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An Undergraduate Internship on/Project on Employee Management System

By

RAJIA SULTANA

STUDENT ID: **1821943**

SUMMER,2022

Supervisor:

Ajmiri Sabrina Khan

Lecturer

Department of Computer Science & Engineering

Independent University, Bangladesh

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

This is to certify that the report titled “Employee Management System” was completed by Rajia Sultana (ID-1821943) submitted in partial fulfillment of the requirement for the Degree of Computer Science from Independent University, Bangladesh (IUB). It has been completed under the guidance of Ajmiri Sabrina Khan (Internal Supervisor) and Dip Hasan (External Supervisor). I also certify that all my work is genuine which I have learned during my internship. All the sources of information used in this Project Report has been duly acknowledged in it.

Signature:  Date: 14-09-2022

Rajia Sultana

Name

Acknowledgement

I would like to begin with expressing my gratitude and thanking the Almighty Allah for His blessings and giving me the ability to work hard and the opportunity to complete this report.

I would like to thank my honorable faculty Ajmiri Sabrina Khan, Lecturer, Department of Computer Science Engineering, Independent University, Bangladesh, for his continuous guidance and providing advice and suggestions which helped me to complete my project and the report successfully.

I would also like to thank everyone who helped me with information, advice and suggestions for making this report. My thanks go to the Department of Computer Science and Engineering, Independent University Bangladesh for helping me to gain essential knowledge and skills during my Bachelor's in CS.

My endless thanks go to Mr. Dip Hasan, HR & Admin, Hamid Fabrics LTD for giving me the opportunity to work for HAMID FABRICS LTD, as an intern. My experience in the Hamid group was nothing but wonderful and I thoroughly enjoyed working and learning here. I would also like to thank r. Anjan Das, Head of Development, for his guidance and brilliant mentorship throughout the internship period. Finally, I would like to thank all my colleagues in Hamid Fabrics who welcomed me in their team and provided their continuous support to carry out my project and the report, it would not have been possible without them.

Finally, I would like to thank Independent University Bangladesh, and all the respected faculties and staff who were a vital part of my bachelor's program in CS. My respect and heartfelt gratitude go to my faculties and mentors who shared their knowledge with me to teach and prepare me to achieve success in my future.

Letter of Transmittal

July 2022

Ajmiri Sabrina Khan

Lecturer

Department of Computer Science & Engineering

Independent University, Bangladesh (IUB)

Bashundhara R/A, Dhaka 1229, Bangladesh

Subject: Report submission of the internship

Dear Miss,

With due respect and honor, I would like to submit my report of Internship for the completion of my Bachelor of Computer Science and Engineering degree. I prepared this report based on my internship experience in Hamid Fabrics Ltd starting from 1st of june, 2022 till date. I was assigned in the development team as a Frontend Developer intern. I successfully served my internship period in Hamid Fabrics Ltd.

In the Hamid group I worked under the supervision of Mr Dip Hasan, Head of Development. This report is based on my project in Hamid Group. I was assigned with the project employee management system, where I worked as the frontend developer with the team. My experience in Hamid Fabrics was great. The main objective of the internship is to learn and gain knowledge and enhance our skills and get the first taste of the corporate world, which I believe I have achieved by working here. I would also like to thank you, miss, for your continuous support and guidance which helped me to complete the project.

I pray and hope this report will be informative and fulfill your expectations. I have tried my best to avoid my deficiencies and hope that my report will be of satisfactory standard. I would also like to thank you again for giving me the opportunity to submit this report.

Sincerely,

Rajia Sultana

Id – 1821943

. . . . . .
Signature

Evaluation Committee

.....Sayed.....

Signature

.....Md Abu Sayed.....

Name

.....

Supervisor

Ajmiri Sabrina.....

Signature

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Name

.....

Internal Examiner

.....

Signature

.....

Name

.....Sanzar Adnan Alam.....

External Examiner

.....

Signature

.....

Name

.....

