Sarder Type. Admin can add the types of sarder by entering the name and others information of any sarder.

TABLE 3.6: USE CASE DESCRIPTION FOR ADD SARDER TYPE

UCID	06
Use Case Name	Add sarder type
Actor	Admin
Pre-Condition	Login
Post Condition	Sarder type added Successfully
Normal Flow	Enter the sarder name
Alternative Flow	Null

For Add Advance Payment

Table 3.7 shows the Use Case Description for Add Advance Payment. For this task admin have to login the system and enter the name, date, amount in the advance payment option. Then a notification shows advance payment added successfully.

TABLE 3.7: USE CASE DESCRIPTION FOR ADD ADVANCE PAYMENT

UCID	07
Use Case Name	Add Advance Payment
Actor	Admin
Pre-Condition	Login
Post Condition	Advance Payment added Successfully
Normal Flow	Enter the sarder name, date, amount
Alternative Flow	Null

For Add Vendor Information

Table 3.8 shows the Use Case Description for Add Vendor Information. Here admin have to enter the vendor name, id, type, mobile number, address etc. Then by clicking submit button admin can add the vendor information.

TABLE 3.8: USE CASE DESCRIPTION FOR ADD VENDOR INFORMATION

UCID	08
Use Case Name	Add Vendor Information
Actor	Admin
Pre-Condition	Login
Post Condition	Vendor Information added Successfully
Normal Flow	Enter the vendor name, vendor id, type, mobile number, address
Alternative Flow	Null

For Add Expense

Table 3.9 shows the Use Case Description for Add Expense. Here admin have to enter the voucher id, expense amount and select date in the system. Then by submitting admin can added successfully expense information in the system.

TABLE 3.9: USE CASE DESCRIPTION FOR ADD EXPENSE

UCID	09
Use Case Name	Add Expense
Actor	Admin
Pre-Condition	Login
Post Condition	Expense added Successfully
Normal Flow	Enter the voucher id, expense amount, date.
Alternative Flow	Null

For Add Purchase

Table 3.10 shows the Use Case Description for Add Purchase. Here admin have to Select product type, vendor, unit and enter the quantity, price, total price, paid amount, due amount, date and description for add new purchase information.

TABLE 3.10: USE CASE DESCRIPTION FOR ADD PURCHASE

UCID	010
Use Case Name	Add Purchase
Actor	Admin
Pre-Condition	Login
Post Condition	Purchase added Successfully
Normal Flow	Select product type, vendor, unit and enter the quantity, price, total price, paid amount, due amount, date and description
Alternative Flow	Null

For Show Expense Report

Table 3.11 shows the Use Case Description for Show Expense Report. Here admin only can show the expense report. Admin can show the weekly, monthly, or any time report in the system.

TABLE 3.11: USE CASE DESCRIPTION FOR SHOW EXPENSE REPORT

UCID	011
Use Case Name	Show Expense Report
Actor	Admin
Pre-Condition	Login
Post Condition	Show Expense Report Successfully
Normal Flow	Select expense category and date
Alternative Flow	Null

For Show Sarder Bill Report

Table 3.12 shows the Use Case Description for Show Sarder Bill Report. Only admin can show the sarder bill reports in the system.

TABLE 3.12: USE CASE DESCRIPTION FOR SHOW SARDER BILL REPORT

UCID	012
Use Case Name	Sarder Bill Report
Actor	Admin
Pre-Condition	Login
Post Condition	Show Sarder Bill Report Successfully
Normal Flow	Select sarder and date
Alternative Flow	Null

For Raw Bricks

Table 3.13 shows the Use Case Description for add Raw Bricks. Admin can add raw bricks information in the system. Here admin can also calculate the price of bricks.

TABLE 3.13: USE CASE DESCRIPTION FOR RAW BRICKS

UCID	013
Use Case Name	Raw Bricks
Actor	Admin
Pre-Condition	Login
Post Condition	Raw Bricks added Successfully
Normal Flow	Select sarder name, machine, unit and enter price per unit, date
Alternative Flow	Null

For Loaded Bricks

Table 3.14 shows the Use Case Description for Loaded Bricks. Admin can add loaded bricks information in the system. Here admin can also calculate the price of bricks.

