

Internship as a software Engineer- Banking App

by

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An internship report submitted to the Department of Computer Science and
Engineering
in partial fulfillment of the requirements for the degree of
B.Sc. in Computer Science and Engineering.

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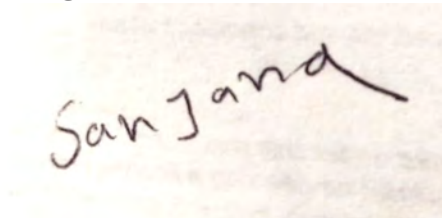
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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. We have acknowledged all main sources of help.

Student's Full Name & Signature:

A photograph of a handwritten signature in black ink on a light-colored, textured surface. The signature reads "Sanjana" in a cursive, slightly slanted script.

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Abstract

In this present world everything is considered under competition . In our academic life we compete with our class or group mates. On the other hand in our job sector we compete with other companies . Now if we think about the companies , industries , banks they always think how they will serve the better product better proposals also better options to the customers . Now by only giving the better options and product we can not only attract our customer we have to gain their trust we have to please them with our service so that they can not think about other options . In the urban area there are so many opportunities to gain the attraction of the customer through advertising in social media and what not but if we think about rural area people who are not that advanced about technology and social media , for them we have to please them manually . So by doing my internship in a bank which is the one of the most challenging parts for me as a CSE student, doing an internship under a bank is not a piece of cake. Also, the branch that I joined is in a rural area so that is also not a bed of roses for me . If we think about other the IT companies they have enough work for you to do you will get tired by solving problems but in my side as a intern in a bank also the branch that is located in rural area I have to find work what can I do how I please my seniors how can I complete my internship not only to the bank but also I have to show my work to my University to prove that I learn so many things in this six months . So I presented an idea of an app to my branch. I have to prove how the branch and customer will be beneficial through this banking app .

Dedication

I want to dedicate all my work and struggle and success in my education life to my dear parents. Without them I am nothing. With due respect and love to remember my father who passed in April 2021. Also I want to devote the work of my internship to my supervisor sir MD. Golam Rabiul Alam without the support of sir I can never think of completing my internship not in my dream also. Another important person who trusts me who understands me and also without him it is impossible to complete my internship, sir MD. Jahangir Alam (SAVP manager of SIBL Galimpur branch).

Acknowledgement

Firstly , all the praise to the Almighty Allah with whom my internship has been completed without any major difficulties . Secondly , my academic supervisor Sir MD. Golam Rabiul Alam who guided me and helped me. I can clearly say that without him I cannot complete my internship . I call him when I face any kind of problem or I take his appointment. I met him in university, he listened to my problems very calmly and gave me the solutions . Thirdly, my industrial supervisor sir MD. Jahangir Alam (SAVP) is the most amazing and supportive senior I have ever met. Finally , my mother without her support I am nothing .

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Chapter 1

Introduction

1.1 Preamble

We learn so many things through our courses in our academic life. Internship is the place where we get a chance to represent our academic knowledge to a practical workplace through which we can prove our ability and also improve our professional skills. In our academic courses we learn how to implement but in internship we learn who and what to implement according to the environment . In a university course we learn theoretically but in a workplace we learn practically . I think we can gather knowledge and improve our self by our mistakes but when we are in our original or permanent workplace doing lots of mistake can hamper our job life to guide our self or train yourself properly so that we can show our amazing working skills and ability internship is the best option but it does not mean that we will not do any kind of mistake in our job life after doing internship but we can improve our self so that we can keep us away to do any serious type mistake . Through an internship we learn how to represent our ability to others, how to communicate with seniors and juniors and also how to deal with customers . I chose Social Islamia Bank (SIBL) for my internship and they appointed me to the Galimpur branch which is almost 60 Km away from Dhaka city . Then I reached my supervisor sir MD. Golam Rabiul Alam who approved me to do the internship . BRAC university provides opportunity of the internship for the following purpose :

1. To give a student the taste of real world working experience .
2. To give the student an opportunity to apply their academic knowledge in real life .
3. To prepare a student for their real working life .