Convener

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

Abstract

Nowadays, access to the internet is widespread and simple. This calls on businesses, various platforms, and organizations to develop and go digital. This provides a fantastic opportunity for our company to Digitalize their employee management system, to develop an android app. For keeping record of working hour data of employees. Digitally assigning and completing task for the employee. Making visual reports of employee's application or contribution to the company. Making a point system to encourage employees to complete their task within a given time. Chat system to communicate between the employees. Reporting issues digitally to supervisor.

This will give an opportunity for Hamid Group to increase their employee efficiency level. Enhance their capacity to work at a higher productivity level. Which will give them a competitive edge over other textile companies. As well as provide better communication between the employees.

The article also details my internship experience at Hamid Fabrics Ltd, Bangladesh. Since its founding in 1994, The textile division of the Mahin Group (Hamid Fabrics Ltd) boasts the reputation of being the undisputed market leader in terms of quality of materials and end products. With a combined capacity of roughly 30,000,000 yards per year and a supreme commitment to quality, it has established itself as one of the most dependable players in the Bangladesh textile industry. As a front-end developer, I'm excited to collaborate with them.

The report's eight key sections discuss the project and the development process. It begins with a brief summary of the project's goals, its purpose, and the scopes of work we had at the time, which is covered in the first chapter. In the second chapter, which is devoted to the literature review, I discuss how the project relates to my bachelor's degree. Project, the third chapter, covered the planning that went into the project, including a breakdown of the time, resources, and cost to continue the development. The technique used for the project is then discussed in the fourth chapter, along with how it aided in the planning and development of the project.

The most crucial section of the report is the first chapter, "Body of the Project." Here, system analysis is thoroughly covered along with various analysis methods and illustrations. The results we got after developing and analyzing what we accomplished are covered in the following chapter, Results and analysis. The project's sustainability, social and environmental repercussions, and ethical considerations are discussed in Chapter 7. Finally, I covered the scope of future works in the last chapter along with the report's conclusion.

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Chapter 1: Introduction

1.1 Background of the Work

Hamid Fabrics Ltd is a Public Limited Company registered in Bangladesh and incorporated under the Companies Act, 1994. It manufactures premium solid-dyed and yarn-dyed fabrics for the country's 100% export oriented Ready-Made Garment (RMG) industry. Their mission is Merging the capabilities with topnotch technology to provide their stakeholders with the best possible products, services, and experiences and their vision is Create a quality benchmark in every aspect of its business Maintain and further enhance customer satisfaction in terms of quality and price Formulate a happy, motivated and skilled workforce Produce within environmental guidelines Work towards green production,

Create jobs for people and retain them with steady, controlled, and focused company growth. Contribute to the country's economic sustainability with our exports and business practices.

I have been appointed to a team of the company to develop an android app. This app is a management app of the company where employee's working hours and job working outcome can be observed. Employee's also gain points in success of their assigned task, which can be used to buy special office services. The app enables employees to communicate between them.

1.2 Objectives

- Allow employees to assign check out their entry and leaving time.
- Supervisor or manager can assign task to it's team member
- In completion of task, employees receive Special point which can be trade for office services
- Employees can send messages to each other.

1.3 Scopes

- Login Page – This page will be used by registered users to log into their account.

- Registration Page – This page will be used by new users to register their account.
- Forget Password Page – Users will be redirected to this page to enter their email if they forget their password and wish to change their password.
- Change Password Page – This page will allow the user to change their password if they forget their old password.
- Add offer Page – new offer page can be generated by the admin
- Add new task page - new task page can be generated by the admin
- Dashboard – There will be Dashboard for different types of users.
- Attendance Page– Employees can check in their entry and departure time.
- Task Page – Employees can view their task here, and in completion check the task. Manager or supervisor can assign their task to its team member
- Message Page – Employees can message each other.
- Offer Page – Lots offers are listed to be trade in with special points
- User Profile – User can view their profile email and designation – Employee.
- Contact Us Page – Customers will be able to contact the support team through the website.
- About Us Page – Customers will be able to see the information about the company.

Chapter 2: Literature review

2.1 Relationship with undergraduate studies

The topics covered in the Object-Oriented Programming course is directly related to the application's backend and frontend. Since the Mobile Application Development course was project-based, and numerous mobile application projects were completed as part of it, the topics covered in that course were very helpful in this project. Apart from project development, the mockup of the application and the relevant diagrams was required, as taught in the System Analysis and Design course. Database management course taught me how to design a database and to be linked with the frontend.