TABLE 3.14: USE CASE DESCRIPTION FOR LOADED BRICKS

UCID	014
Use Case Name	Loaded Bricks
Actor	Admin
Pre-Condition	Login
Post Condition	Loaded Bricks added Successfully
Normal Flow	Select sarder name, machine, unit and enter price per unit, date
Alternative Flow	Null

For Unload Bricks

Table 3.15 shows the Use Case Description for unload bricks. Admin can add unload bricks information in the system. Here admin can also calculate the price of bricks.

TABLE 3.15: USE CASE DESCRIPTION FOR UNLOAD BRICKS

UCID	015
Use Case Name	Unloaded Bricks
Actor	Admin
Pre-Condition	Login
Post Condition	Unloaded Bricks added Successfully
Normal Flow	Select sarder name, machine, unit and enter price per unit, date
Alternative Flow	Null

For Machine

Table 3.16 shows the Use Case Description for Machine. Admin can add machine information in the system. Their many category of machine.

TABLE 3.16: USE CASE DESCRIPTION FOR MACHINE

UCID	016
Use Case Name	Machine
Actor	Admin
Pre-Condition	Login
Post Condition	Machine information added Successfully
Normal Flow	Enter machine name
Alternative Flow	Null

For Raw Materials

Table 3.17 shows the Use Case Description for Raw Materials. Here admin can add raw materials information in the system.

TABLE 3.17: USE CASE DESCRIPTION FOR RAW MATERIALS

UCID	017
Use Case Name	Raw Materials
Actor	Admin
Pre-Condition	Login
Post Condition	Raw Materials added Successfully
Normal Flow	Select machine
Alternative Flow	Null

3.5 Design Requirements

If we want to make our system, more user friendly and more attractive to the user we must have to design our application with new features, flexible, integrated and also advanced.

This system is follow all that requirements. Here we give some point about it below.

- Our main target user is rural areas brick factory owners. So we tried to make our project that they have full control in this project.
- New constructive features.
- Simplicity.
- User friendly.
- Efficiency.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

Front-end development, otherwise called customer side advancement is the act of creating HTML, CSS, JavaScript for a site or web application so a client can see and connect with them straightforwardly [2]. For an advantageous client experience, it is normally should have been easy to understand and justifiable by the clients. There, while building up the application we endeavored to make it easy to use with the goal that the client can undoubtedly utilize it.

In our project for front-end design here we used following languages

- HTML
- CSS
- Bootstrap4
- JavaScript

4.2 Back-End Design

The back-end, or the "server-side", is fundamentally how the site works, updates and changes. This alludes to everything the client can't find in the program, similar to databases and servers [3]. Back-end engineers are for the most part stressed over things like security, structure and substance the executives.

For back-end design developers have to work with programming dialects like PHP or .Net, since they have to work with something the database gets it. The code they compose calls with the server and afterward advises the program what to use from the database.

In our project for back-end design here we used following languages

- PHP (Codeigniter framework) as server side languages.
- MySQL server for database management.

4.3 Interaction Design and UX

Interaction design speaks to the connection of the application through the client. Interaction design implies the framework handling the issues that a client faces or need to continue through the application. It mostly centers the general results of the application.

The UX represents the client experience. Client experience is imperative for any application. It implies the general highlights that is utilized helpfully by the client. For a superior client experience there ought to be a superior plan and the application ought to be easy to use.

We are tried to utilize this two term in our application to make our project most user friendly and also focus on that the client have an extraordinary utilizing background.

4.4 Implementation Requirements

Our application depends on web advancement framework which can be made through the IDE NetBeans IDE or Notepad++ IDE for web projects. These are easy to get and anybody can utilize it by introducing it. Those IDE encourages us with code modifying, investigating, execution tooling, a versatile structure system.

Here we will talk about the usage necessities that we have to finish this application.

NetBeans

NetBeans IDE is the authority IDE for Java 8. with its editors, code analyzers, and converters, we can rapidly and easily update our applications. The supervisor underpins numerous dialects from Java, C/C++, XML and HTML, to PHP, Groovy, Javadoc, JavaScript and JSP [4]. Here we used PHP(Codeigniter) for our project server site language.