As a running student, internship plays a great role in our life to improve our hard and soft skills and also give a chance to see our future professional life . It is a guided life to prepare yourself to survive in a tough competitive world . I will suggest that students should take this opportunity that is provided by BRAC University

1.2 Aims and Objectives

The paper is written based on six months working experience with Social Islamia Bank LTD (SIBL) , and it is generated as a requirement of an internship program

under the Computer Science and Engineering department of BRAC university . So the main objective of this document is to complete the internship program. On the other hand I want to share all my ups and downs in this paper while working with SIBL .

1.3 Information Sources

The information that I am sharing in this paper is mainly collected by me while working with SIBL bank Galimpur branch . Also while working there I collected some information from others , and also I gathered some information from the urban area branches because the Galimpur branch is a rural area branch and different from urban areas .

1.4 Document Overview

I shared my experience and I also shared my achievement and growth while working with SIBL bank . Briefly I shared some information about my banking app that I made for that branch and all some information that I faced while making the app. In a nutshell this paper will give a clear overview about SIBL bank and detailed information about my growth while doing this internship.

Chapter 2

Company's Profile

2.1 Company Overview

Social Islamia Bank LTD is the one of the most reputed banks in Bangladesh . They follow the Islamic sharia . It has the most suitable working environment throughout Bangladesh . As I was born and grew up in Dhaka city I do not have any idea about the working place in rural areas . I got a chance to do my internship in the Galimpur branch as this is a rural area branch. Their mission and vision is so different . It is very much fun to work in this branch . With 2 holidays every week this bank has a flexible work time schedule and work environment . Everyone in this branch is very much friendly and helpful . This branch also follows a user centric leave system, if anyone needs a day off from work he or she can submit an application to manager or operation manager via email and it's done . In daily office life Galimpur branch provides many facilities unlimited tea, coffee, emergency first aid or medicine. They also provide the lunch as a rural area branch. It is most important that you can get fresh vegetables and fish for your lunch. There is also a break time where you can enjoy the natural view of Galimpur. Every year this branch arranges a picnic inside Dhaka for 2 days to the tourist place of Bangladesh which helps the employee to create a good bonding with their colleagues and have a full refreshment. This branch has a different dedicated section for completing all the tasks. It has a dedicated marketing team who goes outside to the area everyday and tells people about the facilities of this bank and branch. It has a It team to handle all the IT related problems that the branch faces while using their software. This Galimpur branch is an employee and customer centric branch who believes that by improving the employees life can improve the work of that branch it believes if the employee can do better day by day the branch can improve itself and also by gaining customer trust the branch can grow up .Everyone can expose their feeling=gs through meeting what kind of problem are they facing and what can they do for improvement.

2.2 First of joining SIBL

I was very much excited to visit SIBL Galimpur branch as it is outside Dhaka and I was never visit that area before I went there with my industrial supervisor sir MD.Jahangir Alam as for the first time I will not be able to get the place properly he helped me a lot he wait for me at Babu Bazar bridge I go there and join with him I was surprised when I see not only me including me he always give lift to the

5 employes to his car who stay in Dhaka he drive his own car I never see this much helpful senior in my life . When I went there he introduced me to everyone and here is another surprise. Everyone calls me ma'am there yes there is no senior junior barrier there everyone calls each other sir ma'am there . On the first day I saw another amazing thing, that everyone does their lunch together, not only that they share their lunch with each other. What a friendly environment it was that also in zohar namaz time boys pray together and for girls there is a separate room. You can take a tea break there if you are feeling sleepy and the nature and the environment of the outside office is mesmerizing . On the first day of office our operation manager ma'am Soniya took me out to visit the village . I was so happy that day that I am going to have a special journey of six months with this amazing people and friendly environment .

2.3 Customer Overview

The customers are mainly farmers, small business holders and women who want to start a new small business on their own. As they are rural people they are not much educated and do not know enough about technology and also they do not understand the facilities that much properly. I learned the most important thing from there: how much patience do the employees have over there. They deal with the customers very calmly and take as much time to make the customer understand the facilities they want. Here I learned that I can get different types of customers in my life but I have to calm down and give as much priority I can give to my customers cause customers are the main thing for the company otherwise without customers a company is nothing .

