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MTB Internet Banking Web Application

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MTB Internet Banking Web Application

By

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Summer, 2022

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September 19, 2022

Dissertation submitted in partial fulfillment for the degree of Bachelor of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

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Attestation

This is to attest that the report titled "MTB Internet Banking Web Application " was completed by Nusrat Zahan (ID - 1730739) and submitted in partial fulfillment of the requirements for a Bachelor's Degree in Computer Science and Engineering from Independent University, Bangladesh (IUB). It has been completed under the guidance of Mohammad Motiur Raman (Internal Supervisor) and Khandakar Wasim Reza Tonmoy (External Supervisor). I also certify that all my work is original and has not been submitted earlier to this university or any other institution. All the sources of information used in this Project Report have been duly acknowledged in it.

NUSRAT ZAHAN — 19-09-22

Signature — Date

Nusrat Zahan

Name

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Acknowledgement

I would like to start by thanking Almighty Allah for His blessings and for providing me with the capacity to work hard and the chance to complete this report. I'd like to express my gratitude to Mohammad Motiur Raman, Lecturer, Department of Computer Science Engineering, Independent University of Bangladesh, for his constant assistance and advice, which enabled me to finish my project and report successfully. I would also want to thank everyone who provided information, ideas, and recommendations to assist me to prepare this report. My gratitude goes to the Department of Computer Science and Engineering at Independent University Bangladesh for assisting me in gaining the necessary information and skills during my Bachelor's degree in CSE. My time at Mutual Trust Bank Ltd. was nothing short of fantastic, and I greatly liked working and studying here. I'd also want to thank Khandakar Wasim Reza Tonmoy, Assistant Vice Presedent, for his excellent advice and supervision throughout the internship. Last but not the least, I would want to thank all of my colleagues in Mutual Trust Bank Ltd. for welcoming me into their team and providing continual assistance to complete my project and report. It would not have been possible without them.

Finally, I would like to thank Independent University Bangladesh and all of the respected faculty and staff members who were an integral part of my bachelor's degree in CSE. All of what I've done has been made possible exclusively by their direction and assistance, and I convey my appreciation to them.

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Letter of Transmittal

September 2022
Mohammad Motiur Raman
Lecturer Department of Computer Science and Engineering,
Independent University, Bangladesh (IUB)
Bashundhara R/A, Dhaka 1229, Bangladesh.

Subject: Submission of Internship Report.

Dear Sir,
With great respect and dignity, I would like to submit my Internship report to complete my Bachelor of Computer Science and Engineering degree. This report is based on my internship experience at Mutual Trust Bank Ltd, which began on January 17, 2022, and continues to this day. As a Frontend Developer intern, I was assigned to the development team. I completed my internship at Mutual Trust Bank Ltd.

I worked in Mutual Trust Bank Ltd under the direction of Khandakar Wasim Reza Tonmoy, Assistant vice president of the digital banking section. This report is based on my Mutual Trust Bank Ltd project. I was assigned to the project of making an Internet Banking website, where I worked as a full-stack developer. My time at Mutual Trust Bank Ltd was wonderful. The major goal of the internship is to study and gain information, improve abilities, and receive first corporate world experience, which I feel I have accomplished by working here.

I hope and wish that this report is comprehensive and meets your expectations. I have done my best to prevent flaws and hope that my report will be of an excellent standard. I would also want to thank for providing me with the chance to submit my report.

Sincerely,
Nusrat Zahan
ID 1730739

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Evaluation Committee

.....

Signature

Mohammad Motiur Rahman

Name

Mohammad Motiur Rahman

Supervisor

.....

Signature

Sabrina Alam

Name : [redacted]

SABRINA ALAM

Internal Examiner

.....

Signature

15.9.2022

Name : Khandaker Wasim Reza Tonmoy

External Examiner

.....

Signature

.....

Name : [redacted]

Convener

Dr. Mahady Hasan
Head, Department of CSE
School of Engineering & Computer Science
Independent University, Bangladesh

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Abstract

This report is based on my three-month work experience with Mutual Trust Bank Ltd. I worked as an intern as a web developer on the company's current client project. The project that I had to work on was a digital banking system. Bangladesh has been emerging as a digital nation, with many people utilizing the internet and the number continues to grow. This creates a big potential for businesses to market themselves online. Mutual Trust Bank has teamed with a couple of major firms to assist them in developing their online platform to market their business and raise the value of their brand. The website's goal is to provide a user-friendly banking environment to customers and potential allies, as well as an easy way to organize an account and promote the brand to the local community.

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Chapter 1

Introduction

1.1 Overview/Background of the Work

The company under which I have done my internship is "Mutual Trust Bank Ltd". It is a very old trusted bank in Bangladesh that started its journey back in 1999, with the aim to deliver personal, passionate, and tailored services. Over a decade's operation, they have marked a place of reliability and trustworthiness both nationally and internationally among their clients of different banking industries. they have been helping people with complete banking solutions consisting of services like Banking solution, Network security, Safe deposit and many others. Banking website is becoming more and more necessary for any kind of company in this era of digitalization and automation. it is highly unlikely that a banking company can ever be trustable in digital banking from that. It has to have a showcasing website and a really good-looking one. The project I am assigned to by my supervisor Khandakar Wasim Reza Tonmoy at MTB is a web based project for Internet Banking System. I was working under him and he helped me to build this project. [1]

1.2 Objectives

The aim of this project is to develop internet banking system which will work from the MTB website and services will be easier and more secure. There are some important issues in developing the banking system. First, the search time should be kept to a minimum. This depends on selecting the appropriate development environment and using good development techniques. Second, the website should provide the services that both company and customer want. Third, the website should have a friendly user interface. This project is developed based on the HTML, CSS,Bootsrap PHP, and MYSQL servers.

I want to show a live build, error-free website that satisfies the user's requirement and

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be easy to understand by the user and operator. also, I want the operator can edit, add, and update of records to improve the website.[2]

1.3 Scopes

1. Home Page- Users can find internet banking service provided by MTB and can click on it for login if users have already existing MTB account .

2. Log in Page- Users can log in to their digital account by providing mail and password and a OTP will be sent to their mail. By submitting the correct OTP, users can log in to their account.

3. User Page- Users can choose any service by clicking on user dashboard. They can see account details, account services, fund services, card services, loan services, seetings, log out etc.

4. Admin Page- Admin can log in by their email and password also. Admin can do many tasks like can create, edit or delete accounts of users, register user account etc.

5. News and events Page- Users can find any upcoming news and events section.

6. Contact Page- Users can find contact information of the bank and also some different emergency contacts.

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Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

The courses that I found connected to my Projects are discribed below:

CSE 203, Data structure: This is the most fundamental course that helped me a systematic way to organize data in order to use it efficiently and the ideas of several data structures and their applications such as Stack, Queue, Linked List, Array, and so on.

CSE 303, Database Management: This was a core subject that taught me how to plan and design a project. This course gave me the fundamentals of a database and how it works, such as rich picture, six-element analysis, business process model diagram, entity relationship diagram, normalization, and structured Query Language. All of these skills came in handy as I developed and planned the project. Knowledge of MySQL, PHP, and the use of a local server was also important in making my project dynamic.

CSE 307, System Analysis and Design: This course provided a basic overview of the Software Development Life Cycle and gives an overview of the Used Case Diagram, Class Diagram, Activity Diagram, Sequence Diagram, Business Requirement Document (BRD), Software Requirement Specification (SRS), System Design Documents (SDD) and many more.

CSE 309, Web Application and Internet: This is the course where the development of web applications was taught. It covered very important technologies that are highly in demand in the industry, such as HTML, CSS, Bootstrap, JavaScript, JQuery, PHP, and MySQL.