Notepad++

Notepad++ is a free (as in "free discourse" and furthermore as in "free lager") source code manager and Notepad substitution that underpins a few dialects [5]. We use this IDE for editing code according to our needs.

WampServer

WampServer's+ functionalities are extremely finished and simple to utilize. It deals with our Apache and MySQL administrations, switch on the web/disconnected (offer access to everybody or just localhost), introduce and switch Apache, MySQL and PHP discharges deal with our server's settings, get to our logs, get to our settings documents [6].

Here we use this for store database on local server.

4.5 Project Flowchart

Figure 4.1 shows the project flowchart of our system. In this system admin have to login the system by using correct username and password. If admin enter the wrong username or password, then can't login the system. After enter the system admin can access all the features like brick category, expense category, machine info, sarder type, sarder info, vendor info, customer info, purchase, raw bricks, loaded bricks, unloaded bricks, unload bricks, advance payment, expense, show expense reports and sarder bill reports. Then after complete all tasks admin can logout from the system.

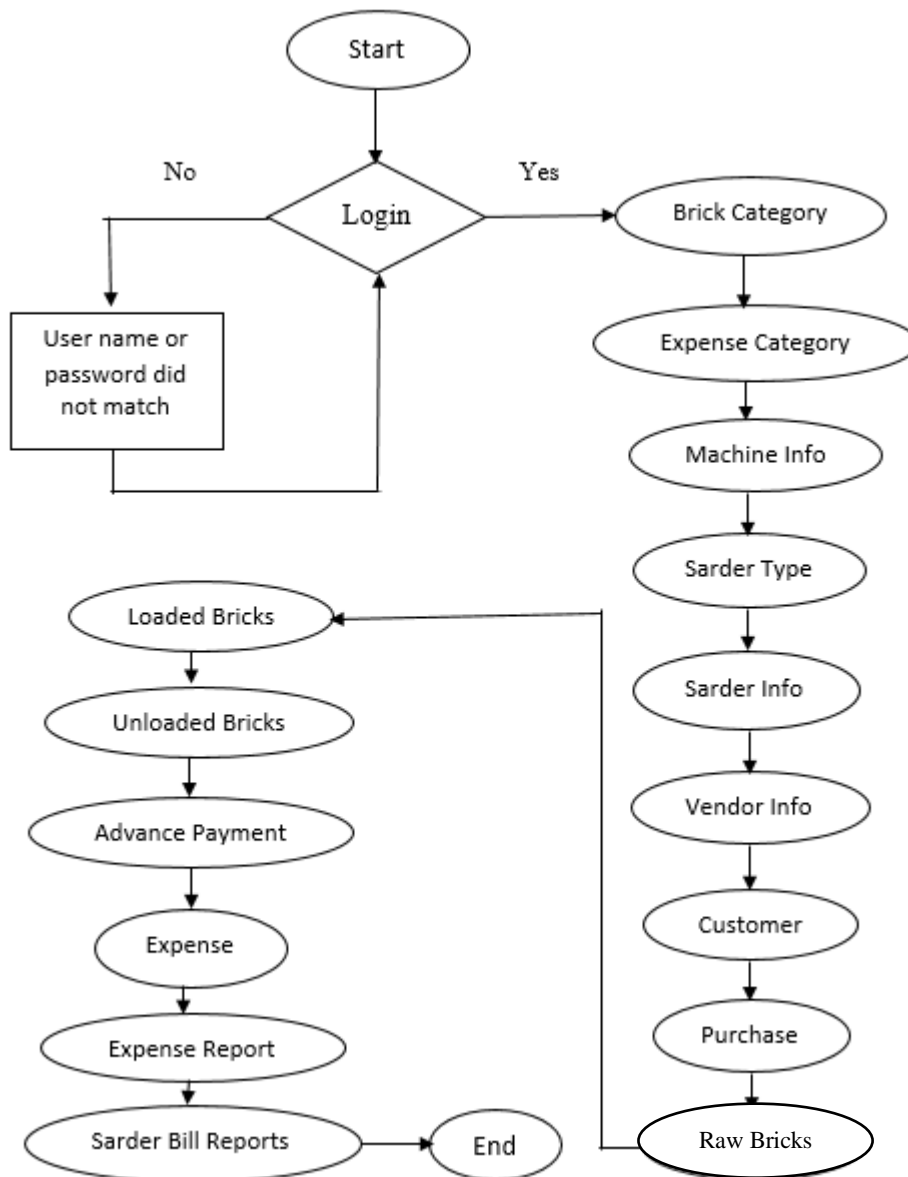


Figure 4.1: Project Flowchart

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Database Management alludes to the innovation arrangement used to upgrade and deal with the capacity and recovery of information from databases.