Chapter 3

Workplace Details

3.1 My Responsibilities

In the first few days I was not assigned to any particular tasks . I roam around and observe my colleagues how they work, what kind of problems they face during their work time, how they communicate with their customers and also how they communicate with each other . First 2 weeks I suffer a lot because I can not found any work and they told me to do something by my own so one day by the grace of almighty Allah I saw they were sending gift to one of their most important customer on his birthday also he is a politically powerful person in that area that day I went to my manager and asked him why are you not sending birthday gifts to other customers or to that customer who are not that much famous or from a very simple family then my manager sir told me that it is too tough to find out everyone's birthday so I offered him if I can make an app that will give notification of their customers birthday he became very much happy but I have represent all kind of benefits that why It will be very much beneficial for that branch because they have spend a good amount to buy gifts for every customer . from that day my real work began. I give several presentations and after all the confirmation I start working on the app.

3.2 Communication

They have one group in messenger and one group in whatsapp so if there is any problem or any update information they share it there or our manager sir or operation manager ma'am send us an email. As everyone has to go to the office every day so the communication is very much easy with each other and if tere is any serious issue we are totally free to call our seniors after office time also .

3.3 Remote office or proxy

As a bank there is no option to do remote office we have to join the office everyday and do our work but I can say as we have very much friendly and helpful seniors if anyone is ill he or she get the opportunity to control his or her from home as much as they can also they almost every employee are very much helpful there is a option to give proxy of their work . For example I have an infection in my eye which is a

fungal infection. I almost lost my right eye vision and my university faculties also know my condition. I get the opportunity to work from home and take rest and develop my app. .

3.4 Work space facilities

3.4.1 Unlimited coffee or tea

You can get unlimited coffee or tea there also there is an option to make your own tea or coffee as you want and there are some cabinets where you can keep your own coffee and tea making things . I am adding this part because for an employee it is very much important to have refreshment .

3.4.2 Lunch facilities

As this branch is in a rural area the plus point of this branch is that we are getting our lunch every day and the food is made with fresh products . I saw that farmers are selling their fresh vegetables every day to the branch and also we get so many gifts from the farmers . The fishes are coming directly from the one or river no preservation . Also we get fresh milk for our tea and coffee . The lunch tastes so much different and we can never get the taste in the urban area.

3.4.3 Outdoor refreshment

The nature around the branch is so beautiful. You can enjoy your break time which every employee gets after lunch. Turn by turn, go outside, sit on the bank of the river and also can enjoy the fresh air which is impossible in our Dhaka city .

3.4.4 Birthday celebration

When I join to the branch I saw two of my colleagues which birthday had been celebrated with the help of our manager sir and most surprisingly I am the most junior one in the branch and not a permanent employee I am an intern there they celebrate my birthday also and they gave surprise by writing my nickname on the cake . I cried out because I never expected that much love from them .

3.4.5 Achievement Celebration

When our manager gets a promotion as a SAVP we give him a surprise with a great lunch that is biryani and also there is a grading system of good performers of the month who perform the great. He always gets a large chocolate bar on behalf of the branch .

3.4.6 Special treat

We always get a special treat from our seniors like when the office is finished we eat Fuska or go to the tea stall to have a special treat and the more happy thing is that one day they accept my Fuska treat which is a very special day for me.

3.4.7 Picnic outside Dhaka

I get an opportunity to enjoy a picnic with this branch in the month of January . We went to Sylhet for our picnic . We enjoyed a lot and according to me it was a great opportunity to create a great bond with all colleagues . In that picnic manager sir's family took care of me very well as I am the youngest one there and this is the first toure I enjoyed without my family even though I shared a room with our manager sir's daughter . As I was the youngest one I made a great bond with the children of my colleagues. I am sharing some pictures here .

3.4.8 Conclusion

When I heard about that if I want to join SIBL bank for my internship I have to do it in a rural area branch that is Galimpur branch I was afraid but when I join I find that it is a employee friendly branch and here is no chance to be bored you can do your work with refreshment and you will get a lot of opportunity to learn many things .



