



An Undergraduate Internship Report on Software Development for Brac It Services Ltd

Submitted By

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Department of Computer Science & Engineering

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Acknowledgment

First of all, I would like to thank Almighty Allah for giving me the ability to work hard. It is my privilege that I had the opportunity to do an internship at Brac It Services Ltd. I would like to thank all the people with whom I carry out my internship.

I express my deep gratefulness to my supervisor Md. Fahad Monir, Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh, for his invaluable instructions, continuous guidance, constructive criticisms, and thoughtful advice while pursuing this internship preparation of this report.

I also express my deep gratefulness to Mr. Bipul Basak (Software Architect, Brac It Services Ltd), Mr. Feroz (Software Architect, Brac It Services Ltd). Also, I express my deep gratefulness to all employees of Brac It Service Ltd for their cooperation to help me complete this internship report.

I also would like to thank all my family members and my friends for their eternal support is given to me.

Toufiq Ahmed

May, 2022

Dhaka, Bangladesh

Letter of Transmittal

12th May 2022

Md. Fahad Monir,

Senior Lecturer,

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Subject: Submission of Internship Report

Honorable Sir,

This is to inform you with due honor and respect that I am Toufiq Ahmed (ID: 1631281) from the Internship Course of Spring 2022 in section 10, I would like to submit my internship report on Software Engineering for BracIT. I would like to express my gratitude to you and thank you for allowing me to work on this topic under your proper supervision. This report has been prepared with the utmost attention and concentration. I have done my best to give material that is both valid and trustworthy, in order to make the findings as accurate as possible. Due to a variety of contains, there may be some mistakes, which I respectfully request for your kind consideration.

I would be highly grateful if you are kind enough to receive this report and provide your valuable judgment. Also, I will be happy to answer any kind of inquiry identified with this report, if vital.

Sincerely yours,

Toufiq Ahmed

ID: 1631281

Department of Computer Science,

School of Engineering & Computer Science,

Independent University, Bangladesh

Internship Certificate



Ref. no. BRACIT/HR/2022/279

28 April 2022

CERTIFICATE OF INTERNSHIP

This is to certify that **TOUFIQ AHMED NILOY** worked in our organization as an Intern at Software Engineering Unit under Software Engineering Department from 06/Jan/2022 to 30/Apr/2022 with our entire satisfaction.

During his internship period we found him a sincere, honest, hardworking, technically sound and result oriented with a professional attitude. He is amiable in nature, and he works well as part of a team.

We take this opportunity to thank him for his contribution and wish him every success in future endeavors.

With best wishes,

ATIUN AMIN
Chief Operating Officer



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Evaluation Committee

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External Examiner

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Convener

Abstract

Overall, the report is divided into nine different chapters. First, the introduction, the purpose of the study, the volume of the report, and the background of the work are presented. The second chapter focuses on the literature review, how this work relates to my undergraduate studies and some related work. The third chapter covers project management and financing. This chapter covered time allocation by activity, Gantt charts, resource allocation, and estimated cost. The fourth chapter describes the methodology. Chapter 5 was the main part of the report, I give a description of my work, requirements analysis, system analysis. Systems Analysis described six elements: problem-solving, system design. In Chapter 6, we wrote our future results and some analysis. Chapter 7 focuses on how my work relates to sustainability, social and environmental impact, and ethical issues. Chapter 8 describes some of the challenges we encountered during our internship and some solutions to these problems. Chapter 9 described future work and the conclusion of the report.

This internship report examines software systems and artificial intelligence systems. I have researched many papers on software and backend-related topics and I am trying to understand these topics. I hope this internship opportunity will be helpful for my future career.

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1.Introduction

Internships allow students to gain hands-on experience in the real world. It also allows students to use the skills and theoretical knowledge they have received at the university. They can receive an infinite education in life, but this knowledge does not always apply to their work life. Upon returning from internships, students gain the skills and confidence gained through internships, which in turn provide hands-on experience that prepares them for their future careers. I was allowed to work at Brac It Solutions to complete my internship requirements. I gathered what I learned and applied it. The atmosphere in the office is always filled with kindness, a sense of purpose, and a passion for achieving the best results in work. The report detailed my personal views on the company. Mutual Trust Bank Limited has very strict restrictions and ethical standards that must be followed in its offices. I understand the way they work and ultimately the entire corporate culture.

1.1 Background of the work

I worked as a software engineer at Brac It Services Ltd. We know that every office, business, e-commerce, every workstation today is completely dependent on software and Internet technology. Therefore, Software development is very important. As I am in the Software Development Team, I am working with The Agent Banking development project. Agency Banking is an alternative distribution strategy in which traditional retail banking use authorized agents to expand the reach of the branch network. As it makes it possible to reach more people and more locations, the agency banking strategy promotes financial inclusion. Mobile technology enables the success of the agency banking model. Without digital solutions agency channels struggle with bank processes in the field due to a large number of paper forms, manual compliance checks, lack of network access, and limited functionality. With a platform like Paper soft's, banks can provide a paperless customer journey, digitize the document capture process, automate KYC checks and compliance and quickly onboard new customers.

1.2 Objectives

The objectives of the internship were as follows:

1. To apply theoretical knowledge in the practical field.
2. To observe how the other engineers, operate, monitor the whole System.
3. To learn how the engineers, ensure the company's computer software are working properly.
4. To realize the organizational management system of Brac It Solution.
5. To gain some knowledge in software the company is using.
6. To gain some knowledge on required programming languages and software they are working with and want to know about their basic operation.
7. To find out the success and failure of Brac It Solution.

1.3 Scopes

The aim of “Brac Bank Agent Banking” is to provide banking services to people where banking service is yet to reach or where expansion of bank branches is not financially viable. Agent banking is a cost-effective alternative for the banks as it takes huge amount of money to open branches and operate them. Already some banks got license from the BB to operate agent banking and have made agreements with agents for the purpose. The central bank has circulated the guidelines in this regard and is regularly updating the same in order to make the agent banking system safe and secure.

Through agent banking system, people of remote rural areas people will have access to banking services. Almost 62 per cent of people still remain outside of the banking system and agent banking will help them have banking facilities available at their doorsteps. People of remote areas will get inward remittance conveniently, can save small deposit, pay utility bills, get government financial help under the social safety net programme and small loans, etc. without going to bank branches. The agent will provide banking service on behalf of the banks in exchange of certain commission. Agents will distribute and recover small loan, collect small deposits and gather account information on behalf of the banks.

The purpose of “Brac Bank Agent Banking” module is to make life easier and more flexible. Through this agent banking platform, engaged agents carry out banking transactions from their outlets under a legal agreement with banks.

2.Literature Review

The review of the literature may be theoretical and deposited methods for a particular topic, which may be a scholar of articles that provide this information that provides this information with a greater conclusion. If you need a software system for use by Multiservice, you sort command training. The literature search is performed to identify new technologies of software and development technology and will determine the staff of this stadium, and provide guidance for maximizing the future of operational assets. The methodology used in this operation is as follows. You can first define the appropriate keywords, and then search the Google Scholar database through the search string (obtained from the group keywords) (obtained from the group keyword), Luglio 2012 2 in Luglio 2012 2 green or text with this keyword Related to our goals. You can create quotation marks, and the last generated network has been studied using network quotation analysis. The subject of this review literature may be limited attention to a wide audience, but the methodology is used for general application. A researcher who wants to learn or apply the concepts of other fields that require technology in other fields.

2.1 Relationship with Undergraduate studies

This report is associated with my undergraduate research as I am from the Computer Science and Engineering Department. I actually have discovered loads of n my undergraduate research that assist me to try this Internship report. The Department of Computer Science and Engineering at Independent University in Bangladesh efficiently coordinated the guides and time-table, which helped me in completing my report successfully. University lessons gave facts and abilities that supported the development of my file. During my beneath commencement research, I obtained AI improvement which helped me to take part in software development primarily based software construction in my workplace. On the off danger that the guides had now

no longer been completed earlier than to chip away at this venture, it might have been severely difficult. A portion of the straightforwardly related courses are:

System Analysis and Design:

This course examines the tools and techniques used to design and analyze information systems. In this course, I have learned topics like SQL, system, and models, and was introduced with the tools for determining system requirements and designing the data-flow diagrams and use case modeling and front-end and back-ends, as Brac It required me to do the research and working about software development system so this course helped me to do so.