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2.2 Related works

IFIC Bank Bangladesh: IFIC Bank Bangladesh is one of Bangladesh's leading banking companies. IFIC Digital Banking is a User-friendly internet banking service that enables interact with bank 24/7 using only user's phone or computer. We can avail banking services through IFIC Digital Banking without being physically present at the bank.[3]

Dutch Bangla Bank: Dutch Bangla Bank is probably the most popular and safe banking system in Bangladesh and they are pretty much taking the leadership of digital banking to the next level. Dutch Bangla Bank started its journey in the banking sector of Bangladesh from 1996, and now it is one of the best banks in Bangladesh.[4]

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Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

A work breakdown structure (WBS) is a tool that can be used for projects, programs, and even initiatives to understand the work. The WBS "breaks down" the structure of a project into manageable deliverables. WBS is a hierarchical structure that demonstrates the breakdown of a project into smaller segments. For our projects, we produce a WBS so that our work is coordinated. WBS covers a visual of all the scopes, risks, points of communication, responsibilities costs, and guarantees, that do not skip essential deliverables. For brainstorming and collaboration, it is the ideal tool for the team. In our WBS, we have used the top-down approach [5].

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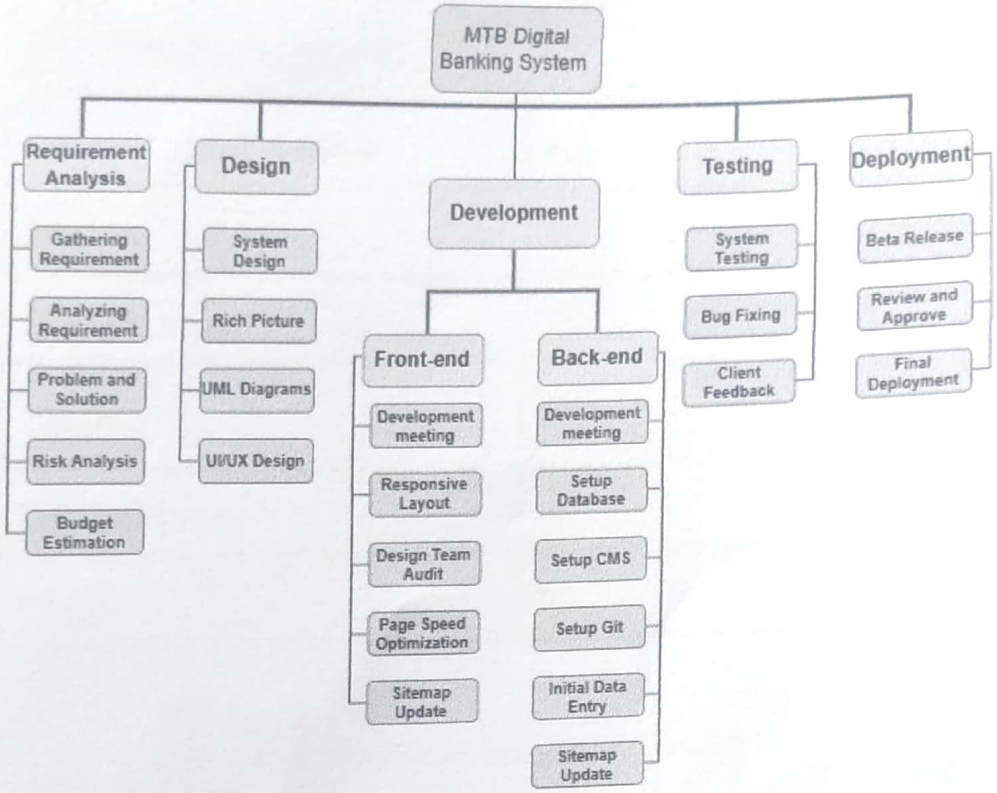


Figure 3.1: Work Breakdown Structure

3.2 Process/Activity wise Time Distribution

Typically, the project is expected to take 60 working days to complete. The entire task is separated into five core functions, all of which account for 100 percent of the overall effort. Some of which are critical and some are noncritical.

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Activity	Days
Requirement Analysis	10
Design	10
Development	25
Testing	10
Deployment	5
Total	60

Figure 3.2: Process/Activity wise time distribution

In this table, we can see that Requirement Analysis will take about 10 working days to finish.It will take 10 working days to finish the design of the project. For the core part of the project, which is deployment, it will take around 25 working days to complete. For the testing and bug fixing of the project, it might take around 10 working days. For the deployment, we kept 5 days in hand.
In total, we can see that we have 60 working days to complete the project. It will take approximately 3 months to complete the project.

3.3 Gantt Chart

A Gantt chart is a chart that shows all of the different sub-tasks of a project and how they relate to each other over time. A Gantt chart shows all of the tasks that need to be done, the amount of time each task is expected to take, the time frames in which individual tasks are to be completed, and the relationship between various tasks. This way, everything gets done on schedule, and you never waste time waiting for a task to be completed that should have been done already. For these projects, a Gantt chart was used in the planning phase of the application. Gantt charts are commonly used for tracking project schedules, and they're especially useful in project management.

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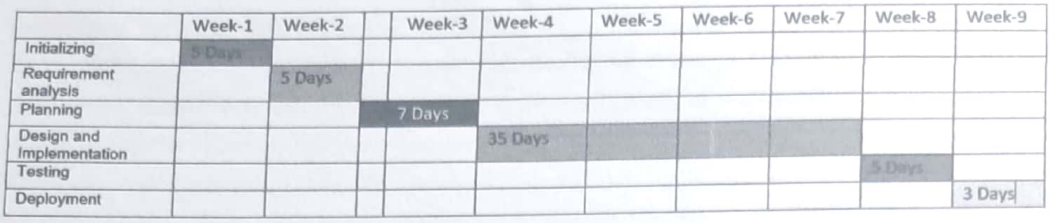


Figure 3.3: Gantt Chart

3.4 Process/Activity wise Resource Allocation

As I stated before, the entire task is separated into five basic functions, each of which accounts for 100 percent of the overall effort from the designer, developer, and other stakeholders. The project is expected to take around 1 year working day to completw. But, as my internship is about three months, 60 days working day in three months are given below. The project is being worked on by a total of eight people.
We have a table to demonstrate how much work should be done or expected from the team in a particular amount of time.

Task	Days	Work Percentage
Requirement Analysis	10	10%
Design	10	25%
Development	25	50%
Testing	10	10%
Deployment	5	5%
Total	60	100%

Figure 3.4: Activity wise work percentage allocation

3.5 Estimated Costing

Just like any other development-based application a web app's cost is decided by several factors. There are some common factors like the modules, website design or any

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additional features desired by the customer. Also, the size of the project is unique every time. For better understanding, I have included a table below that shows our estimated pricing for design services such as theme, logo, and icons, as well as the cost of a custom home page slider, social network connection, SSL Certificate, SEO, and other plugins. The base cost, including domain and hosting, was estimated to be BDT 130,000 BDT for the project. But, after customer feedback during the development phase or after the launch, clients may require additional features which will add to the total cost.

Work Distribution	Cost (BDT)
UI/UX Development	15,000/-
Web Modules & Functionality Development	90,000/-
Web Hosting Maintenance Service	25,000/-
Total	130,000/-

Figure 3.5: Estimated Costing

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Chapter 4

Methodology

The software development process is a method of breaking down software development work into phases to improve the design of the system, improve the project management. This is also known as Software Development Life Cycle (SDLC). The 7 phases of SDLC are Planning, Analysis, Design, Development, Testing, Implementation, and Maintenance.

There are many SDLC methodologies, they are:

- Waterfall
- Lean
- Agile
- Iterative
- DevOps
- Spiral
- Prototyping

The SDLC methodology that we will be using in our Project is agile. The agile methodology is a method of project management that divides a project into numerous phases. As the project is broken down into smaller phases, the work can be done faster and more efficiently. All the features are not needed to be done at once; we can do them part by part. When we complete a task, we can get feedback almost daily and quickly act on that feedback immediately. We can have better control of the project in Agile.

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Chapter 5

Body of the Project

5.1 Work Description

Mutual Trust Bank Ltd. inaugurated its journey by holding the hand of Digital Baking, the leading and prominent name in the construction engineering industry. In 2007, AWR Developments Limited announced its genesis in the Real Estate sector within two years of its own establishment which ultimately gave birth to AWR Real Estate Limited. Alongside, AWR Real Estate is one of the fastest-growing arms of IPE Group which is in central London with multinational operations. I had the privilege to be a part of this world-class website development team. The core functionality of the website was to showcase the numerous projects. These project brochures can also be downloaded from the website which can be uploaded from the CMS as most of the section of the website is made dynamic and can easily be created, updated, or deleted. Anyone visiting the website can contact the company through the contact form for any customer services.