Figure 3.1: Hangout With Colleagues

Chapter 4

Methodology

4.1 Design

The design process for the Banking App project involves several stages that will ensure the creation of a user-friendly, efficient, and visually appealing app. The design process includes the following steps:

Understanding the user's needs: Before designing the app, it is essential to understand the user's requirements, preferences, and expectations. This can be achieved through user research, surveys, and feedback.

Creating wireframes: A wireframe is a basic visual representation of the app's layout and functionality. This step involves creating a blueprint of the app's screens, buttons, icons, and menus.

Designing the user interface: The user interface design involves creating the visual components of the app, including color schemes, typography, iconography, and graphic elements. The design should align with the app's goals and user needs.

Creating prototypes: Prototyping involves creating a functional model of the app to test its usability, functionality, and user experience. This step helps to identify potential issues and areas for improvement.

Testing and refining: The app is tested thoroughly to ensure it meets the design objectives and user requirements. The design team will make any necessary changes and improvements to the app based on user feedback and testing results.

The technology used in building the app includes Java programming language, Android Studio development environment, Firebase for storing user data, and SMS API for sending birthday messages to users. Java is a versatile language that offers numerous features, including object-oriented programming, platform independence, and memory management. Android Studio provides a comprehensive set of tools for developing Android apps, including an emulator, debugging tools, and code editor. Firebase provides a scalable and secure cloud-based database for storing user data, including user details and user messages. SMS API provides a simple and convenient way to send messages to users directly from the app.

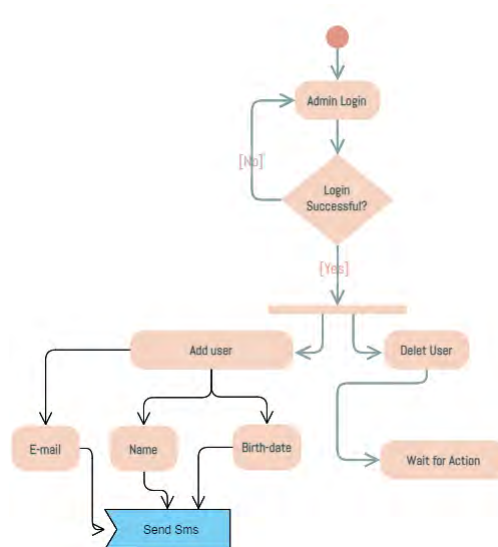


Figure 4.1: Activity Diagram

The design process for the Banking App project involves understanding user needs, creating wireframes, designing the user interface, creating prototypes, testing, and refining. The use of Java, Android Studio, Firebase, and SMS API ensures that the app is efficient, user-friendly, and secure.

Moreover, In the case of the Banking App, the class diagram would include the following classes:

- Admin - representing the administrator of the app
- User - representing the users of the banking app
- Database - representing the Firebase database used to store user information
- Message - representing the SMS message sent to users on their birthday
- GUI - representing the graphical user interface of the app
- Controller - representing the code that controls the interaction between the GUI and the rest of the system.

The relationships between these classes would be as follows:

- Admin would have a one-to-many relationship with User, as they can add multiple users to the system.
- Users would have a one-to-one relationship with Database, as each user's information is stored in the database.
- Message would have a one-to-many relationship with User, as each message is sent to multiple users on their birthday.
- GUI would have a one-to-one relationship with Controller, as the controller handles user input from the GUI.
- Controller would have a one-to-one relationship with Database and Message, as it retrieves user information from the database and sends messages on their birthdays.

4.2 Development

The Banking App will be built using Java language, Android Studio, and Firebase database. The process of building the app can be divided into several stages:

- Requirement gathering: The first step in building any software is to gather the requirements. In this stage, we will identify the features of the app, user requirements, and other important aspects.
- Design: In this stage, we will create a design for the app. We will create wireframes and mockups of the app screens. We will also finalize the color scheme, fonts, and other design elements.