Most of the web application development purpose MySQL database is used. In this project we also use MySQL database and stored in localhost phpMyAdmin.

Our main database name is san bricks. All of the tables that we created for our project shown in figure 5.1, 5.2 and 5.3.

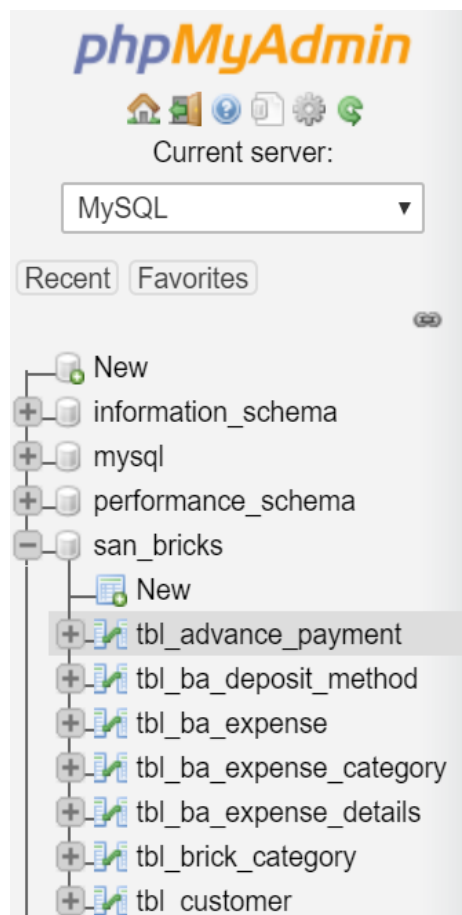


Figure 5.1: Database Table

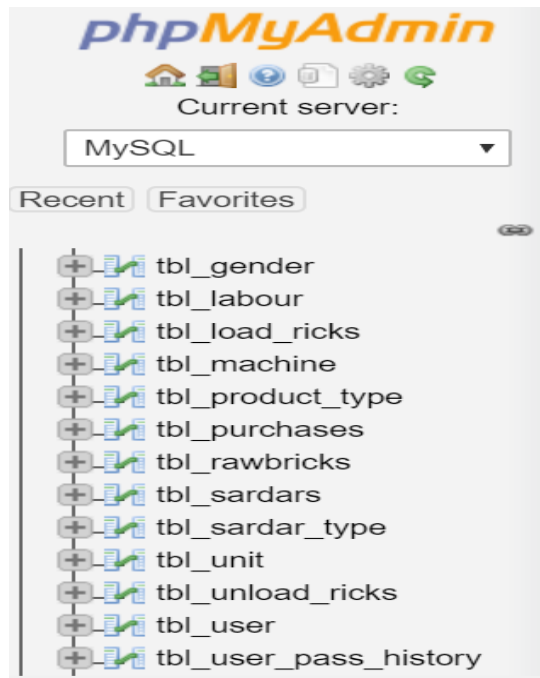


Figure 5.2: Database Table

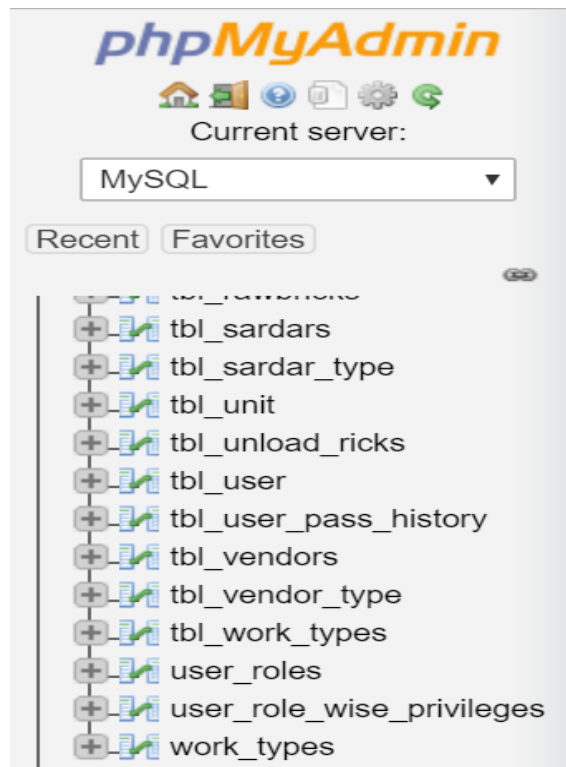


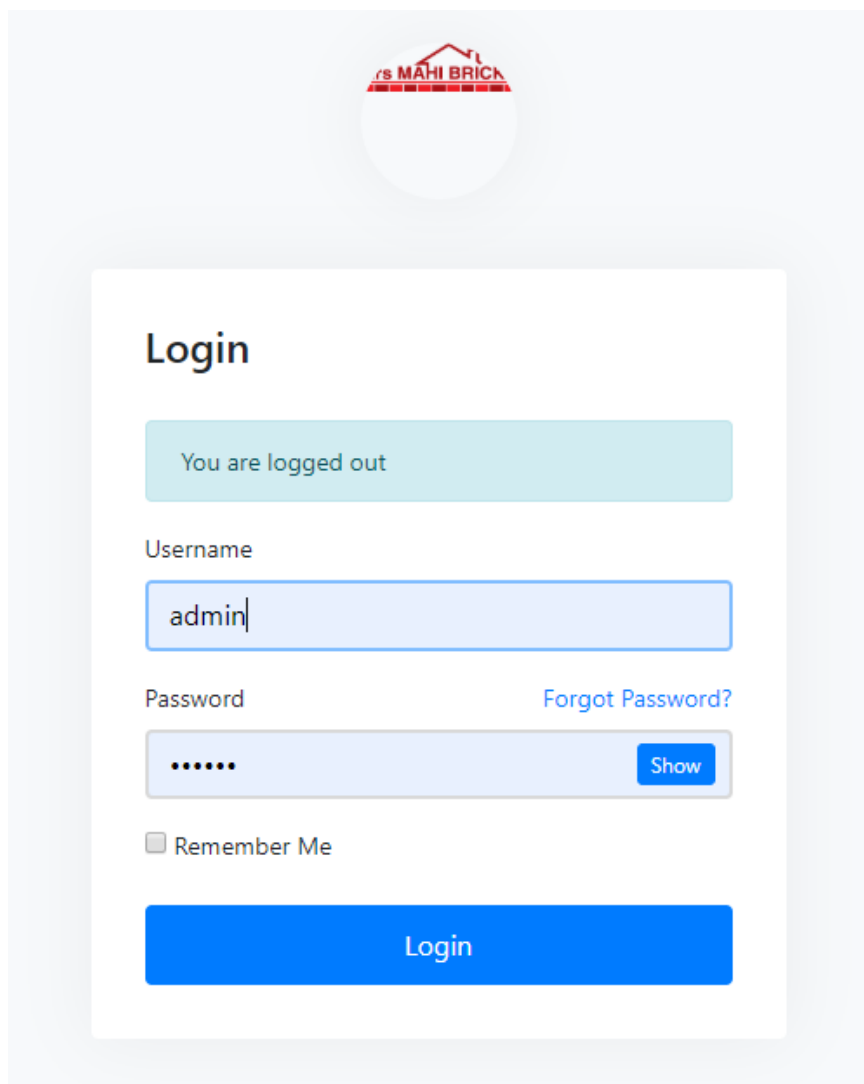
Figure 5.3: Database Table

5.2 Implementation of Front-End Design

The utilization of this application will rely upon how advantageous this application is. People attraction is mostly depending on how the front-end design is exist of a system and also its newly optimizes features.

Now we discuss about the front-end design implementation below. Here the starting page is log in page. Here user can input username and password then click logged in the system.