2.2 Related Works

Cats Eye and Yellow's features are comparable to those of Hamid Fabric Limited. Employees can play the tasks and based on them they will get points. Based on them they can claim different offers. Again, they can drop their leave of absence application. Similar operations will be performed by Hamid Fabric Limited, with the exception that employees would choose.

Chapter 3: Project Management and Financing

3.1 Work Breakdown Structure

Work breakdown structure (WBS) is a method for completing a complex, multi-step project. It is a method of dividing and conquering large projects to complete them more quickly and efficiently. A work breakdown structure (WBS) is intended to make a large project more manageable. Breaking it down into smaller chunks allows different team members to work on it simultaneously, resulting in higher team productivity and easier project management.

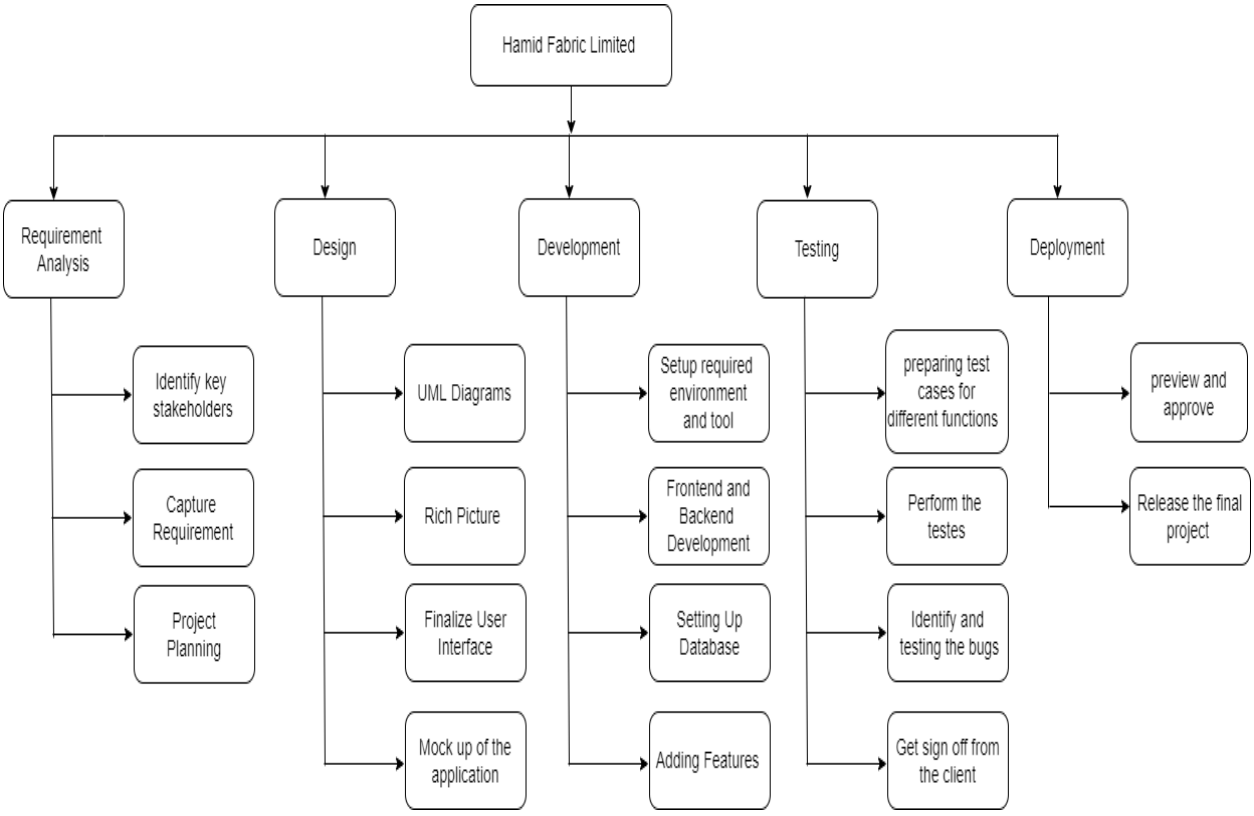


Figure 3.1: Work Breakdown Structure

3.2 Process/Activity wise Time Distribution

The time allocation for the three months project is as shown in the table. Any activity can be performed simultaneously with other activity or after the earlier one is completed.