My role in this project was primarily in the front-end section and also in the back-end but my team members helped me as well. This may sound less but the first few weeks passed for me to align my code structure with the developers as they followed an industry-standard design. And after some time of doing mock-ups of previous project pages, I started contributing to the main project. The front end is built with HTML, CSS, and Bootstrap. We used PHP for the back end and MySQL for the database.

5.2 System Analysis

5.2.1 Six Element Analysis

The six-element analysis is a method where we can know about the stakeholders, non computing hardware used, computing hardware used, the software used, the database, and the network needed for a particular process in the system.

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Process	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Network and Communication
Manage Forms	Admin	N/A	Computer	Web Browser	MySQL	N/A
Submit Forms	User	N/A	Computer	Web Browser	MySQL	N/A
Update/ Delete Item	Admin	N/A	Computer	Web Browser	MySQL	N/A
View Info	User/ Admin	N/A	Computer	Web Browser	MySQL	N/A
Login	User	N/A	Computer	Web Browser	MySQL	N/A
Sign-Up	User	N/A	Computer	Web Browser	MySQL	M/A

Figure 5.1: Six Element

5.2.2 Feasibility Analysis

A feasibility analysis is a process of assessing and analyzing a project or system that has been suggested. The goal of the study is to see if the idea is technically and financially feasible. A feasibility study also analyzes whether or not a project is financially viable. The basic purpose of a feasibility study is to achieve the scope, not to solve the problem. Feasibility Analysis is categorized as Technical Feasibility, Operational Feasibility, Economic Feasibility, and Schedule Feasibility.

1. **Technical Feasibility:** Mutual Trust Bank is a very well-established organization that has worked with some of the industry's biggest names. They have the required talents to bring the project's vision to reality. This project is technically possible since all of the necessary hardware, software, and other technical requirements are on hand.

2. **Economic Feasibility:** This analysis is carried out to determine the cost and benefit of the project. A detailed cost proposal for website development was generated, including all cost breakdowns. More digital presence means more revenue.

3. **Operational Feasibility:** Because of last year's pandemic and the current economic situation, the website is very useful, as more and more users are getting digitally active. Because of this website, bank user can access for transaction and

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monitoring own personal information and balance easily and quickly. Also, the project plan satisfies all of the project completion standards.

4. Schedule Feasibility: This is the most critical assessment for project success. The project will complete on time as the given milestones are being accomplished on schedule.

5.2.3 Problem Solution Analysis

Throughout the development phase, I have faced a few problems. When I started my internship, the project was in the requirement analysis phase. The development was yet to start almost a month after. This project being my first real client-based project I was overwhelmed with the accountability and deadline pressure. I had basic knowledge about website development from both self-taught and university courses but as I have mentioned before I did not have the industry standards for the code structure. So, I had to relearn my way to code HTML, CSS, and Bootstrap alongside learning JS and jQuery. I had very little experience with jQuery and JavaScript. And now awards every website is made to be mobile responsive 21 which was another challenge. It took me some time to get with the flow but I eventually contributed to sections that were mobile responsive as well as optimized for less server request initially and increasing while the user loads the page. This was not easy because even after getting help from seniors they could not spend hours teaching me new methods. So, to keep afloat and aligned with the team I had to do extensive research with the help of the vast online resources.

5.3 System Design

5.3.1 Rich Picture

Rich pictures are graphical depictions of a system. They can assist in the organization of complicated situations and the identification of underlying issues by including all necessary system parts and stakeholders. Any approach may be used to build a rich image, and it can be applied in any scenario, regardless of its complexity. The following figure shows the rich picture of the project.

5.3.2 UML Diagrams

A UML diagram is a diagram based on the UML (Unified Modeling Language) that is used to visually represent a system, as well as its primary players, roles, actions, objects, or classes, in order to better understand, edit, maintain, or document system

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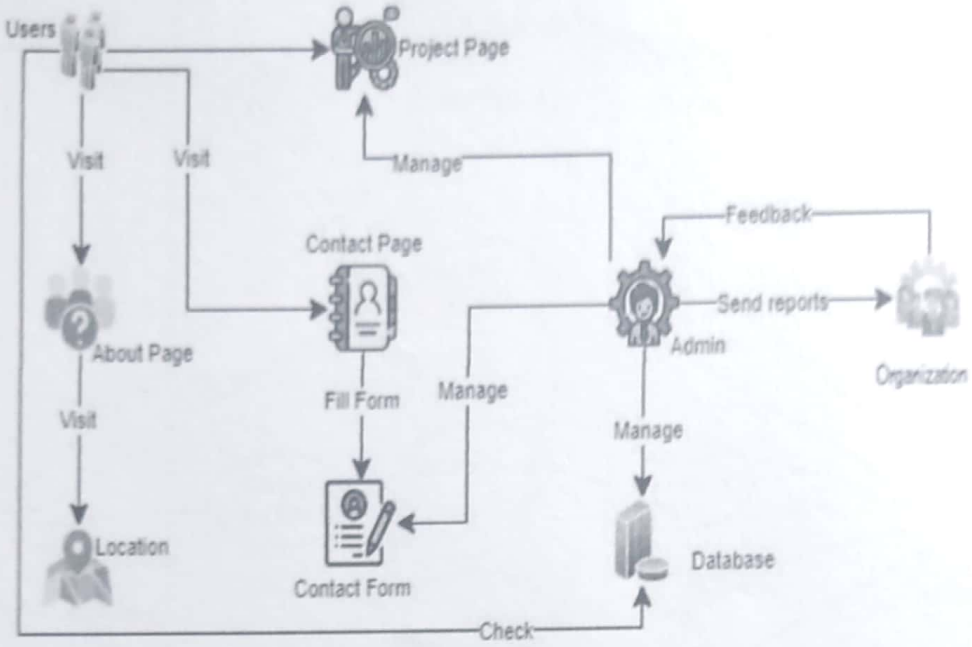


Figure 5.2: Rich Picture

information. For this project I will draw 3 UML diagrams, they are Use Case Diagram, Activity Diagram and Entity Relationship Diagram.

1. Use Case Diagram: Use-case diagrams are a type of UML diagram that helps to represent a system's behavior and capture its needs. The high-level functions and scope of a system are described using use-case diagrams. The interactions between the system and its actors are also depicted in these diagrams. Use-case diagrams show what the system performs and how the actors interact with it. A Use-case diagram is the starting point for UML modeling. The figure below shows the use case of a user and an admin.