Here this page shown in figure 5.4.



The image shows a login page for 'MAHI BRICK'. At the top center, there is a logo featuring a red house icon above the text 'MAHI BRICK'. Below the logo is a large, light blue circular graphic. The main content is a white rectangular box with a light blue border. Inside this box, the word 'Login' is written in a bold, black font. Below the title, there is a light blue rectangular box containing the text 'You are logged out'. Underneath this, the label 'Username' is followed by a text input field containing the text 'admin'. Below the username field, the label 'Password' is followed by a password input field with six dots. To the right of the password field is a blue button labeled 'Show'. To the right of the password label is a blue link labeled 'Forgot Password?'. Below the password field, there is a checkbox labeled 'Remember Me'. At the bottom of the white box is a large blue button labeled 'Login'.

Figure 5.4: Starting page

When admin logged in the system then get the following page. Here user can see dashboard, configuration, process and report features. When clicked on configuration admin get the features which is seen in following figure 5.5.

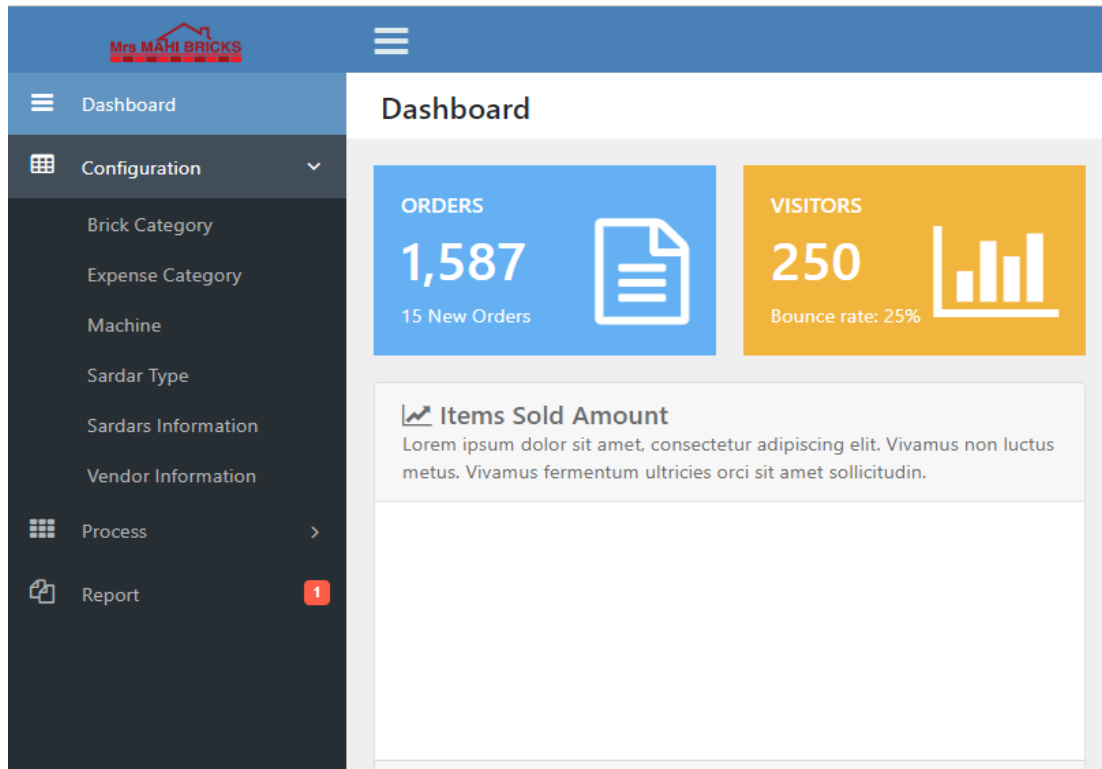


Figure 5.5: Home and configuration features view page

After that when admin want to see the process features then admin have to click the process and can see the following features shown in figure 5.6.