Activity	Days	Percentage of Work
Requirement Analysis	15	13
Design	15	12
Development	50	60
Testing	12	10
Deploying	7	5
Total	99	100

Table 3.1: Activity wise Time Distribution

3.3 Gantt Chart

A Gantt chart is one of the most popular and useful methods of displaying activities (tasks or Events) against time. A list of the activities is shown on the left side of the chart, and a time scale is shown along the top. Each activity is represented by a bar, with the position and length of the bar reflecting the activity's start, duration, and end dates.

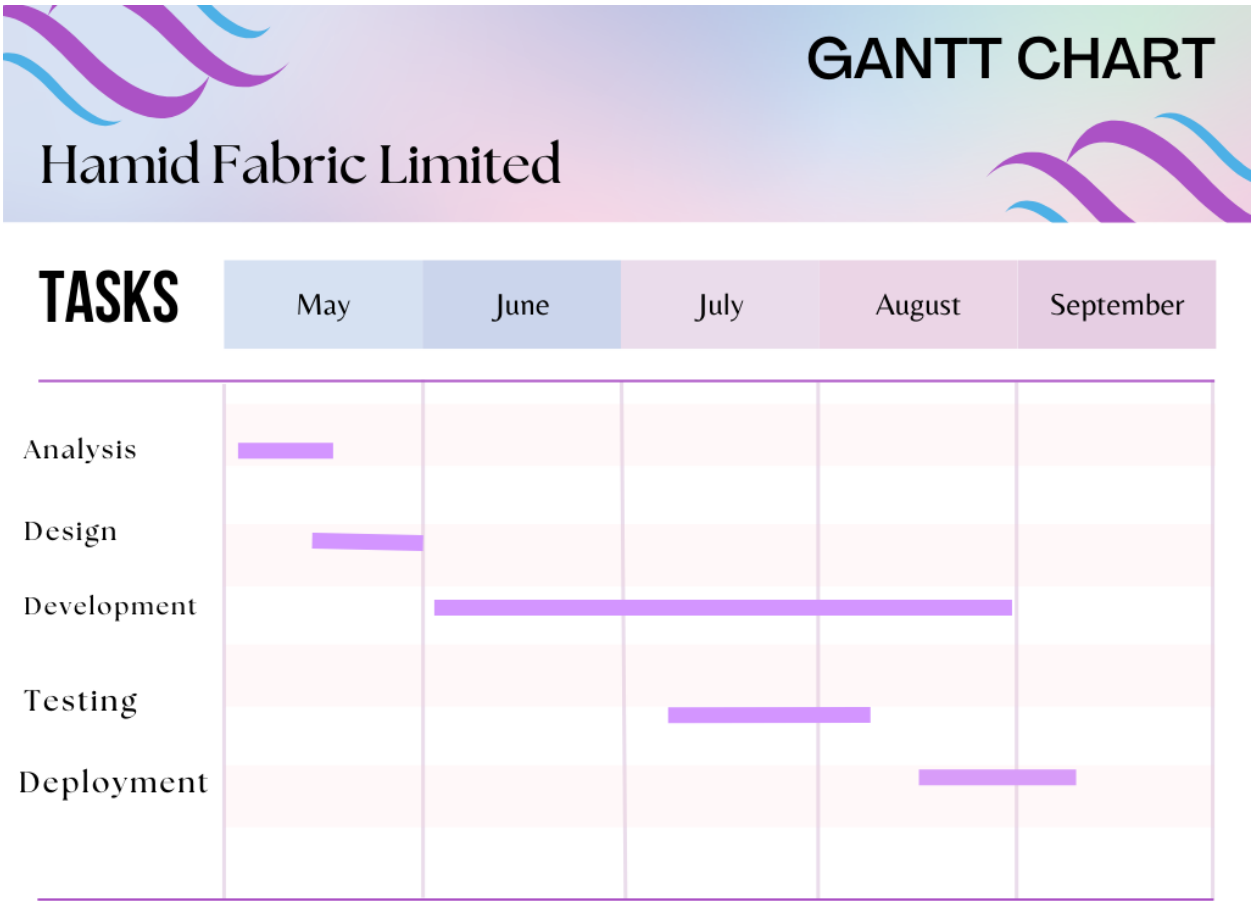


Figure-3.1: Gantt chart

3.4 Process/Resource wise Resource Allocation

- **Requirement analysis:** To complete this project, I was the sole one tasked to collect the requirements. The requirements were how the client wanted the mobile application to look. With the requirements gathered, project planning took place with the stakeholders, and it was decided how the application would look once completed.

- **Design:** The mobile application design is created during this phase to give developers an idea of how the application will look in real-time. I have been working on diagrams like Rich Picture and UML Diagrams. I made a mockup to finalize the design of the actual application before beginning the development phase. This phase entails designing the application's features and functionality using necessary diagrams and mockups.

- **Development:** The development phase is primarily concerned with the creation of the application. Since I was alone in this project, it was required for me to submit a weekly project progress report. Every weekend, a meeting was held virtually with key stakeholders of the company to discuss progress and future project planning.

- **Testing:** During this phase, the application was tested at the same time as it was being developed. It was required for me to debug at every stage of the development process when the application was being tested. The final step in this phase was to show the client the final application and obtain his approval before the phase's deadline.