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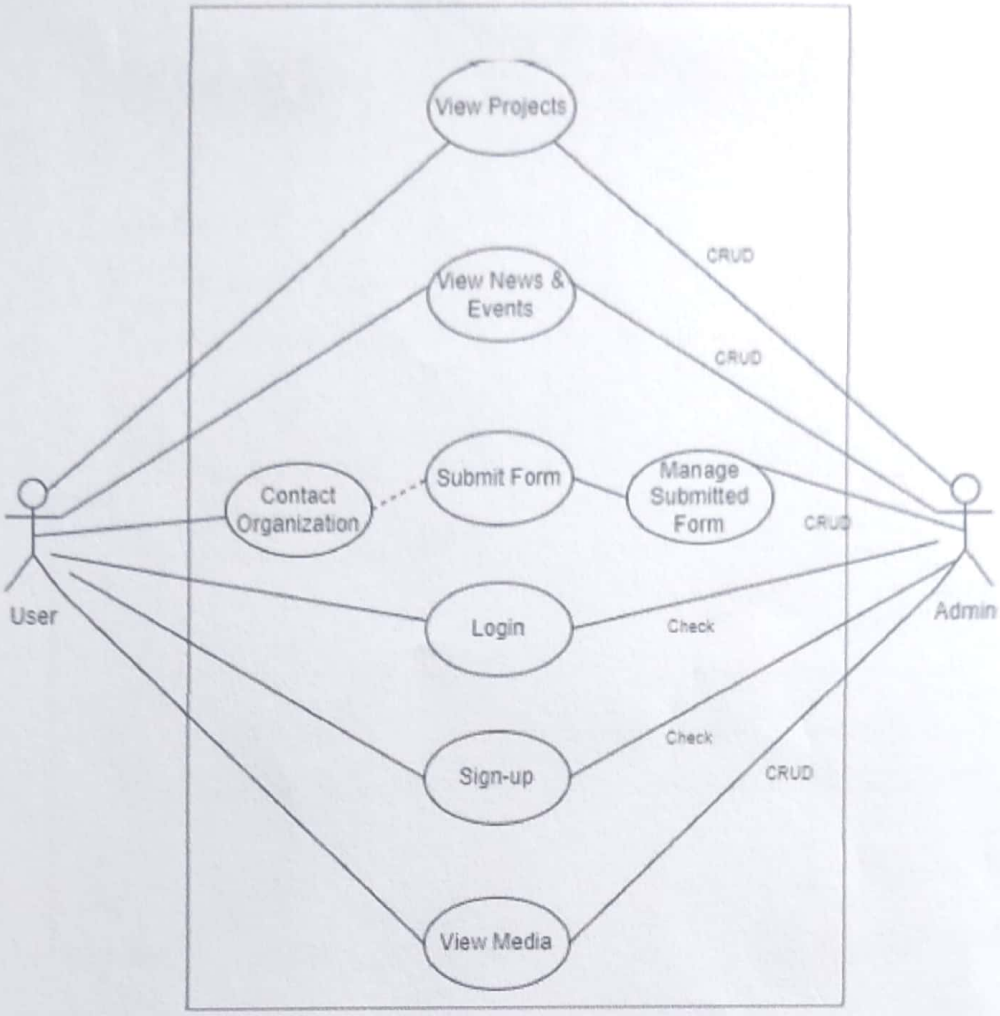


Figure 5.3: Use Case Diagram

2. Activity Diagram: Another essential diagram in UML for describing the dynamic characteristics of the system is the activity diagram. An activity diagram is essentially a flowchart that illustrates the flow of one action to the next. The action may be thought of as a system operation. The control flow is drawn from one operation to the next. This flow might be sequential, branching, or concurrent. Activity diagrams deal with all types of flow control by embedding various parts such as fork, join, and so on. I will be demonstrating 3 activity diagrams.

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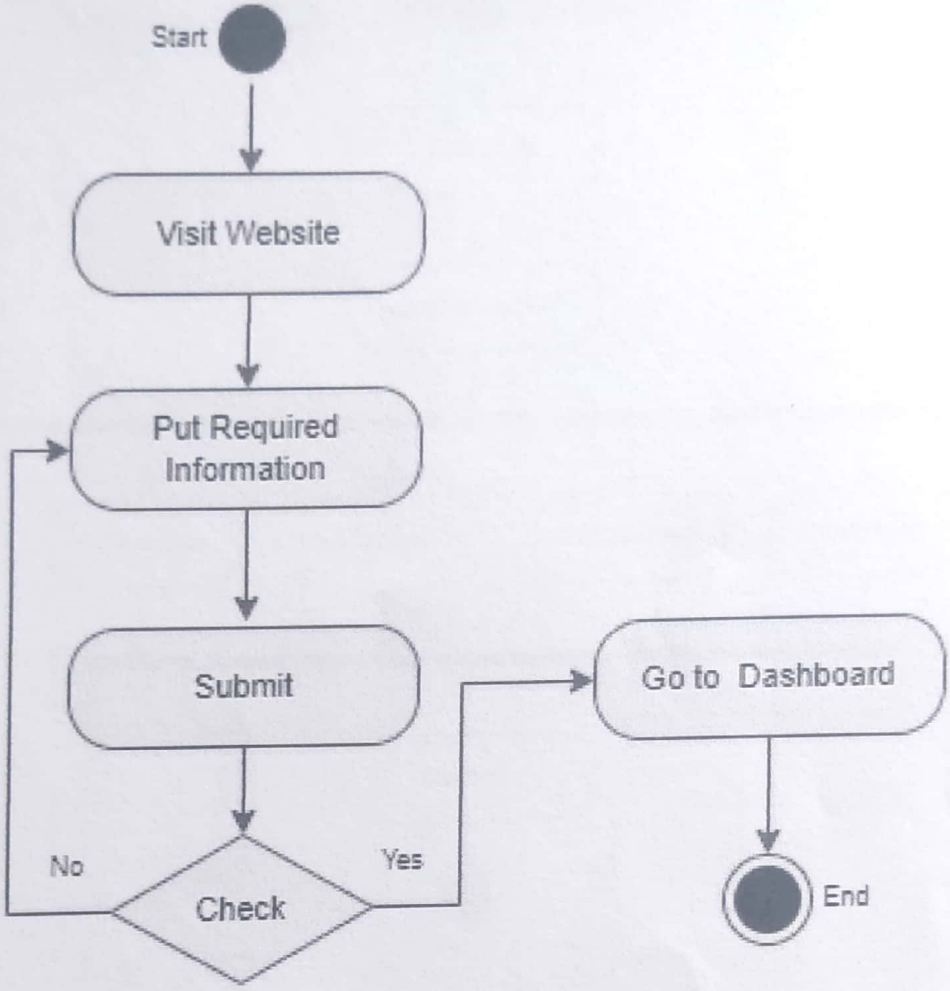


Figure 5.4: Activity Diagram for Sign-in

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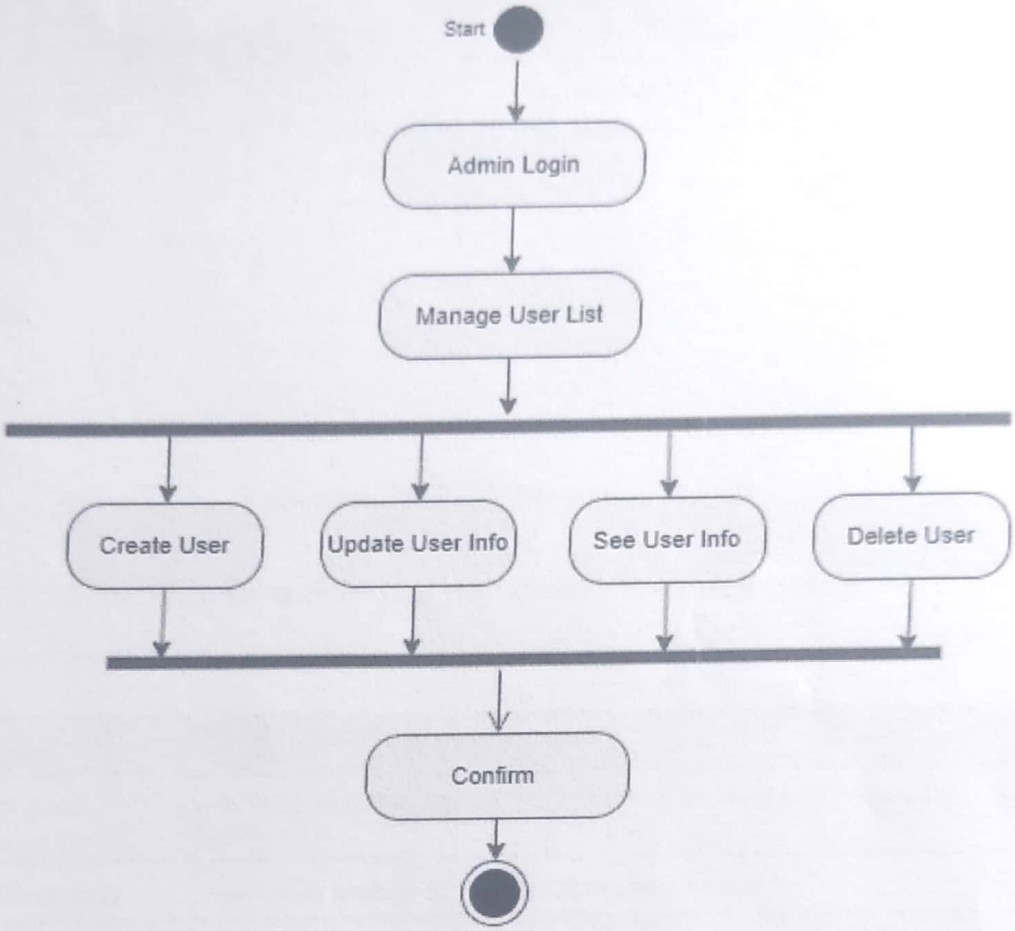


Figure 5.5: Activity Diagram for Admin CRUD Operation

3. Entity Relationship Diagram: An ER diagram depicts the connection between entity sets. An entity set is a collection of comparable entities, each of which can have characteristics. In terms of DBMS, an entity is a field or an attribute of a field in a database. An ER diagram depicts the whole logical structure of a database by displaying the link between tables and their attributes. Let us look at the project's simple ERD.