Web Application and Internet:

After completing this course, I had the knowledge of Html, CSS JavaScript, spring boot, PHP Mysql angular, DBever and some back-end languages which helped me to work in my internship organization, so it had the involvement of the languages I have learned from this course, so it helped me to implement that knowledge in the report. This course provides a complete overview of web technologies and how to use them.

Database Management:

This course examines the tools and techniques of how the database works. After completing this course, I knew database. In this course I learn about software development, how the software works. This course provides a complete overview of management system and how to use them in our practical life.

Software Project Management:

This Software project management course helped me a lot for doing my internship project. In this project management course, I learn about Project tracking and scheduling, Risk management and analysis, Cost estimation model, Project metrics and Function Point Estimation. The course provides an in-depth examination of project management principles and modern software project management practices.

In this course Portfolio management and the use and application of software project management tools are also discussed. So overall this project management course was a very helpful course for me.

Front-End Development:

After completing this course I'm having a strong foundation on software front-end building logic. Have a core understanding in Html, Css, Bootsrap, JavaScript and angular.

2.2 Related Works

To carry on the business of Software designing, development, customization, implementation, maintenance, testing and benchmarking, designing, developing and dealing in computer software and solutions, data centre management and to import, export, sell, purchase, distribute, host (in data centers or over the web) are necessary areas for every Enterprise. To understand how the related software works and how it can help the business, it's essential to know the recent trends. we have so many related works in this networking field. Such As:

- Asset Management software
- Network Security Specialist.
- Cloud Networking Architect.
- Digital banking software solution
- Data Center Networking Specialist
- Software Customization solution

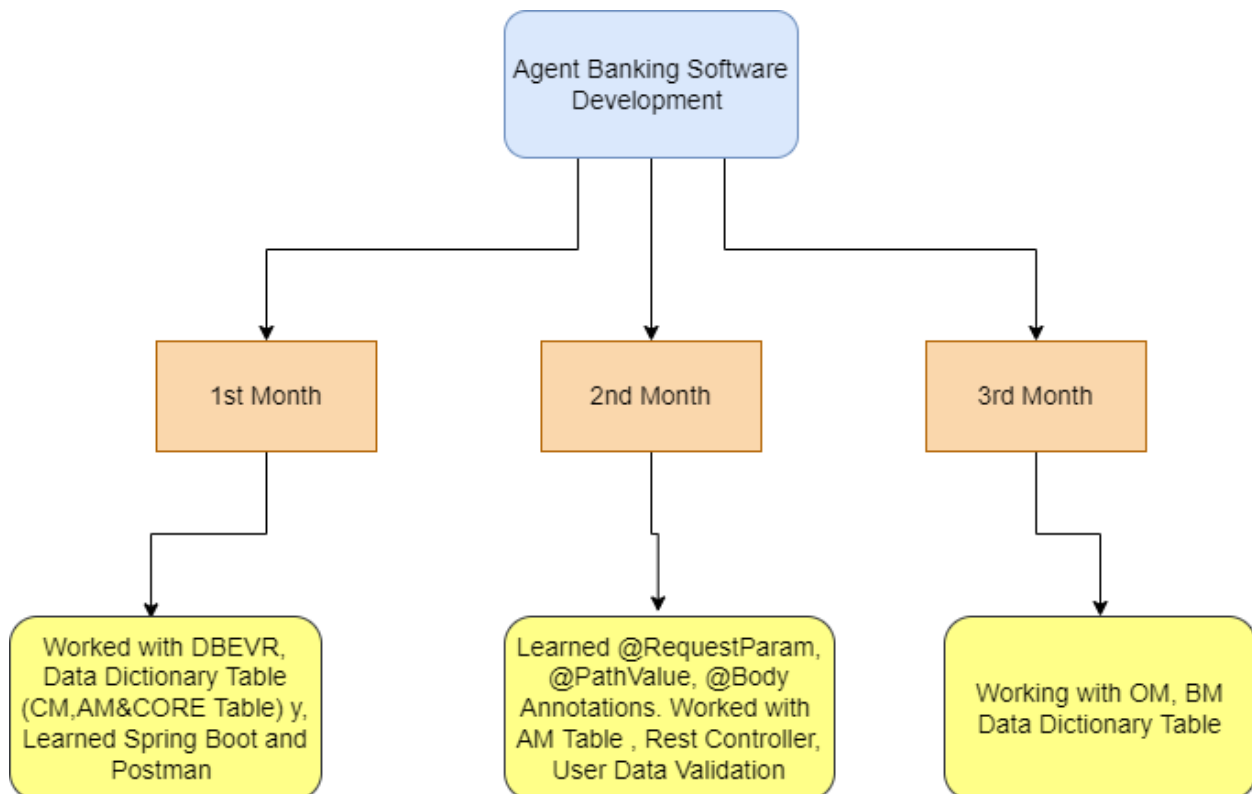
So here we can see that we have so many opportunities in this sector. If any person is good at this things, he/she won't have a problem getting good work.

3. Project Management & Financing

3.1 Work Breakdown Structure

Work breakdown structure or WBS in project management is a method for getting a complex, multi-step project done. It's a way to divide and conquer large projects so we can get things done faster and more efficiently.

The goal of a WBS is to make a large project more manageable. Breaking it down into smaller chunks means work can be done simultaneously by different team members, leading to better team productivity and easier project management.



3.2 Process / Activity Wise Time Distribution

In my 3-month internship period I learnt a lot of things about industry, about how the industry works and how the employee behaves. I met a lot of people in my internship period as I have to do some system support to office employee. My activity wise time distribution as an intern are as follows:

Spring Boot: In my first month, I had the privilege to watch how their system was created and how it works. Learned Spring Framework. Java Spring Framework (Spring Framework) is a popular, open source, enterprise-level framework for creating standalone, production-grade applications that run on the Java Virtual Machine (JVM).

DBEVR: In my first month, I had the privilege to watch how their system was created and how it works. Their system maintain data by using DBEVR. DBEVR is a SQL client software application and a database administration tool. For relational databases it uses the JDBC application programming interface (API) to interact with databases via a JDBC driver. For other databases (NoSQL) it uses proprietary database drivers. Made Data Dictionary Table for CM, AM and CORE Table.

CM/AM/BM Table: They assigned me some Task.

CM: CLIENT_INITIAL_ACCESS, CLIENT_NODE_REGISTRATIONS, CLIENT_SCOPE, CLIENT_SESSION, CM_BBL_NETWORKS, CM_CHAT_GROUPS, CM_FAQS, CM_ISSUE, CM_PRODUCTS, CM_REQUISITIONS etc.

AM: AM_BUSINESS_INFO, AM_DOCUMENTS, AM_HATT_DAYS,

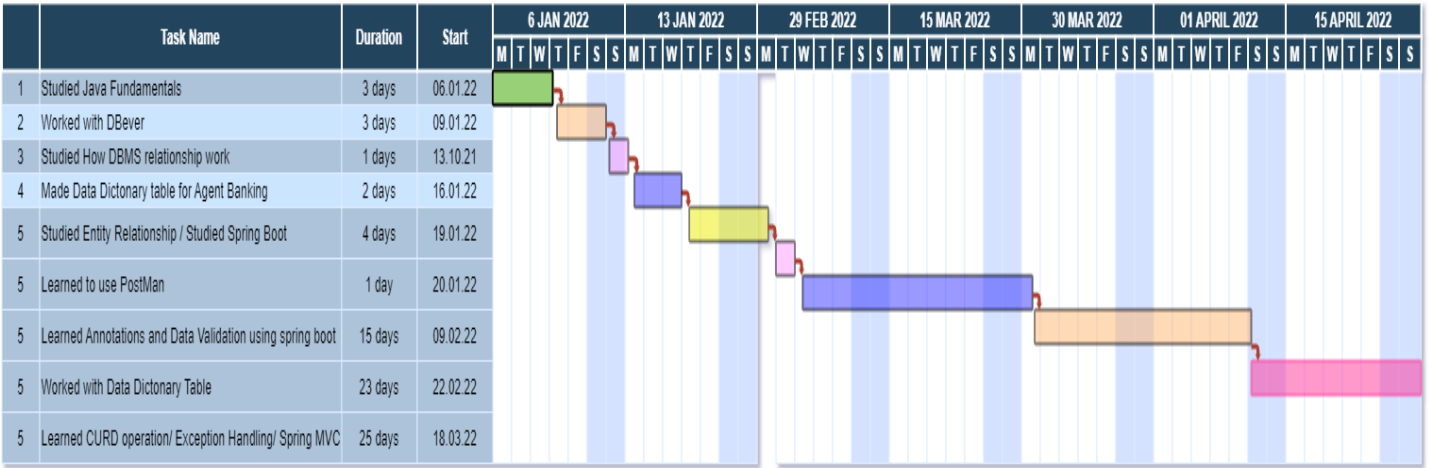
AM_HOSPITALS, AM_INSTITUTE, AM_LOCATION,

AM_MOBILE_BANKING, AM_OUTLETS, AM_OWNERS etc.