- **Deployment:** As the application is almost ready and the beta version is released, it will be deployed before the deadline.

3.5 Estimated Costing

The cost is an estimate based on the company's requirements for the mobile application system.

Requirement	Costing
Salary	10000
Domain and Hosting	3000
Database	1500

Table-3.2: Estimated Costing of the project

Chapter 4: Methodology

Software Development Life Cycle is a phenomenon of designing, developing, and testing high-quality software. Every stage of a software system is reported through a chain of routers. The various ways that a software system can be developed are discussed in this research. Initially, the background and different categories of famous software life cycle models are examined. To find the most popular nowadays Software Development Life Cycle Model we analyzed some models.

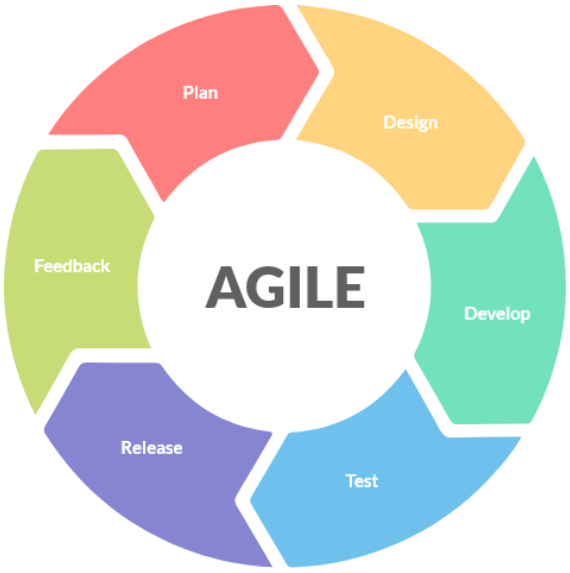


fig 4.1: Agile Process Diagram

The software is developed incrementally with rapid cycles. This means that the small incremental releases are done using the previous functionality releases. These releases are tested to observe the quality of the software. This combination of iterative and incremental development models is used for time-critical applications. The most well-known agile development currently is Extreme Programming (XP) and another method is scrum, crystal Methodology-Mobile-D.

4.1 Why this methodology for this project?

Agile Model is the Software Development Lifecycle Model that is most popular nowadays. Because its Modification is easier than another model. Its development approach is adaptive and budget friendly. Clear Requirement Specifications Change incrementally and its loom highly gives customer satisfaction and incremental development. Also, its Speed to change and predictability is high.