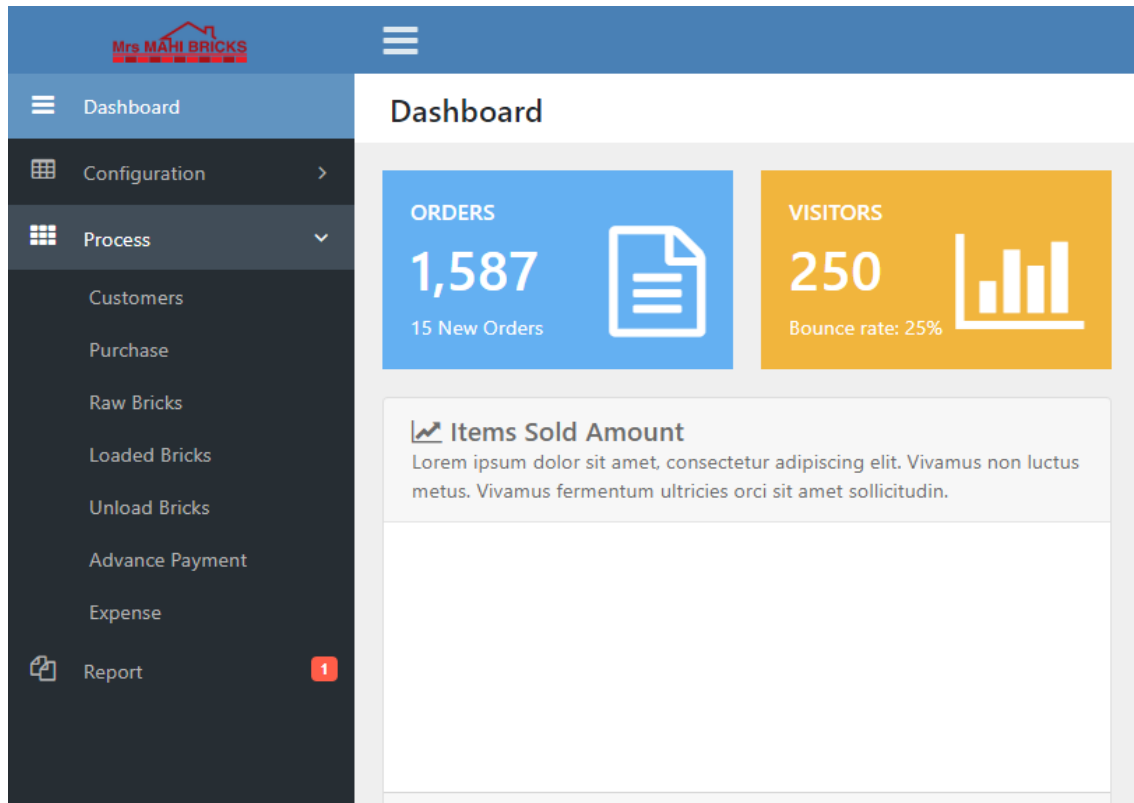


Figure 5.6: Process features view page

Now if the admin wants to see the expense report and sarder bill report then he can show from the report option shown in figure 5.7.