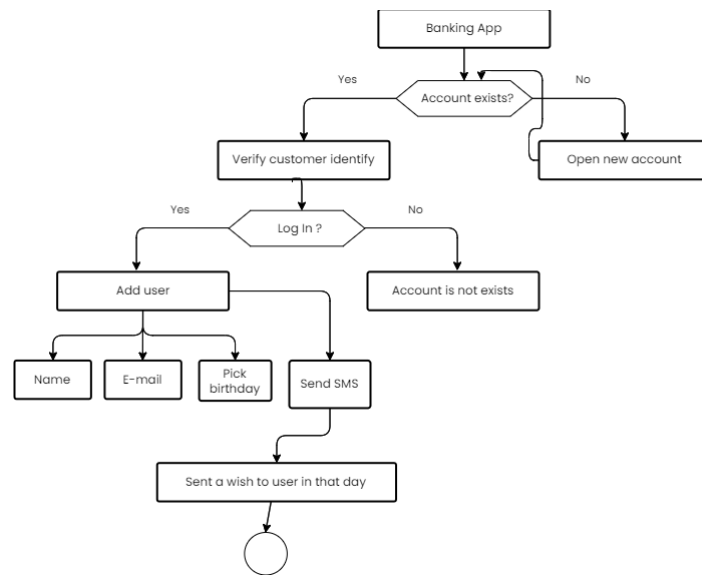


Figure 4.2: Project Creation Flow chart

- Development: In this stage, we will start the actual development of the app. We will use Android Studio to write the code for the app. We will also use Firebase to create the database and write the code to interact with it.
- Development: In this stage, we will start the actual development of the app. We will use Android Studio to write the code for the app. We will also use Firebase to create the database and write the code to interact with it.
- Deployment: In this stage, we will deploy the app to the Google Play Store. We will also set up the Firebase Cloud Messaging service to enable the app to send SMS messages to users.

The following technologies will be used to build the Banking App:

- Java: Java is a programming language that is widely used for developing Android apps. It is a high-level language that is easy to learn and has many features that make it ideal for mobile app development.
- Android Studio: Android Studio is the official Integrated Development Environment (IDE) for developing Android apps. It is a powerful tool that provides a rich set of features for designing, developing, and testing Android apps.

- **Firebase:** Firebase is a mobile and web application development platform that provides a cloud-based backend as a service (BaaS). It includes a range of features that enable developers to build high-quality apps quickly and easily, such as authentication, cloud storage, and real-time database.
- **SMS API:** We will use an SMS API to send SMS messages to users. There are many SMS APIs available, such as Twilio and Nexmo, that provide easy-to-use APIs for sending SMS messages. We will choose an API that meets our requirements and integrate it with the app.

In conclusion, the process of building the Banking App will involve requirement gathering, design, development, testing, and deployment. We will use Java, Android Studio, Firebase, and an SMS API to build the app. By following this process, I can ensure that the app is of high quality, meets all the requirements, and is delivered on time.