BM: BM_COMPANY_CATEGORIES, BM_CONFIG_GL, BM_OI_INPUTS, BM_DAILY/MONTHLY_OUTLET etc.

Created those mentioned Data Dictionary tables using DBeaver.

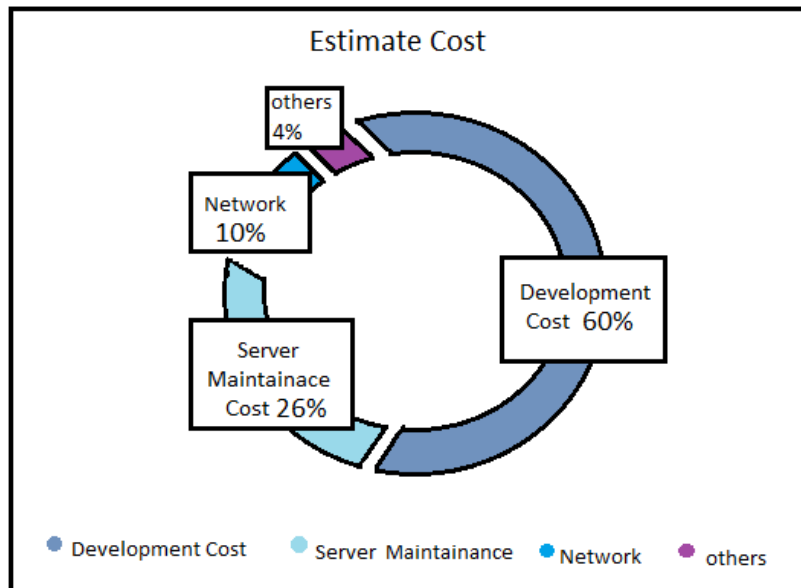
3.3 Gantt Chart



3.4 Process / Activity wise Resource Allocation

People	Development Team	Software Development Team	Server Support Team
Equipment	Computer/Laptop, Stable Wi-Fi	Fiber Cable, Router, Switch, Lan, Computer	Computing server
Facilities	AC Room, Personal Desk	Conference Room, Meeting Room	Great Working Environment
Materials	Personal Desktop	Printer	Provides friendly environment
Budget	Snacks	Communication cost	

3.5 Estimated Costing



4. Methodology

Data is collected through record-keeping or pooling, observation, or measuring. The integral part was to identify and collect data; they were classified, analyzed, interpreted, and presented in a systematic manner. The nature of the report is qualitative and quantitative, and the source is primary and secondary. We must consult with various people, booklets, news, newspaper, and another source to gain correct data. This report is maintained based on primary as well as secondary sources which are given below:

The study began with the collection of primary and secondary data.

Primary Sources

1. Work Experience- Most of the information and process were learned by working there. So many difficulties were faced when working there.
2. Verbal Interview- I did some surveys about their system, what they really follow, and what difficulties they faced.
3. Questionnaire- I ask some questions to the employees who work there. They helped me very much.
4. Discussion with the relative IT person- I personally met with some of my relatives who work in IT to discuss about the IT sector.

Secondary Sources

1. Articles
2. Magazine
3. Newspaper

Other sources

1. Internet
2. Web site

The other side what help me in major way to make this report is internet searching and their and other websites.

5.Body of the Project

5.1 Work Description

As an intern of the Software Development team, my important responsibility was to understand the systems of the organization. They provided the necessary documents to get an overview of the systems and team discussions. They assist me to understand all the terms and topics of the system. I have learned Java Spring Framework, using DBever.

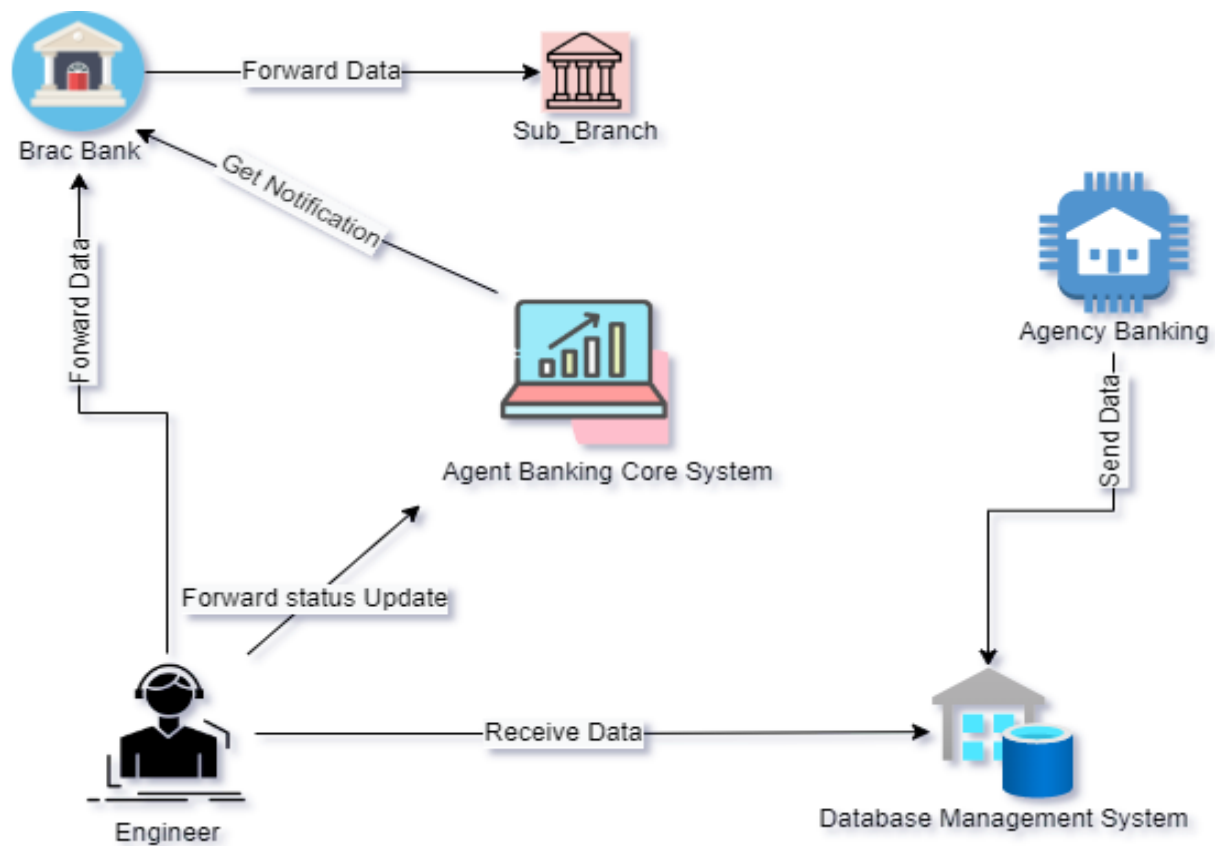
My task was to create BM/AM/CM Data Dictionary Table, Data Flow Diagram for the project and also assist my supervisor in server management. In the later portion of my internship, I was involved in Research and Development with a particular topic. Another responsibility was to monitor daily operational performance.