4.2 How did we use this methodology?

We did a requirement analysis the moment we started working on the project. We then proceeded to the design process, which was the following stage. We put some effort into drawing some schematics and a mockup of the application's user interface. We then went on to the project development stage after the design phase. We contributed to the application's front-end and back-end code. We ran the project's test cases concurrently with this development phase. The deployment of the project was the last phase. The steps of the project were carried out in a linear and sequential manner, with one stage ending before the start of the next.

Chapter 5: Body of the Project

5.1 Work Description

I worked on this project as a developer, and I oversaw both the front end and the back end of the application. The front-end was made using xml, and the back end was written in Java because the program was designed in Android studio. Firebase was used to store the data for the entire project because of its compatibility with Android Studio and simplicity of integration with the project. All tasks had to be finished within a specified amount of time, and we had to present our work to the project manager when each task or section of the project was finished.

5.2 System Analysis

5.2.1 Six Element Analysis

Process	Human	Non-Hardware	Computing Hardware	Software	Database	Communication
Login	Admin, Employee	N/A	Mobile	Mobile Application	Firebase	Internet
View Users	Admin	N/A	Mobile	Mobile Application	Firebase	Internet
Play Task	Customer	N/A	Mobile	Mobile Application	Firebase	Internet
Attendance	Customer	N/A	Mobile	Mobile Application	Firebase	Internet
Offer claim	Customer	N/A	Mobile	Mobile Application	Firebase	Internet
Add Users	Admin	N/A	Mobile	Mobile Application	Firebase	Internet
Add Task	Admin	N/A	Mobile	Mobile Application	Firebase	Internet