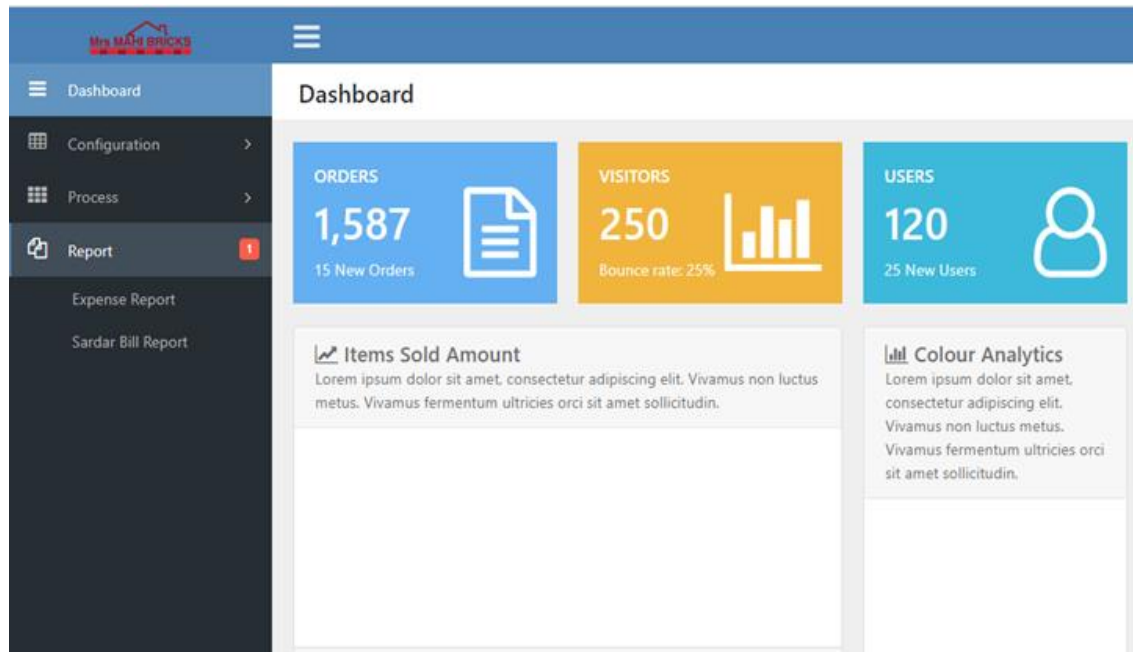


Figure 5.7: Report features view page

Suppose admin wants to add brick category in the system then he has to fill up the following requirements shown in figure 5.8.

The screenshot shows a web form titled "Add New Brick Category" with a breadcrumb "BRICK CATEGORY / CATEGORY ADD". At the top left is a blue button with a left arrow and the text "Back To List". Below this is a header "Category Add" with a hand icon. The form contains two main input areas: "Name*" with a text box containing the placeholder "Enter category name", and "Remarks" with a larger text area. At the bottom right are two buttons: a blue "Submit" button and a grey "Cancel" button.

Figure 5.8: category add features page

For all the option like machine, expense category, sarder type, sarder information, vendor information and also others feature admin can add all their according to their requirements.

5.3 Implementation of Interactions

The more an application is intelligent the more it is utilized. For making an application it needs some material plan with easy to use framework. For a helpful framework the plan ought to incorporate great symbol and innovative content text style with some attractive features.

Our application is most user friendly and simple features that's why user can understand it and use it easily.

5.4 Testing Implementation

Testing implementation is procedure of testing the execution of a framework, where analyzer or framework draftsman will see different cases and detail, is it implementable or it has impediments.

TABLE 5.1: TESTING IMPLEMENTATION

No	Tested case	Test input	Expected outcome	Actual outcome	Result
1	Sign in	Enter username and password	To enter the system	Entered the system	Passed
2	Add brick category	Enter category name and remarks	To add a new category	Category added	Passed
3	Add sarder type	Enter sarder name	To add a new sarder type	Sarder type added	Passed
4	Add vendor information	Enter vendor name, id, type, mobile number, address	To add new vendor information	Vendor information added	Passed
5	Add customer information	Enter customer name, nid number, address	To add new customer information	Customer information added	passed
6	Add raw bricks	Enter sarder name, quantity, date, select machine	To add new raw bricks	Raw bricks added	Passed
7	Show expense report	Enter expense Category and date	To show report	Report shown successfully	Passed
8	Show sarder bill report	Select sarder name and date	To show report	Report shown successfully	Passed

5.5 Test Results and Reports

We are tested our system many times to take a clear idea about any fault. Here we didn't found any unsuccessful result during testing. When we test the all results like configuration, process and reports then we successfully added all the option in our system.

We were very dedicated to make our application more user friendly and more attractive to the user and we think we are successfully doing that.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

Bricks factory management system is a system that make a brick factory manufacturing company maintenance easier and handle it more efficiently.

This system can make a tremendous change in the maintenance of brick industry. By using this system user can configuration many features like brick category, expense category, sarder type, machine information, sarder information, vendor information etc. And also add the customer's details, make a clear calculation about the raw bricks, loaded bricks, unload bricks, expense etc. User also see the expense report and bill report in this system.

6.2 Scope of Further Development

In future we will add more features in this system like

- Add Graphical representation of all the production reports, sells reports, waste reports in the home page.
- Adding more features like pre-order, download report copy etc.
- Adding Bangla language.

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