How will Agent Banking system work:

The Project works on basic smartphones and allows agents to work anywhere even in areas without connectivity. Validate all information offline with business context alerting issues. Capture and validate customers' documents without having to fill-in any paper forms. The solution includes OCR, anti-fraud document or record checks, e-signature and biometric capabilities that ensure the registration matches the real customer identity. Transform the information-intensive journey of opening an account in agent's outlets into an effortless process ensuring a great customer experience, with a fast and secure solution to onboard and manage clients. Paper soft's platform allows managing a sustainable agent network, upgrading the agent onboarding processes and quality of new agents with greater data insights about the entire operation. Receive real-time liquidity overviews, including cash under management and paid commissions through better control at field level. This way, agents will be better equipped to deal with cash shortage by planning their rebalancing times. Increase collected deposit reducing the risk of dormant accounts.

5.2 Requirement Analysis

5.2.1 Rich Picture



5.2.1 Rich Picture

5.2.2 Functional and Non-Functional Requirements

Non – functional requirements

Performance requirements

AIS contains the functional and non-functional requirements of the project. This document contains the guidelines for website developer system engineers and designers to start working on the project.

The project is specifically designed for the use of Admin only.

Non-functional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability and usability etc. They serve as constraints or restrictions on the design of the system across the different backlogs.

- Scalability in terms of large end-user population.
- Responses to view information shall take no longer than 5 seconds to appear on the screen.
- The allowable distributions of time which the system takes to respond to requests.
- Requirements stating when the service or each aspect of the service, must be available to its users. The disaster recovery ability to recover from & continue service.
- The minimum proportion of time of given online service hour should be available.
- Each page must load within 2 seconds.

Safety Requirements

Non- functional requirements can be divided into two main categories. Execution qualities, such as safety, security and usability which are observable during operation. The safety requirements are those requirements that are defined for the purpose of risk reduction.

- System use shall not cause any harm to human users.

- With safety requirements the website gives service 24 hours for all users.
- Safety requirements are designed into the software in a timely, cost effective manner.
- Every requirement should include the supporting information that is appropriate for project.

Security Requirements

This non-functional requirement assures that all data inside the system or its part will be protected against malware attacks or unauthorized access. If your security relies on specific standards and encryption methods, these standards don't directly describe the behavior of a system, but rather help engineers with implementation guides.

- System will use a secured database.
- Correct identification of parties attempting access to the system and protection of the system from unauthorized parties.
- Data confidentiality extent to which data needs to be protective and kept confidential.
- The processes which will be used to confirm systems compliance with an organization's security standards and policies.
- Security driven auditing in order to ensure that security guidelines and policies are not being breached.
- Normal users can just read information but they cannot edit or modify anything.
- Personal information and some other information.
- System will have different types of users and every user has access constraints.

Software Quality attributes

Software quality requirements can also be non-functional, it can be a performance requirement. This requirement specifies properties of the developed system in terms of the ease with which fixes, enhancements and modifications can be made to it and what support is required for implementing those releases.

- Flexibility, the degree to which systems like code, parameters, components, modules etc.... is intended to support change.
- Portability, the extent to which the system supports platform independent, so that it could be ported to alternative platforms.
- Data management, category of requirements relatable to the way which data is to be stored, managed and protected.
- Data integrity, correctness & completeness of data must be mentioned in the system.
- Data backup & restore, creating secure backup of operational data stores.
- Reusability, the likelihood that an asset can be used again to add new functionality with slight or no modification.

Business Rules

Business rules are not functional requirements. However, business rules may strongly influence functional requirements. If business rules are not clearly documented, it is easy to miss them and can result in a significant amount of costly project rework. Business rules are assumptions. Business rules are one of the main sources of functional requirements for software, they determine the capabilities that the system must have for the rules implementation.

- Internationalization, the required languages and locales the applications must support. And defines the user preferences for that region, such as data format, number format etc.
- Describing legal requirements and/or legislative constraints which arise from outside the client's own organization.

- Associated risk, describe the identified risks associated with the project which might impact, for example whether new or unproven technology might be used on a project.
- Interoperability, the capability of two or more components and/or systems to exist or function without mutual interference.
- Increased revenue/user reach
- Reduces expenses/errors
- Improve users' service

Functional requirements

Requirement ID: BBABS -1

Title- Provide Source code

Description- This action is done to creates source code for the system.

Requirement ID: BBABS -2

Title- Update/Delete/Edit Data

Description- This action is done to update or delete or edit any data from the database

Requirement ID: BBABS -3

Title- Create Table for the Database

Description- This action is done to create DDT (Data Dictionary Table) and DFD (Data Flow Diagram) Table for the system.

Requirement ID: BBABS -4

Title- Provide Query

Description- This action is done to provide SQL Query to the database.

Requirement ID: BBABS -5

Title- Update It Asset System

Description- This action is done to forward data to the system.

Requirement ID: BBABS-6

Title- Forward data

Description- This action is done to forward data/update to the bank main section.

Requirement ID: BBABS-7

Title- Forward status update to sub-branch

Description- This action is done after Bank main section receives the data then it passes to rest of the branches.

Requirement ID: BBABS-8

Title- Forward status update to sub-branch

Description- This action is done after Bank main section receives the data then it passes to rest of the branches.

Requirement ID: BBABS-9

Title- View Product Category

Description- This action is done to view product category, status and description in the system.

Requirement ID: BBABS-10

Title- Edit FAQ List of Categories

Description- This action is done to edit FAQ list of categories in the system.

Requirement ID: BBABS-11

Title- View Deposit Amount

Description- This action is done to view customer total deposit amount.

Requirement ID: BBABS-12

Title- View Service / Survey details

Description- This action is done to view customer outlet service summary and survey details.

5.3 System Analysis

System development is a step-by-step procedure that contains several parts such as planning, maintenance, design, analysis etc. System analysis is a process of gathering and interpreting facts, finding problems, and breaking down the whole system into its individual components. A system analysis is conducted to investigate a system or its components in order to determine its goals. So overall system analysis is a problem-solving method that develops the system and ensures that all of the system's components work together to achieve their goals.

5.3.1 Six Element Analysis

PROCESS	HUMAN	NON-COMPUTING HARDWARE	COMPUTING HARDWARE	SOFTWARE	DATABASE	COMM & NETWORK
WINDOWS SERVER 2012 R2	Engineer	N/A	Browser/PC	2012 R2	Cloud	Internet
AGENT BANKING SYSTEM	Engineer	N/A	Browser/PC	Java, Spring Boot, Postman	Cloud	Internet
COMPANY	Authority	N/A	Browser/PC	N/A	Cloud	Internet
FILE SHARING	Engineer	N/A	Browser/PC	Outlook	Cloud	Internet
DATA ANALYST	Engineer	N/A	Browser/PC	Excel, Doc	Cloud	Internet
DATA COLLECTOR	Engineer	N/A	Browser/PC	PDF	Cloud	Internet

5.3.2 Feasibility Analysis

The analysis of a proposed project to determine whether it is feasible and should go ahead is called feasibility analysis. Confirmation of design, plan and strategy is the main priority of this analysis. This can be used to validate assumptions, constraints, decisions and approaches. A feasibility study is conducted to determine whether the project, upon completion, will serve the organization's purpose for the amount of work, effort, and time spent on it. A feasibility study enables the developer to envision the project's future and usefulness. A feasibility study evaluates a system proposal's workability, which includes the impact on the organization, the ability to meet user needs, and the efficient use of resources.

A feasibility study assists in identifying logistical issues, as well as nearly all other business-related issues and their resolutions. Additionally, feasibility studies can result in the development of marketing strategies that persuade investors or a bank that investing in the business is a sound investment. A feasibility study is conducted to determine the viability of a proposed system in terms of technical, operational, and economic factors. After conducting a feasibility study, we can gain a clear understanding of the system's advantages and disadvantages.

There are some main parts of feasibility analysis. They are -

1) Technical Feasibility:

The technical possibility of developing a product per client expectation is called technical feasibility. In technical feasibility, evaluation of the software, hardware and the other technical requirements of the proposed system are performed. This evaluates the details of how we intend to deliver a product or service to customers. Labor, materials, transportation, where our business will be located, and the technology that will be necessary to bring all this together.