4.3 Result

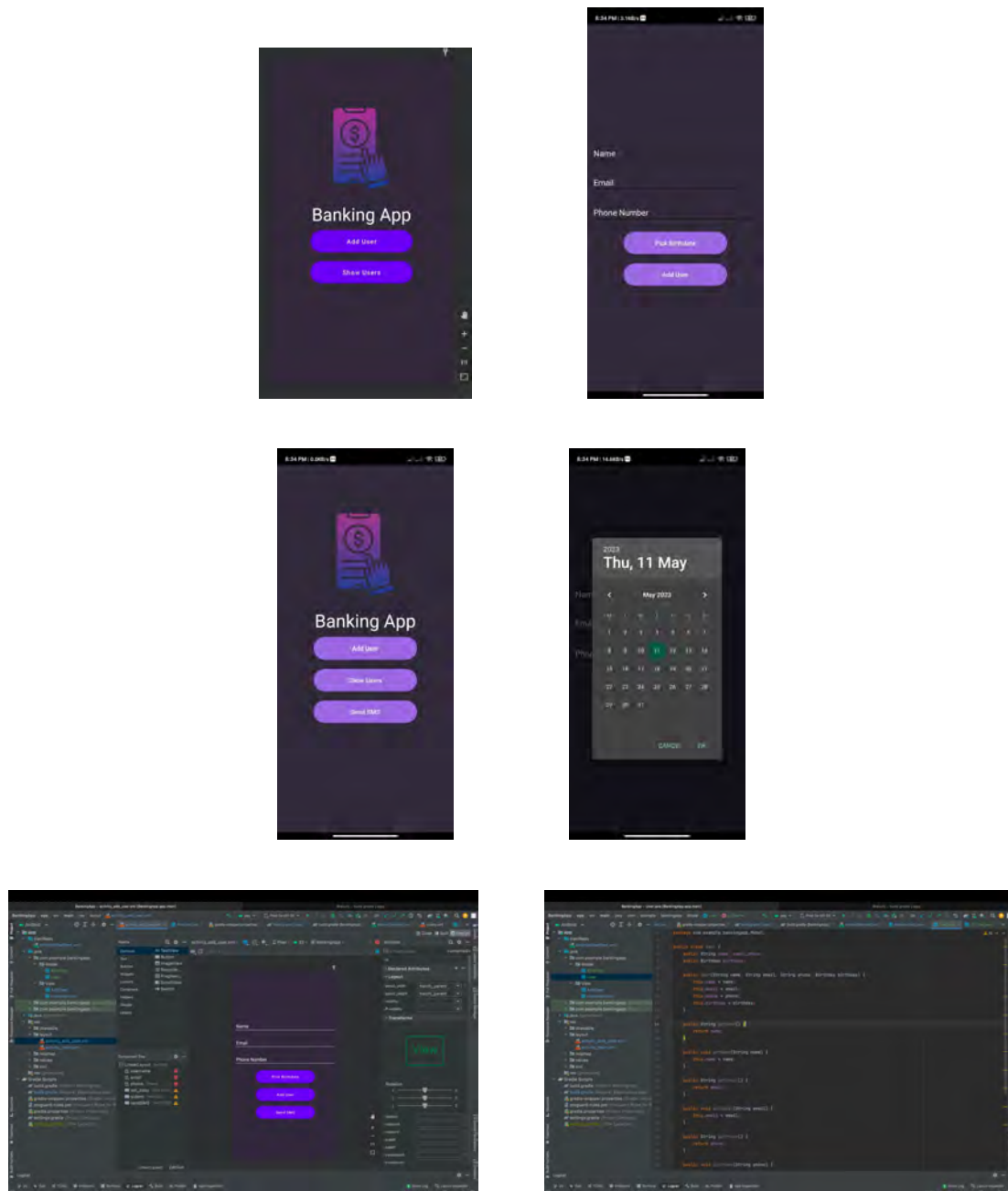


Figure 4.3: Working Update

Here is a working update of the App making. The preliminary working mechanism of the Banking App project involves the use of Java language and Android Studio to develop an Android app that enables an admin to add users, view the list of users, and send birthday messages to users via SMS. The app uses Firebase database to store user information and the SMS API to send messages. The app has been designed using a software engineering approach and follows the Object-Oriented Design principles. The class diagram of the app includes classes such as User, Admin, and SMS, which are used to model the relationships between the various components of the app. The preliminary working update of the project has shown promising

results, with the app successfully adding users to the database and sending birthday messages to users. Further testing and improvements will be made to ensure the app functions efficiently and effectively.

Chapter 5

Growth

5.1 Professional Growth

5.1.1 Office Environment

Before joining SIBL I did not have any idea about the professional environment. After joining the Galimpur branch I gathered the experience of a professional office environment .

5.1.2 Team Work

I do different type of team work in Brac university like giving presentation or doing project together in different courses but I never do any kind of team work in an office environment so when I try to learn about marketing I went outside the office with my team and by visiting with them I learn how to work as a team professionally and how to communicate in a team so that we can maintain a mutual understanding and help each other without any clash .

5.2 Technical Growth

After joining my internship I learned many new things. I use many different types of technical things here that I did not get a chance to do in my university . Now I am confident enough that I can apply all the things in my future work .



5.2.1 Git

I learn a little bit about github when I am doing my CSE 470 course but here in my internship when I am making the app I use the it by my own I learn many things how to use git properly and I am success to use that properly now I am confident enough to use this technology properly in my future work as well .