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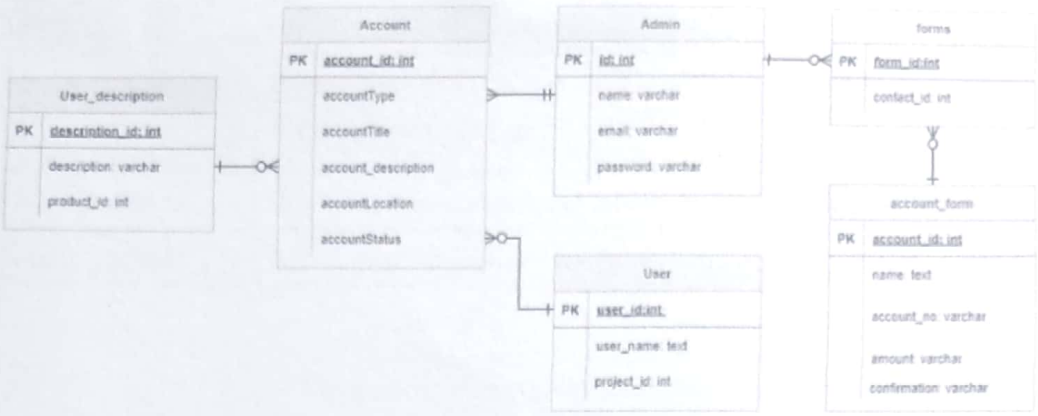


Figure 5.6: Entity Relationship Diagram

5.3.3 Functional and Non-Functional Requirements

1. Functional Requirements

Function	Login	
Input: N/A	Process: Visit the banking link	Output: User is able to log into the system
Pre-Conditions	User must provide all the necessary information	
Post Conditions	User logs in successfully	

Function	Sign-up	
Input: N/A	Process: Visit the banking link	Output: user able to create a banking account successfully.
Pre-Conditions	User must provide all the necessary information	
Post Conditions	User creates an account successfully	

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Function	Manage user account info	
Input: N/A	Process: Visit the Account from to engage	Output: Information are stored and saved about user
Pre-Conditions	User must have computer or mobile and internet access.	
Post Conditions	User successfully submits the form.	

Figure 5.7: Functional Requirements

2. Nonfunctional Requirements: Nonfunctional requirements are implicit requirements or expectations that describe the features, characteristics, and the attributes of the system. The expected features then might be too subtle for the functional requirements to mention. Non functionals are required for the system's primary operation.

i. Performance: The performance of the final product is expected to be top-notch. Even after meeting all the functional requirements, the system needs to load fast. There should be a certainly acceptable delay after clicking any interactive section but that should not exceed too much.

ii. Efficiency: The system should be efficient in using the shortest path to complete a task. If there is any duplicate path leading to the same outcome which may result even milliseconds, needs to be eliminated.

iii. Availability: The website should be up and available online 24/7 without having any trouble like broken pages or server errors.

iv. Ease of Use: The website should be easy to maneuver. The design and the functionality should be easy for users of all ages. The posts or sections should not be too crowded and be eyesore.

v. Backup: Websites are prone to hacking or breaking down due to any server issue. Also while page optimizing some files may end up faulty. There should be regular backups for both database and codebase for such events.

vi.Information: Throughout the website, there should be all relevant information related to the website and its product. Customers must not get confused while browsing the website about what the purpose of the website is.

vii. Maintainability: Necessary sections of the website should be made dynamic for user ease. After handling the product users do not expect to code their way through making a post. Users should be able to create, update and delete data to the live site.

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viii. Security: Security will always be a concern for websites. The backend of the site should follow OWASP 10 security standards.

5.4 Product Features

5.4.1 Input

Process	Fields Type
Login	Name: string Username: string Email: string Password: string Contract Number: integer
Sign-up	Name: string Username: string Email: string Password: string Contract Number: integer

Figure 5.8: Input of Login and Sign-up Fields

5.4.2 Output

Process	Fields Type
Database	On success- Show all the User list. On failure- show error or empty database
Alert	On success- Show alert message. On failure- show error.

Figure 5.9: Output

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5.4.3 Architecture

A web application architecture is a blueprint of an application's components, databases, middleware systems, user interfaces, and servers interacting at the same time. It is also the layout that logically specifies the link between the server and the client-side for a better online experience. A well-thought-out web app architecture can accommodate diverse loads and respond to new service requirements with ease, resulting in a quick user experience that increases app performance even more.

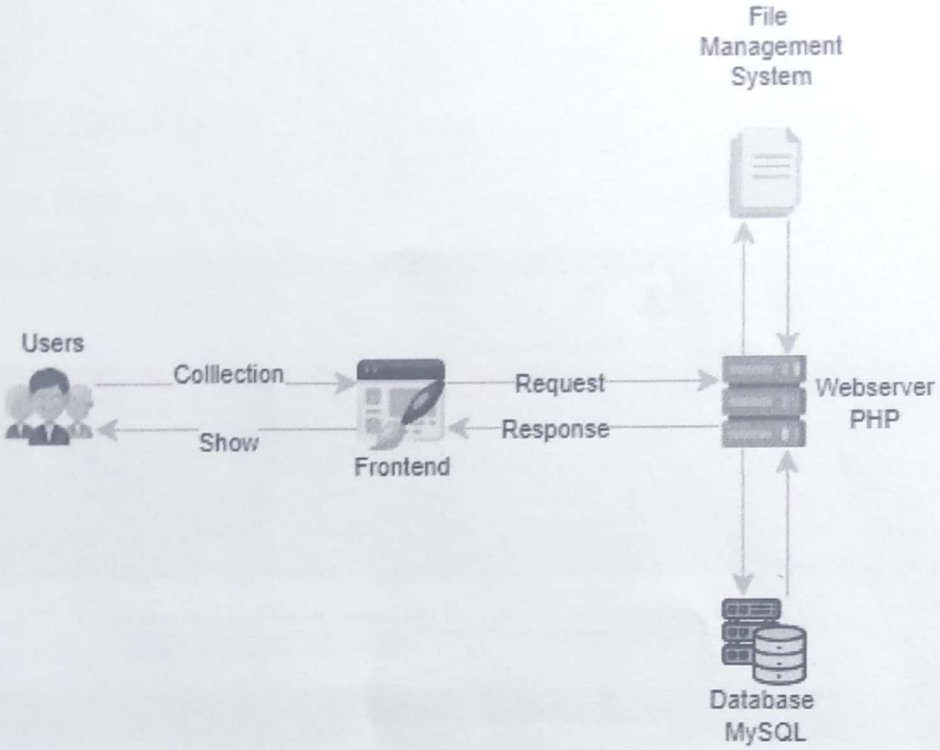


Figure 5.10: System Architecture

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Chapter 6

Results & Analysis

6.1 Results

Home Page:

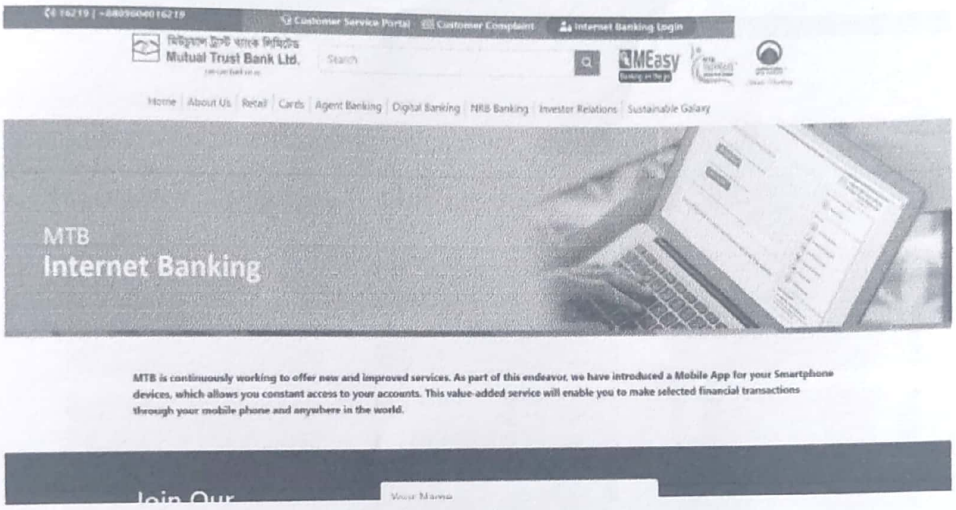


Figure 6.1: Home Page

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Login Page:



Figure 6.2: Login Page

Admin Dashboard

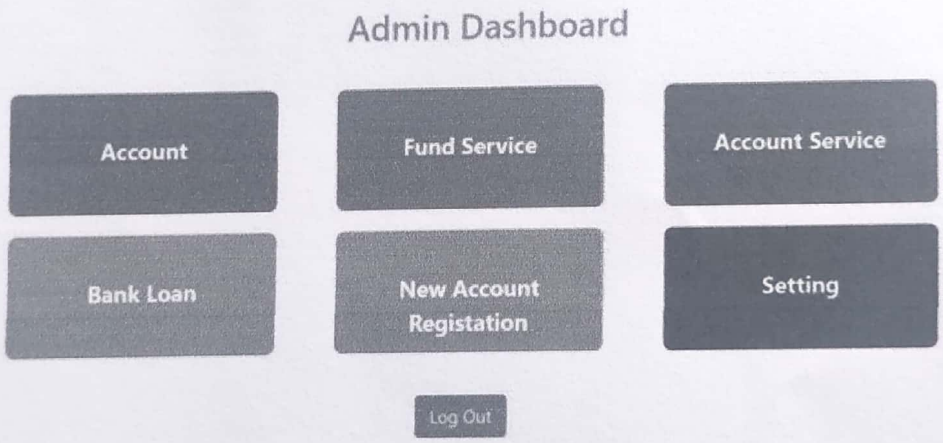


Figure 6.3: Admin Dashboard

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Admin account

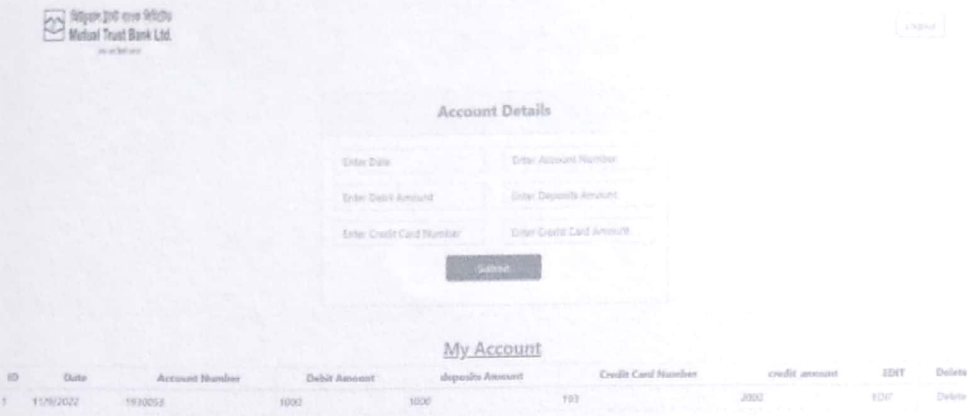


Figure 6.4: Admin Account

Admin Registration:

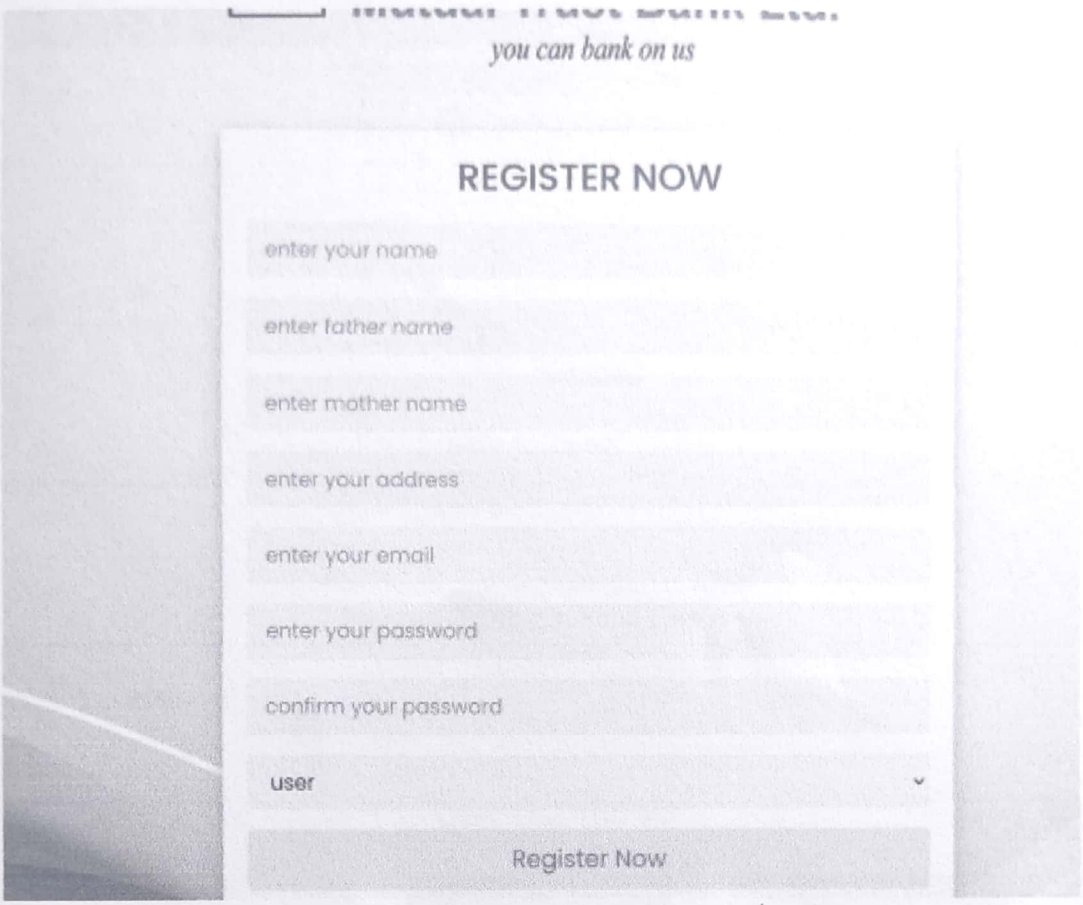


Figure 6.5: Admin Registration:

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Admin Fund Service:

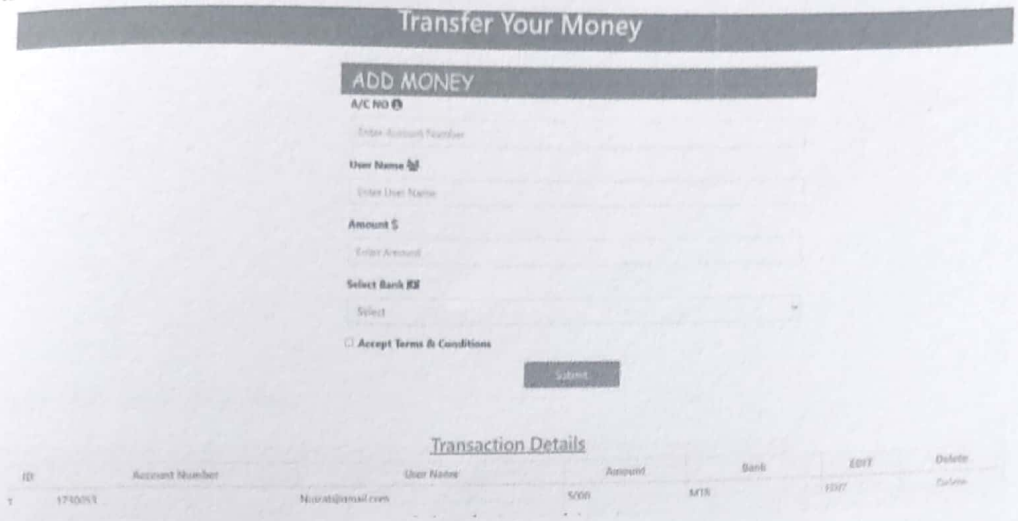


Figure 6.6: Admin Fund Service:

User Dashboard:

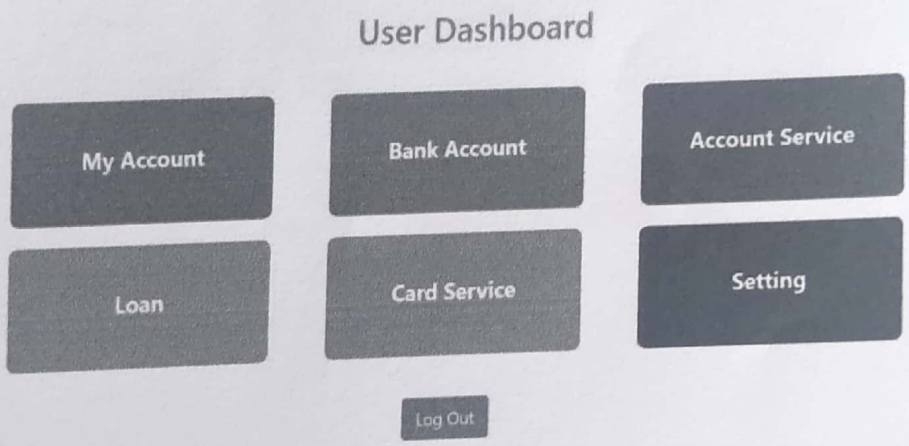


Figure 6.7: User Dashboard:

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User My Account

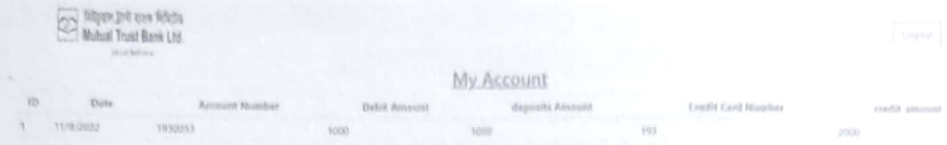


Figure 6.8: User My Account

User Account Service:

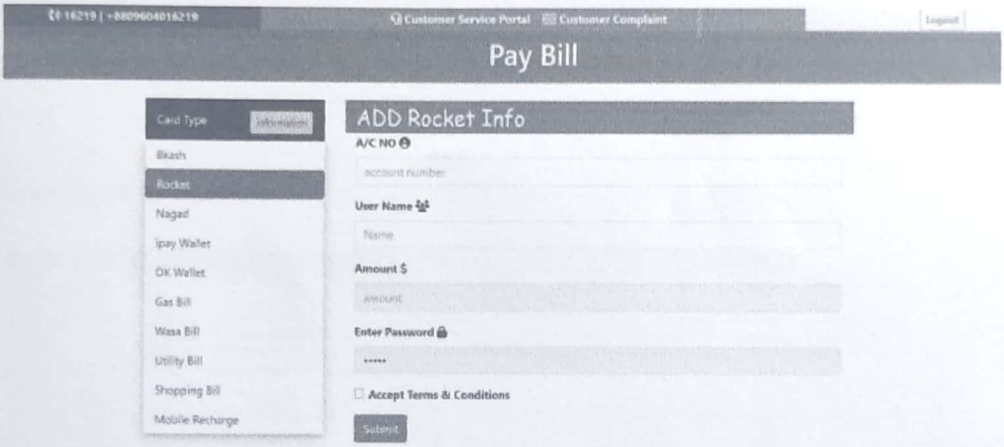


Figure 6.9: User Account Service

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User Fund Service:

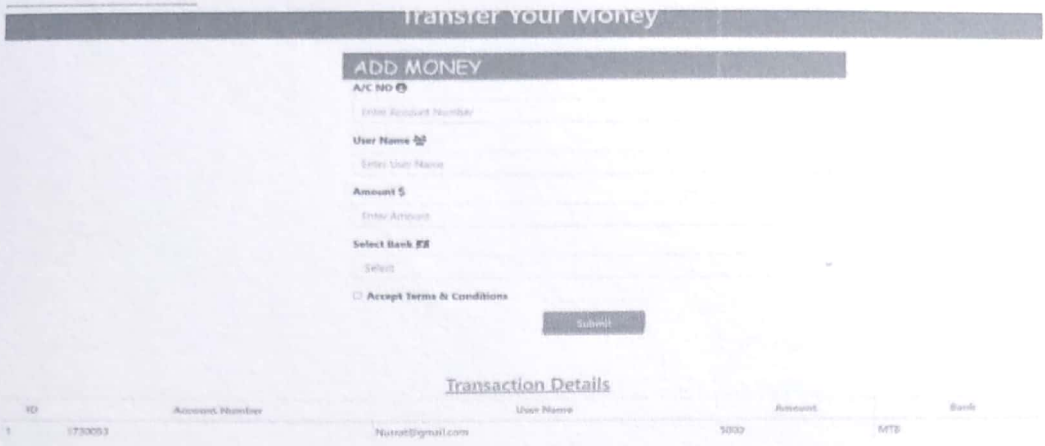


Figure 6.10: User Fund Service

User Loan Page

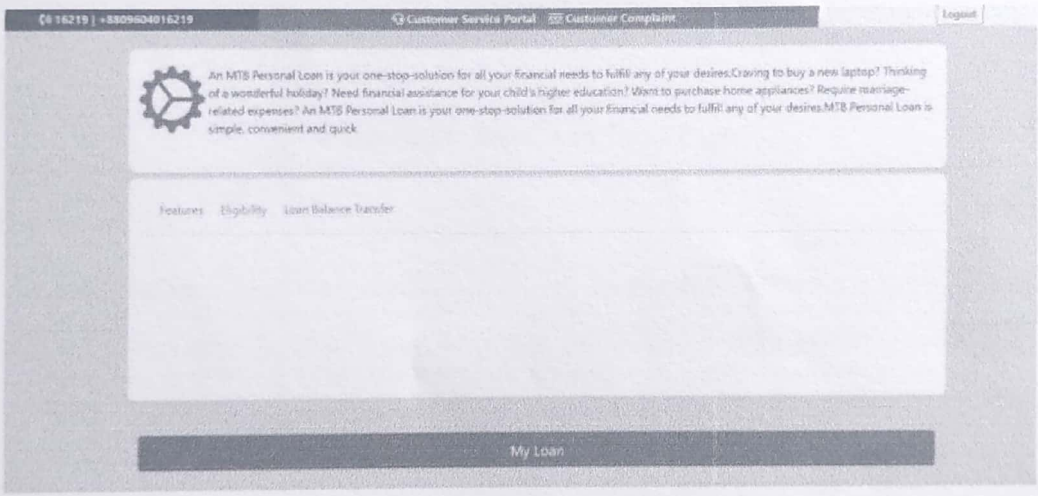


Figure 6.11: User Loan Page

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User Loan Print Page



Figure 6.12: User Loan Print Page

Database:

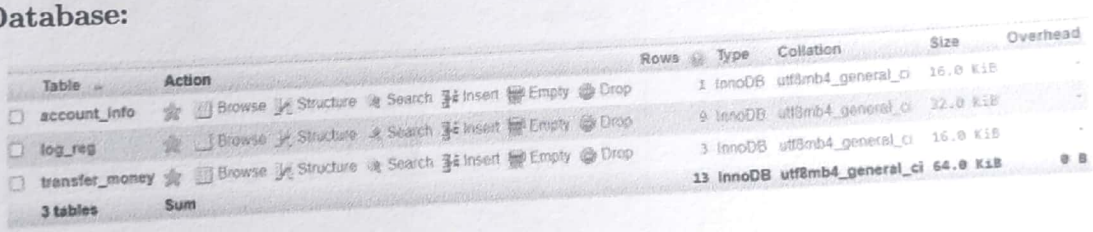


Figure 6.13: Database

Account Info Database:

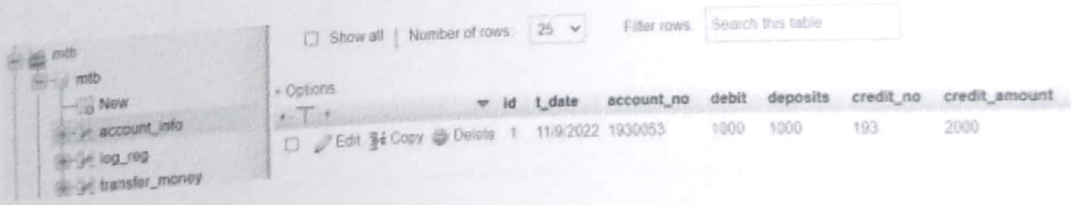


Figure 6.14: Account Info Database

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Money Transfer DB:

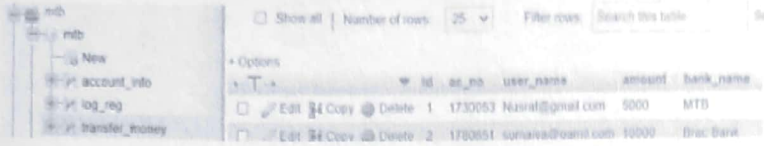


Figure 6.15: Money Transfer DB

6.2 Test Case

Software Testing is the process of establishing confidence that a program or system does what it is supposed to. Software Testing is one of the very important software development phases. It is the major quality checking point for software on its production line.

Sl	Case	Action	Condition	Expected Result	Result obtained	Status	Comments
1	Login	User Login	1. Connected to the server through the internet.	1. Login into the database and view the dashboard interface.	Login successful	Pass	N/A
			2. Valid login credentials.	2. Wrong credentials give an error message "Login failed"			
2	Add User	User can add account informatio n	Must be login to the admin panel	A new user info will be added	New user are added successfully in the DB and visible on the website.	Pass	N/A

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4	Update user	user can update the project details	Must be login to the admin panel	1. Go to the account manage option. 2. Put the information to be updated 3. Press on update icon 4. Edits required fields to update. 5. Saves change by pressing the save button.	User updated from the system and website.	User successfully updated.	Pass	N/A
5	Logout	User can successfully log out	Must be login to the admin panel	Click logout from the user menu in the profile icon.	Log out from the dashboard	Successfully logged out.	Pass	N/A
7	Forms	Fill up the accounts form and submit	Connected to the internet	1. Visit the website 2. Fill up the form and click submit button	A successful message is shown	A success message is received by the admin.	Pass	N/A

Figure 6.16: Test case

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Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

Project sustainability is currently a widely used method to project management. From project identification to feasibility studies, design, funding, implementation, and evaluation, specific criteria and standards must be established for projects to be sustained. The acceptability, viability, and flexibility of a project will be determined through a sustainability analysis.

The website's long-term sustainability will also be ensured through frequent maintenance of the website and its server which will be done by the maintenance team collaborating with developers. The website's HTML, CSS, Bootsrap, and backend code (Php) are all nicely optimized. It is ensured that the website works properly and is easily accessible by users regardless of the device's specification by minimizing repeated codes, minifying all the CSS codes that are utilized, and keeping suitable coding standards. In terms of style and layout, the website is meant to be user-friendly, with a focus on the User Experience. Visitors with less computer experience will be able to access and navigate the website with ease. The media files, such as photographs, videos, symbols, and logos, have all been optimized to guarantee that the pages load quickly, allowing individuals with low-end devices and sluggish connections to visit the website.

7.2 Social and Environmental Effects and Analysis

The Website of Mutual trust Bank Ltd. displays all of its ongoing, upcoming, tasks, and customers may quickly use the website to fetch information about their account. This saves users time by allowing them to see information online rather than visiting

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many the bank physically to make a decision. People may do this from the comfort of their own homes rather than sitting in city traffic for hours, which eventually saves fuel, meaning fewer cars on the road, which helps lessen pollution created by automobiles.

Just like all the other websites that are developed at MTB, this website is designed and developed to maximize efficiency while utilizing fewer resources. We attempted to optimize our code and media material to the greatest extent feasible. In our office, we are constantly mindful of avoiding wasting electrical energy. This allows us to be more energy-efficient while also reducing our use of paper, which has a beneficial impact on the environment.

7.3 Addressing Ethics and Ethical Issues

When a system is being developed, one of the most important issues is the security of the system. Through the system, a lot of data will be continuously exchanged and as a developer, we have to make sure that the data are well protected, and the users can use the system without the fear of being hacked or getting their data leaked. All the security-related work is done by the senior developer.

The company has taken many security measures for this system. All the necessary documents and source codes are kept private by the company. Only the team leader has the ability to access those data with valid credentials, this ensures data security.

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Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

It was tough for me to do five days' office from 10.00 am to 6.00 pm while continuing other courses. I always tried to give my 100 percent effort during my internship periods. Adapting to the team, as this was my first time working in a work environment where everyone contributed to as a collaboration, it was hard to get used to everyone. Throughout the Internship, I have faced new challenges and I also learned how to overcome those. Also, getting an internship in this kind of big organization was very difficult.

I never worked in a professional place before. I was never a 10 am- 6 pm routine person, so the new lifestyle was a bit problematic for me. Sometimes I cannot cope-up with immense work as I wasn't used to this kind of pressure. It was also difficult to master so many new technologies in such a short period of time and get with the flow of the other developers and working as a team. Every project here has very tight scheduling and each section has deadlines. Meeting those deadlines as well as learning the new features was very challenging. Also, it was difficult to study and apply the knowledge in such a short period of time.

8.2 Solution of those Problems

During my internship period I have gained new knowledge, skills, and met so many new people. I had to google and find out a few of the parts in the report that I was not familiar with. My supervisor helped me a lot when I faced any difficulties in the codes. At first, he has given me a total overview of the project. The internship was also good to find out my strengths and weaknesses. I learned about Customer Requirement Analysis, User Experience Design, Structures of data, etc.

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Chapter 9

Future Work & Conclusion

9.1 Future Works

Mutual Trusts Bank intends to add many additional features to the website as the project proceeds in order to make it more useful to users and appear more attractive. From my point of view, different features for digital banking can be introduced and statistics pages where customers can get accurate and insightful data about the organization.

9.2 Conclusion

It was a wonderful experience working with Mutual Trust Bank Ltd. As a web developer intern. During the internship period, I collaborated with my mentors and seniors to solve obstacles. I've also learned how to work within tight deadlines and under pressure. The project assigned to me helped me learn many things about web development, such as HTML, CSS, Bootstrap, PHP,Mysql and many other tools. The internship program enabled me to handle clients as well, asking for their requirements and understanding their issues. This internship has given me the opportunity to learn more about the development environment and market. I would like to appreciate once again everyone who gave me the opportunity as an intern such a great experience.

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An Undergraduate Internship/Project on yourTopic

By

NUSRAT ZAHAN

Your Name

Student ID: **yourID**

1730739

Summer, 2022

Consent Form

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during final viva, and the department can use this version for archiving.

Mohammad Monir Rahman (19th Sept, 2022)

(Signature of the Supervisor)

Mohammad Monir Rahman.

Name of the Supervisor

Department of Computer Science & Engineering

Independent University, Bangladesh

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