To build our project “Agent Banking System” we are using Angular for frontend and Spring Boot for backend. Spring boot comes up with a built-in build server. These are called as an embedded server in spring boot; this helps us to make the local

development fast because we do not require to add the server from outside and do the necessary configuration; we can just create the application from scratch and run the main class as spring boot application it will automatically pick the server and start the application. HTML and Css are compulsory to give a proper outlook for the Agent Banking and we are also using Typescript for using angular and JS also.

2) Operational Feasibility:

Operational feasibility is a measure of how well a proposed system solves the problems and satisfies the system requirements identified during the scope definition and problem analysis phase. It is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. “Agent Banking” has been developed in a very easy and simple way so that everyone can use this easily without any hassle. It is a well-planned system which is very easy to understand and easy to use. People will accept it without any doubt. People of all ages will be able to use it. Users need not have a lot of technical knowledge to run this system. Every instruction is very clear to the users. We hope this system will be able to fulfill the requirements of the users.

3) Economic Feasibility:

In economic feasibility, costs and benefits are identified. It determines cash flow and assigns values to costs and benefits. Development costs and production costs are included in economic feasibility.

Our project “Agent Banking” is a platform from which people will benefit in so many ways. We can say that our project system is nothing but a product. If this system can reach the users it will definitely bring benefits. On one hand it will reduce the costs of wasting pens and papers.

On the other hand, benefits will come depending on the uses.

5.3.3 Problem Solution Analysis

Problems:

Every work has some problems. In Our System may also cause issues such as

1. **Eye strain:** As harmful radiations are emitted from the PC, Laptop and Mobile screens then it may cause some eye strain problems.
2. **Internet:** As this system will require internet connection once it has been launched.
3. **Load shedding:** If anyone uses desktop and Wi-Fi routers then load shedding may create problems while using this system.
4. **Page-Loading:** The traditional html/Css/DBever took much time to load and had C grade rating when tested.

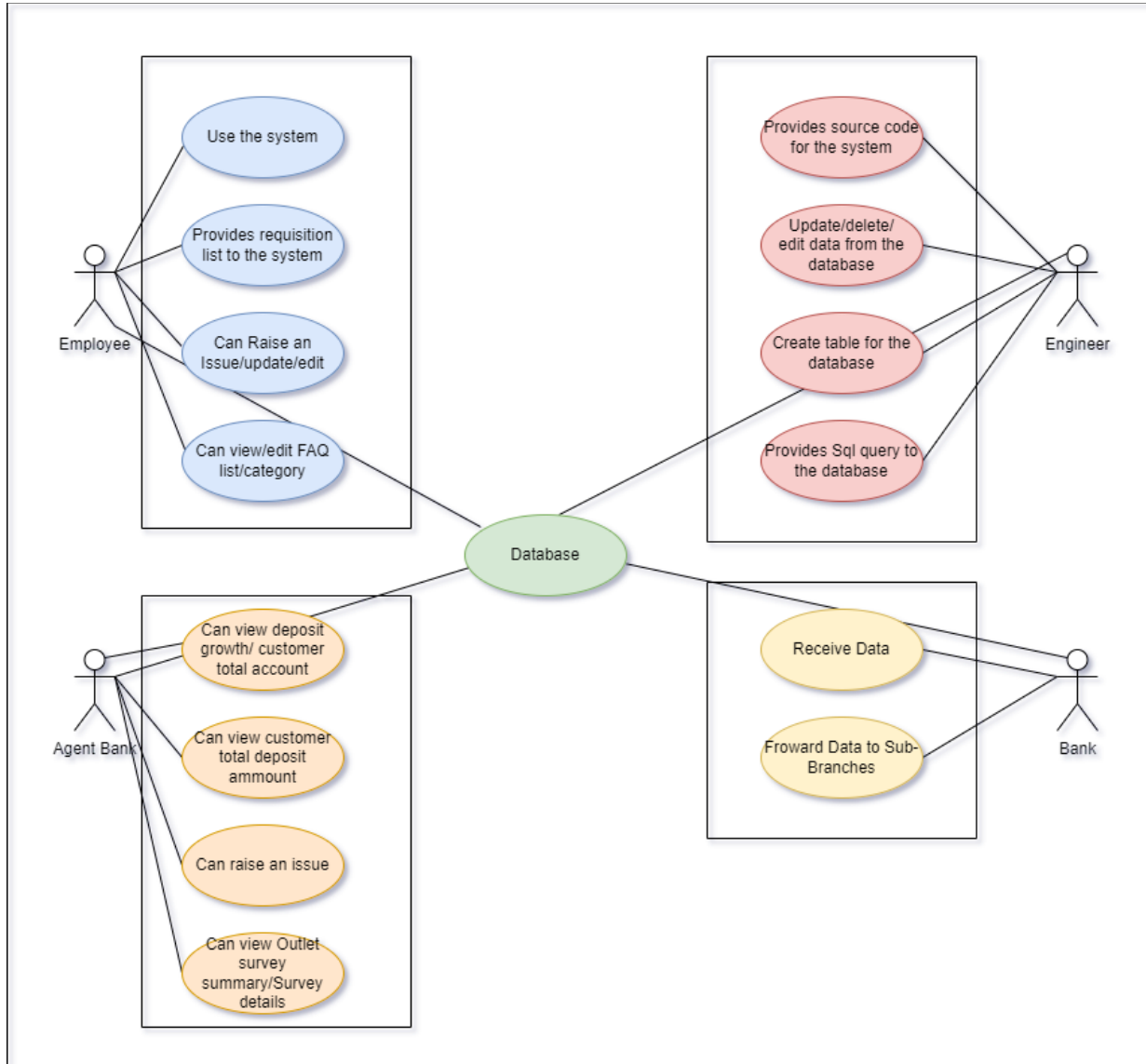
Solutions:

While there are problems, there are solutions too. Now I am going to discuss about the solutions of the problems mentioned above

1. **Eye strain solution:** Brightness of the device should be maintained while using this system.
2. **Solution to the internet problem:** Nowadays internet data is not so costly that we cannot afford that. Our system does not consume a lot of data.
3. **Load shedding solution:** As this system can be run from laptop and mobile that do not require continuous electricity connection, users can use them very easily.
4. **Page Loading Solution:** We use Angular and Spring Framework for developing our project which helps a project to become faster and more efficient.