5.2.2 Full-Stack Development

During my internship, I had hands-on experience in full-stack development. I gained proficiency in front-end technologies such as HTML, CSS, and JavaScript, enabling me to develop user-friendly and responsive web interfaces. Additionally, I acquired back-end development skills using technologies such as Java and Node.js, allowing me to handle server-side logic and database management effectively.

5.2.3 Database Management

Working at SIBL Bank exposed me to various database management systems, including Oracle and MySQL. I acquired essential skills in writing efficient SQL queries, designing database schemas, and implementing data integrity constraints. This experience enhanced my understanding of data management practices and their crucial role in developing robust software applications.

5.2.4 Web Application Security

Security is a vital aspect of modern software development. Throughout my internship, I actively participated in identifying potential security vulnerabilities and implementing security measures to safeguard the bank's web applications. I gained knowledge of security best practices, such as input validation, authentication mechanisms, and secure data transmission, ensuring the confidentiality and integrity of sensitive information.

5.2.5 Agile Development Methodologies

SIBL Bank follows agile development methodologies, such as Scrum. As part of the development team, I learned to work in an agile environment, collaborating with cross-functional teams and participating in daily stand-up meetings, sprint planning, and retrospectives. This experience fostered effective communication, time management, and adaptability skills, enabling me to deliver high-quality software within tight deadlines.

5.2.6 Project Experience

Throughout my internship, I was involved in the development of a customer management system, which allowed me to apply my technical skills in a real-world setting. Working on a practical project enhanced my problem-solving abilities and provided insights into the software development life cycle, including requirements gathering, design, implementation, and deployment.

5.2.7 Documentation and Technical Writing

Throughout the internship, I was responsible for documenting the software development process, including system requirements, design decisions, and user manuals. This enhanced my technical writing skills and the ability to communicate technical concepts effectively.

5.3 Interpersonal Growth

5.3.1 Questioning

In my university life I was always afraid of questioning my faculty members. I always try to cover up my lack of study from my friends or seniors and if I do not have that chance after that I ask my faculty for help . But in professional life it is quite impossible. I learned almost all of my things by questioning my senior colleagues so here I learn about how to do logical questions and learn from that .

5.3.2 Logical Argument

In my internship I learned how to present my idea with great logic . In my university life I have to give so many presentation there some of my logics are right and some are wrong here m faculty cut my marks for my wrong logic and I get a chance to learn it newly but in internship to get a new chance it is impossible here I have to represent my idea and give a presentation with great and right logic . When I give the proposal of my app that I want to make an app for this branch I have to represent how the branch will be beneficial with that and with a great presentation I succeed and get the opportunity to make that app .

Chapter 6

Conclusion

6.1 Conclusion

Throughout our four years of university life we learn all the theoretical things. We do not get that much opportunity to apply that in our real life. According to me, learning theory is something boring. Sometimes we memorize it or sometimes we do that work without knowing properly or just for marks . But in internship you have to apply practically all the things that you learn from your university courses . Here in a practical office life I learn everyday something new I faced so many ups and downs here I come to know what is real challenge is for example first few weeks I can not find any work or i do not have any Idea how I will start my internship . Making this app is a challenge for me on the other hand another challenging situation I have to face that was as Throughout the whole paper I shared that Galimpur is a rural area branch so that area people is not that much educated or they do not know enough about technology after making this app when the branch started to use it one day we send a gift to a customer on his birthday but actually he do not know that , that day was his birthday so when we send a gift he took it negatively and with so much anger came to our branch and said that we sent him a gift because we want to take all his money from his account so manger sir told me the app is your idea and now this is your responsibility to make that customer understood why we send him gift I can clearly remember it took me 2 hours to solve the problem . So I can clearly say that if you want to know about practical life and also if you want to know that you are eligible for corporate life or not and what kind of skills do you need to survive at a corporate level then an internship is the best option .

6.2 Recommendations

Banks like SIBL can also be a best option for a CSE department student to do internship we believe a myth that banks are suitable for internship only for BBA department student but it is true that if you want to learn something new and if you lie to take challenges banks can also be a good option for you . I will recommend SIBL bank Galimpur as a rural area branch. I got so many opportunities that were beyond my expectations so the urban area branches will be amazing so for different types of learning and experience banks are the best option .