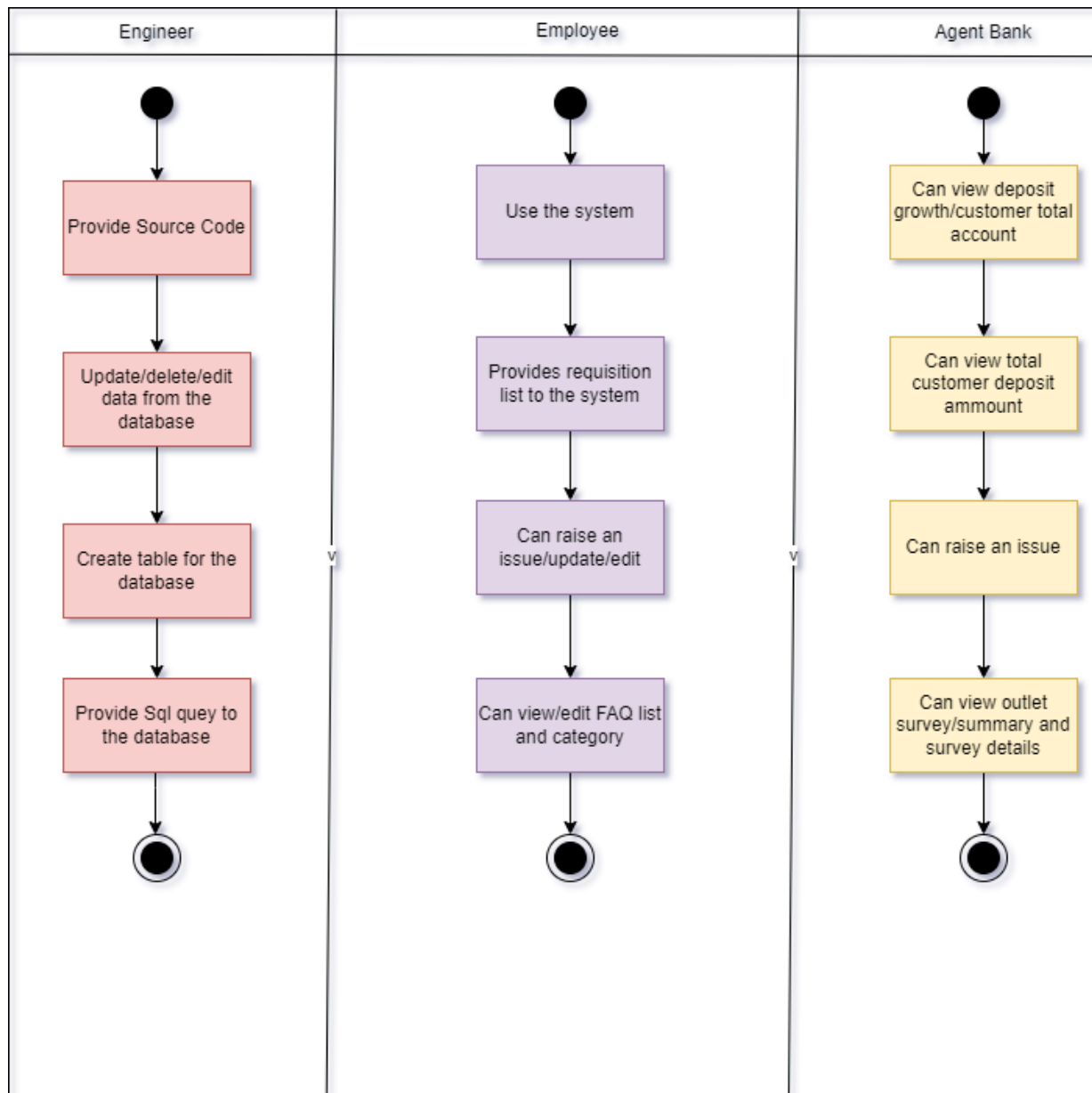
5.4 System Design

5.4.1 UML Diagram



5.4.1 UML Diagram

5.4.2 Activity Diagram



5.4.2 Activity Diagram

5.5 System Implementation

The screenshot shows the DBeaver 21.3.2 interface with the table **BM_MONTHLY_OUTLET_TRX_AMOUNT_SUMMARIES** selected in the Database Navigator. The table is located in the **USERS** schema. The table properties are displayed on the right, including the table name, type (N/A), and tablespace (USERS). The column list is shown below the properties, detailing the column name, data type, and other attributes.

Column Name	#	Type	Type Mod	Not Null	Default	Comment
123 ID	1	NUMBER(19,0)		[v]		
123 SUPERVISOR_HI...	2	VARCHAR2(255)		[]		
123 OUTLET_ID	3	NUMBER(19,0)		[]		
123 LOAN_REPAYM...	4	FLOAT		[]		
123 LOAN_DISBURS...	5	FLOAT		[]		
123 CASH_DEPOSIT...	6	FLOAT		[]		
123 CASH_DEPOSIT...	7	FLOAT		[]		
123 CASH_DEP_OTH...	8	FLOAT		[]		
123 CASH_WDRWL...	9	FLOAT		[]		
123 FUND_TRANSFE...	10	FLOAT		[]		
123 FND_TRANSFR_O...	11	FLOAT		[]		
123 BEFTN_A	12	FLOAT		[]		
123 REMITTANCE_T...	13	FLOAT		[]		
123 DEBIT_CARD_IS...	14	FLOAT		[]		
123 CHECK_BOOK_I...	15	FLOAT		[]		
123 CUSTOMER_ON...	16	FLOAT		[]		
123 REB_BILL_COLL...	17	FLOAT		[]		
123 DISTRIBUTOR_Bl...	18	FLOAT		[]		
123 INSURANCE_C...	19	FLOAT		[]		

The screenshot shows the DBeaver 21.3.2 interface with the table **CM_BBL_SERVICE_POINT_MAP** selected in the Database Navigator. The table is located in the **USERS** schema. The table properties are displayed on the right, including the table name, type (N/A), and tablespace (USERS). The column list is shown below the properties, detailing the column name, data type, and other attributes.

Column Name	#	Type	Type Mod	Not Null	Default	Comment
123 ID	1	NUMBER		[]		
123 BBL_NETWORK_...	2	VARCHAR2(255)		[]		
123 SERVICE_POINT...	3	VARCHAR2(255)		[]		

The screenshot shows the DBeaver 21.3.2 interface with the 'AM_OUTLETS_BUFFER' table selected in the 'Database Navigator' on the left. The table is displayed in a grid view on the right. The table has columns: OUTLET_ID, VERSION, CREATED_BY, CREATED_ON, and UPDATED_BY. The data is as follows:

OUTLET_ID	VERSION	CREATED_BY	CREATED_ON	UPDATED_BY
41002	1	aro_user	2021-11-29 15:29:45.899	aro_user
39,102	1	aro_user	2021-10-06 04:20:27.667	aro_user
69,004	0	bipul	2022-03-09 10:58:38.187	bipul

The status bar at the bottom indicates '4 row(s) fetched - 98ms (+1ms)'.

Practice Tasks

The screenshot shows an IDE (likely IntelliJ IDEA) with a Java project. The main code file is 'AppController.java', which contains the following code:

```

public List<UserDto> getUsers() {
    List<User> userArrayList = userRepo.findAll();
    List<UserDto> userDtos = new ArrayList<>();
    for (User user1 : userArrayList) {
        UserDto userDto1 = new UserDto();
        userDto1.setFirstName(user1.getFirstName());
        userDto1.setLastName(user1.getLastName());
        userDtos.add(userDto1);
    }
    return userDtos;
}

@PostMapping(value = "/save")
public String saveUser(@RequestBody User user) {
    userRepo.save(user);
    return "saved..";
}

@PostMapping(value = "/update/{id}")
public String updateUser(@PathVariable long id, @RequestBody User user) {
    User updatedUser = userRepo.findById(id).get();
    updatedUser.setFirstName(user.getFirstName());
    updatedUser.setLastName(user.getLastName());
    updatedUser.setAge(user.getAge());
    userRepo.save(updatedUser);
    return "updated";
}

```

The IDE also shows the 'Run' tab with the following logs:

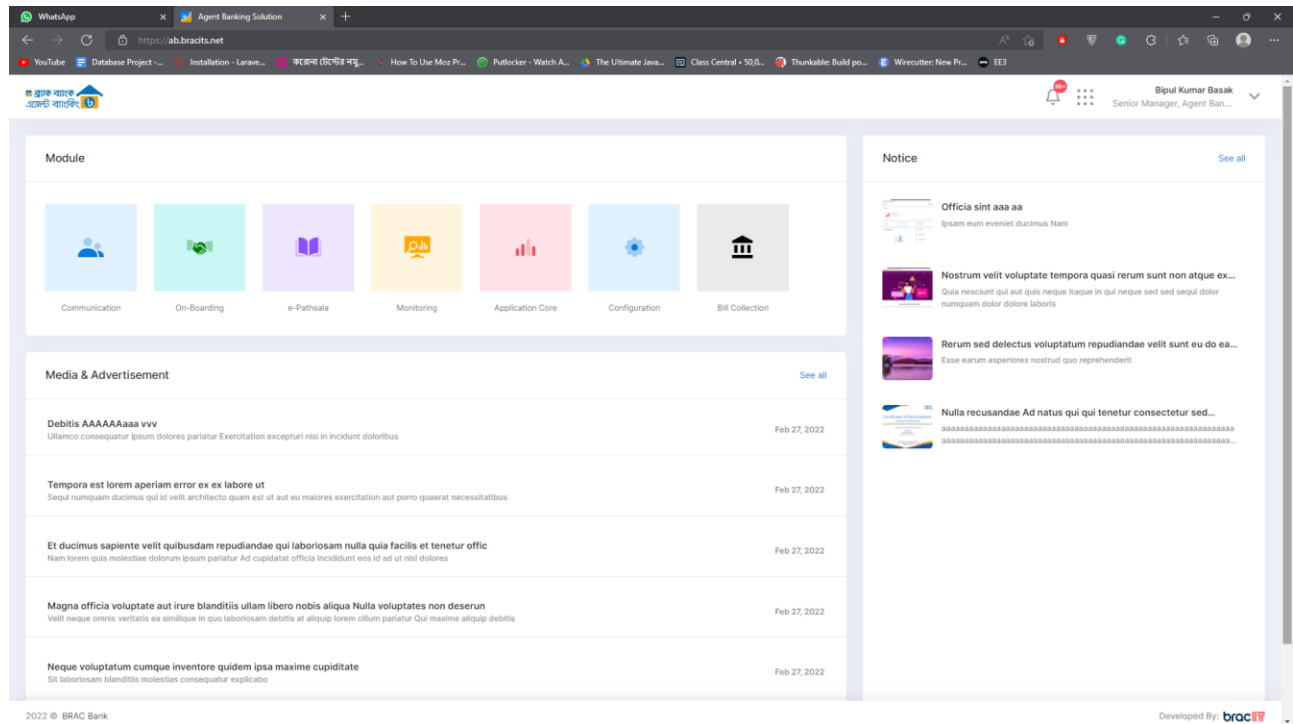
```

main | org.apache.catalina.core.StandardEngine | Starting Servlet engine: [Apache Tomcat/9.0.60]
main | o.a.c.c.([Tomcat].[localhost]./) | Initializing Spring embedded WebApplicationContext
main | w.s.c.ServletWebServerApplicationContext | Root WebApplicationContext: Initialization completed in 1518 ms
main | org.hibernate.jpa.internal.util.LogHelper | HHH000204: Processing PersistenceUnitInfo [name: default]
main | org.hibernate.Version | HHH000412: Hibernate ORM core version 5.6.7.Final
main | org.hibernate.annotations.common.Version | HCANN000001: Hibernate Commons Annotations (5.1.2.Final)

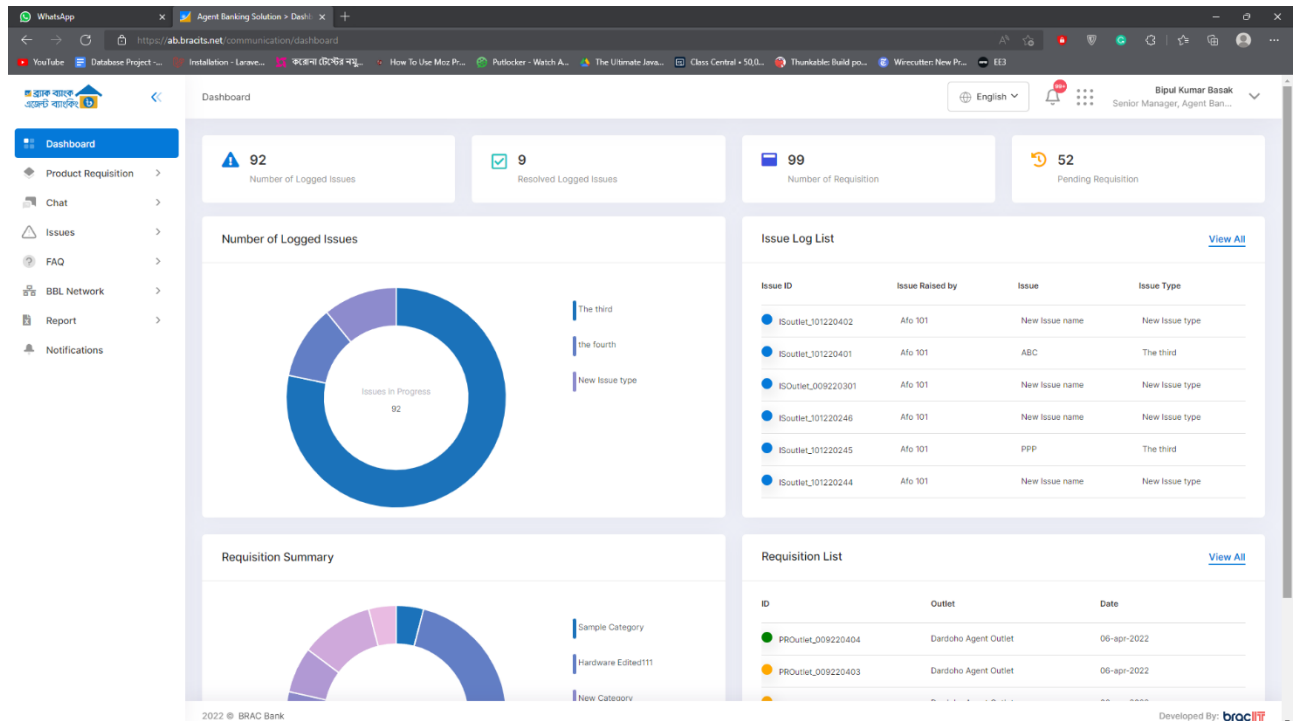
```

5.5 System Testing

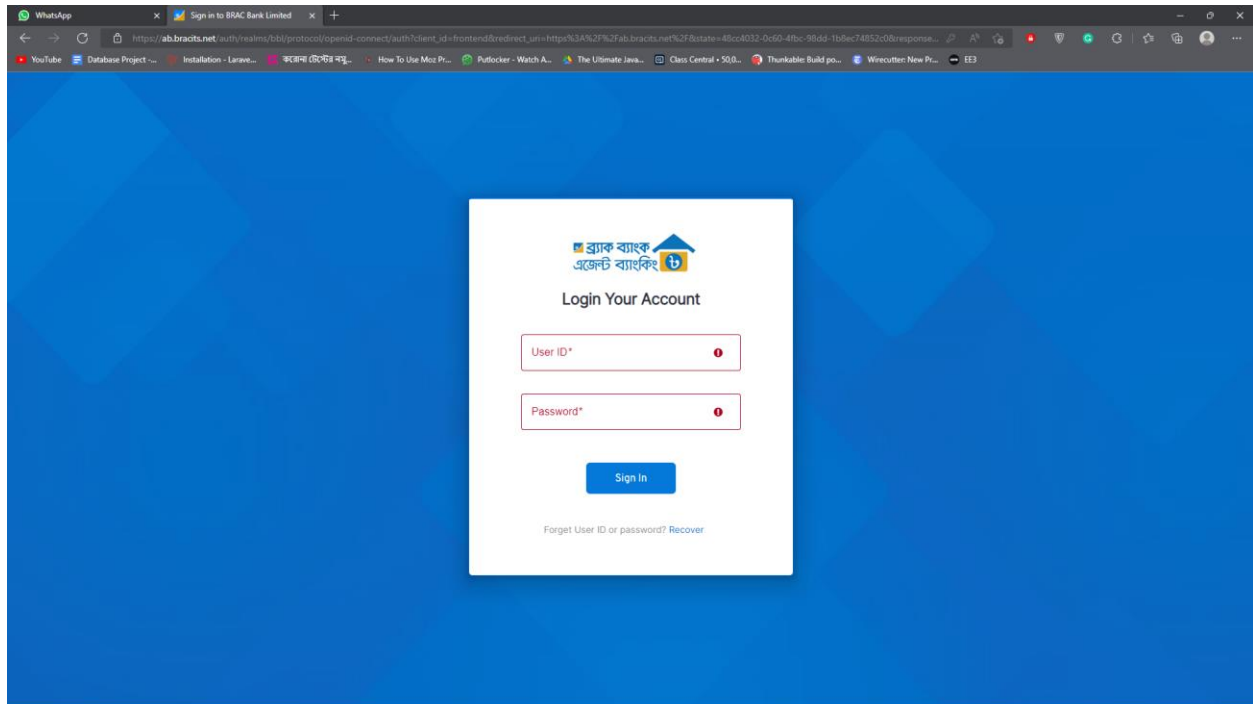
Front Page



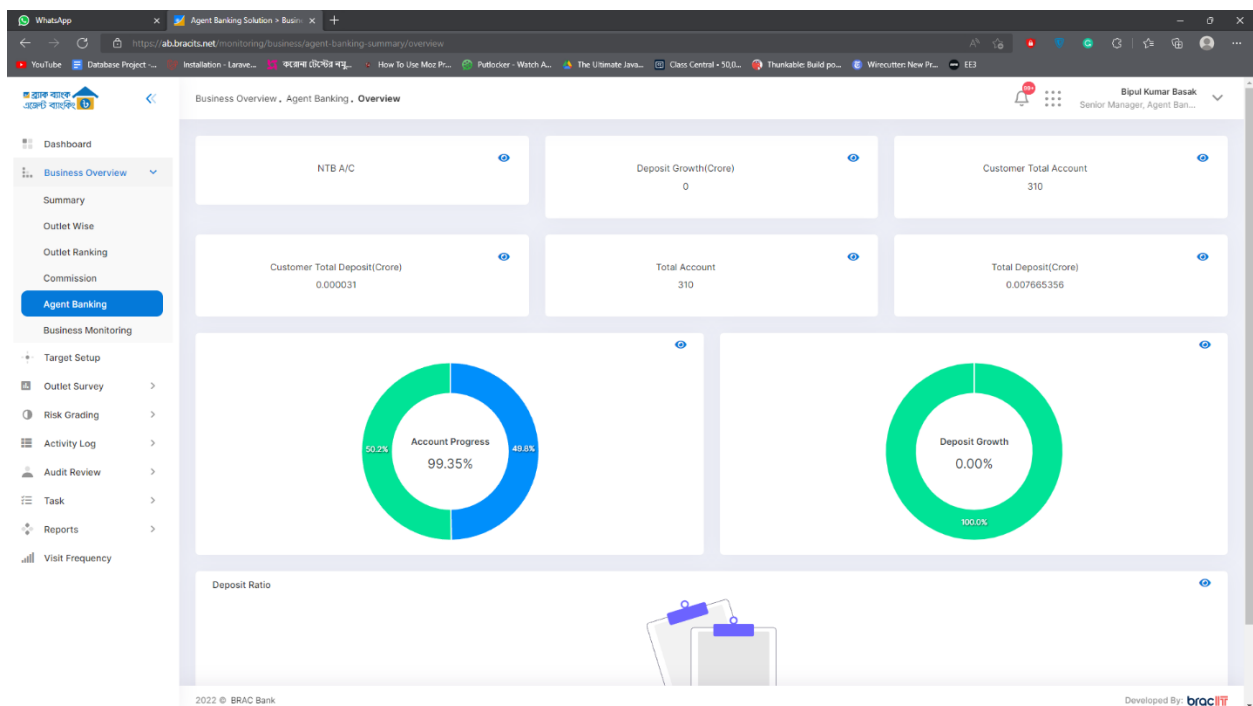
Dashboard



Login Page



Agent Banking



6 Result & Analysis

“Brac Bank Agent Banking system” is developed for rural living customers. It is for those who does not have access to formal banking. For smooth operation of Agent Banking, a separate Department in the name and style "Agent Banking Department" has been created. The Department will serve wide range of customers throughout the country by providing banking and financial services with the help of mobile telecommunication devices/ computer system/ using biometric technology. Especially for clients in remote locations, Agent Banking Department will help them deposit and withdraw funds and other admissible services at banking agents, i.e., retail outlets that turn Deposit to electronic funds and vice versa. With the help of the agent banking service customer can enjoy the convenience of banking service at any place of the country.

Now how will my project help in my workplace?

Not only it was built for rural living people anyone can use “Agent Banking” system, including BracIT employees as well. Employees can enjoy the convenience of banking service specially in times like this where technology advancement are increasing tremendously.

7. Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

In this day and age, project supportability is more fundamental than any time in recent memory. Project supportability includes both individual and hierarchical obligation to guarantee that results, results and advantages are supportable over life cycles and during their creation, removal and decommissioning. In the task calling, supportability is a business approach that adjusts the natural, social, and monetary parts of venture-based work to meet present partner needs without risking or overburdening people in the future. This undertaking I am working on depends on BracIT conservative and ecological issues. This undertaking will be utilized as benefit for my association. As representatives are turning out physically for IT division this venture will help them to control the division.

7.2 Social and Environmental Effects and Analysis

Innovation can imply that specific jobs in an organization are not generally needed. New occupations are made yet it is unsure whether ICT has made or decreased valuable open doors in the long haul. Headways in innovation have had an immense influence on media outlets. These days the web is an integral part of our day to day existence and we can't envision our day to day and public activity without it.

Network is the key and that is the main thing we got from the web. Engineers and Designers are building the web-based store or sites. The server that the site runs on should be fabricated and provided. The substance needs adding to the server all of the data about a tune, collection or film should be placed into the website's data set and the server and site must be kept up with. These positions require a worker to have progressed IT abilities. This is valid for some positions today in the Technology business and numerous representatives go through broad retraining to empower them to stay in work. ICT can help the climate, for instance it has given individuals the choice to work from home, decreasing the need to go into work.

7.3 Addressing Ethics and Ethical Issues

Individuals all over the planet have various arrangements of morals. Issues could emerge when one's morals are pointed off-base by others which might cause an undesirable anxiety of some sort. Here we are in general encircled by devices smart phones PCs a lot more and with this multitude of contraptions comes numerous other moral circumstances like protections as this present time we're in an opportunity of cell phones furthermore, there is an enormous opportunity of information span so when we are creating something any web application or a site or programming we need to consider the security first, security of the information, security of the client, security of the application with the goal that it can't be hacked or gotten to by any outcast who have no consent to do as such here we follow a few morals like we just gather the information that is required, we don't offer the information to some other gatherings or some other organizations, we work on our protections to store information in our servers so that can't be gotten to by others and a solid application that the client can trust and use without a second thought so here in the task of "Brac Bank Agent Banking", I have gathered the information and it is put away and it will be involved simply by the workers with the end goal of the application improvement. I've previously referenced the client information protections and have followed each progression to keep the information protected and not let some other or any outsider to gain admittance to our data set just the endeavor engineering group has the entrance of the data set for the framework improvement.

8 Lesson Learned

8.1 Problem Faced During This Period

During my Internship period at BracIT Service, there were a large number of issues that we needed to go through. The first was the Covid-19 period which made it hazardous to go to work. I was tested Covid positive back then and needed to work from my home. Additionally, we needed to take care of business from home during the lockdown time frame. While taking care of work from home, connections with seniors and associates turned into somewhat troublesome, and many confronted network issues and issues while doing group gatherings and conversations. While we were chipping away at this venture we dealt with numerous issues. whenever we were informed about the task it required me very an investment to comprehend the necessities as it was my most memorable pragmatic infield project so it required me an investment to comprehend the prerequisites then as we worked with new advances it required me an investment to become familiar with the innovations and the software's. We confronted a few bugs while coding. we were additionally worried about the exhibition of the application .so these were the issues I looked during my task time.

8.2 Solution of Those Problems

While doing this project I faced a lot of problems but the challenge was how to resolve them. when problems like understanding occurs, I used to take notes and used to question to our superior who briefed us about the project and I cleared the doubts. on the other side While there are problems, there are solutions too.

9. Future Work & Conclusion

9.1 Future Works

In real life finding a job can be a big challenge of anyone of our country, especially if we have no experience. That's why I have chosen Internship, because it can help me to improve my career opportunity into an experience. So, this internship provides me to find scope in future life:

1. Work as an UI/UX Developer.
2. Work as a Software Engineer.
3. Work as a Web Developer.
4. Work as a technical support and security manager.

9.2 Conclusion

When I started working as an Intern at BracIT, I had some basic ideas, but the professional sector is completely unique and different. I also had no clue where to start. It is all about dedication and passion so I start asking questions to the senior, sit beside them to see what they are doing. I have come to learn and know many new unknown things. I have achieved so many new skills and knowledge. It made me understand that professional practice is important. After working on here I have gained new knowledge, skills, and met so many new people. I got insight into professional practice. The demand for practical work experience has no other alternative in today's job market. An internship is a great opportunity to achieve this experience.