Table-5.1.1:six element analysis

5.3 System Design

5.3.1 Rich Picture

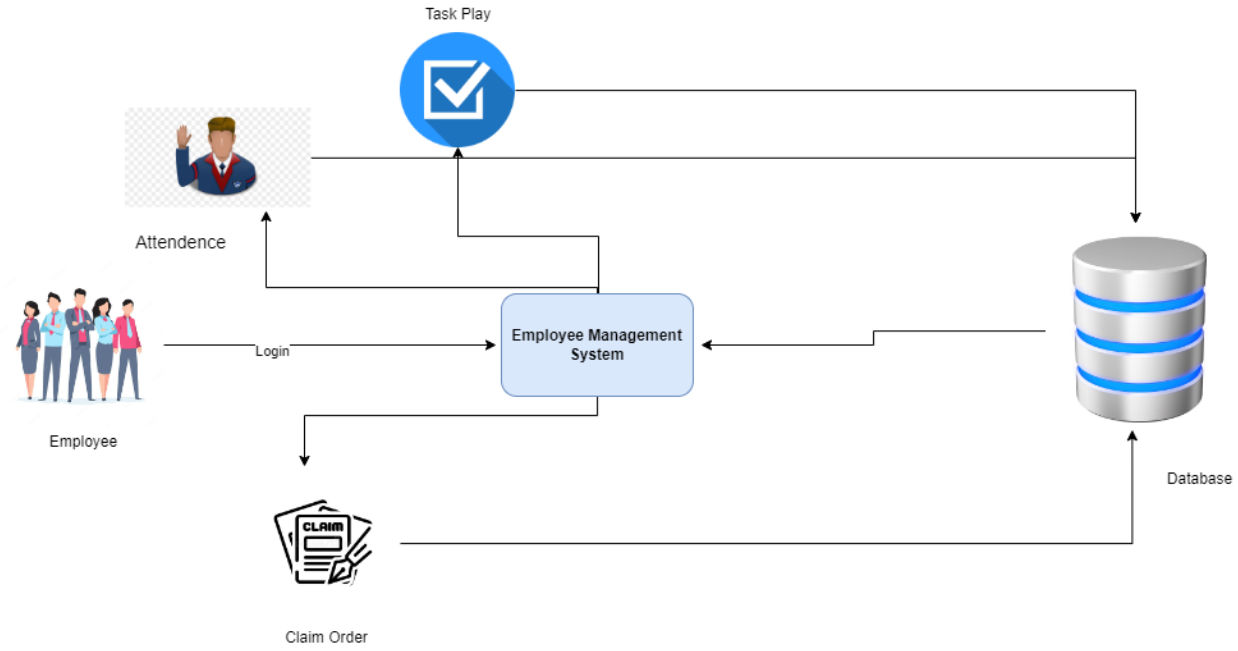


Figure-5.1 Rich Picture

5.3.2 UML Diagrams

Activity Diagram

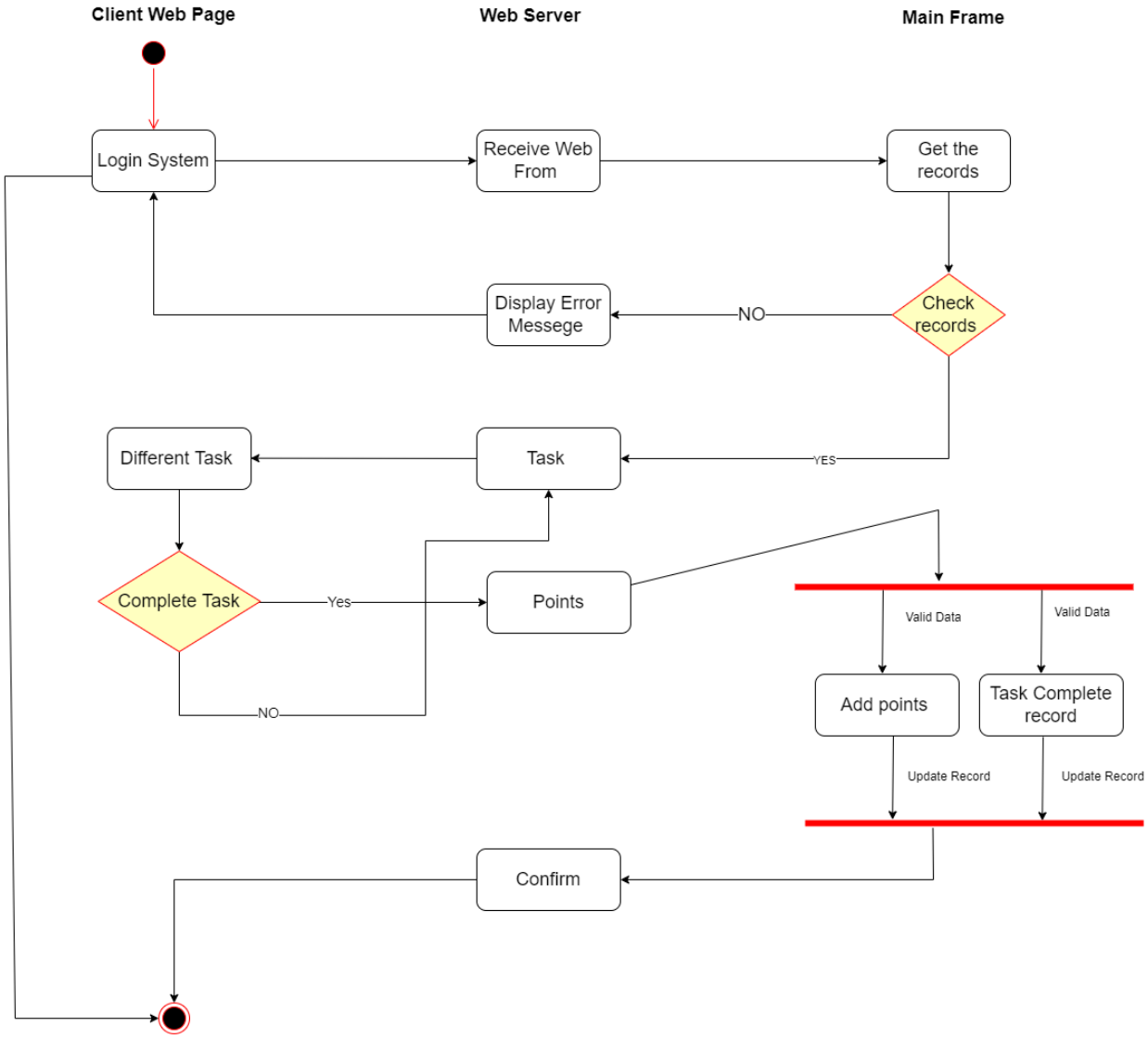


Figure-5.2 Activity Diagram 1

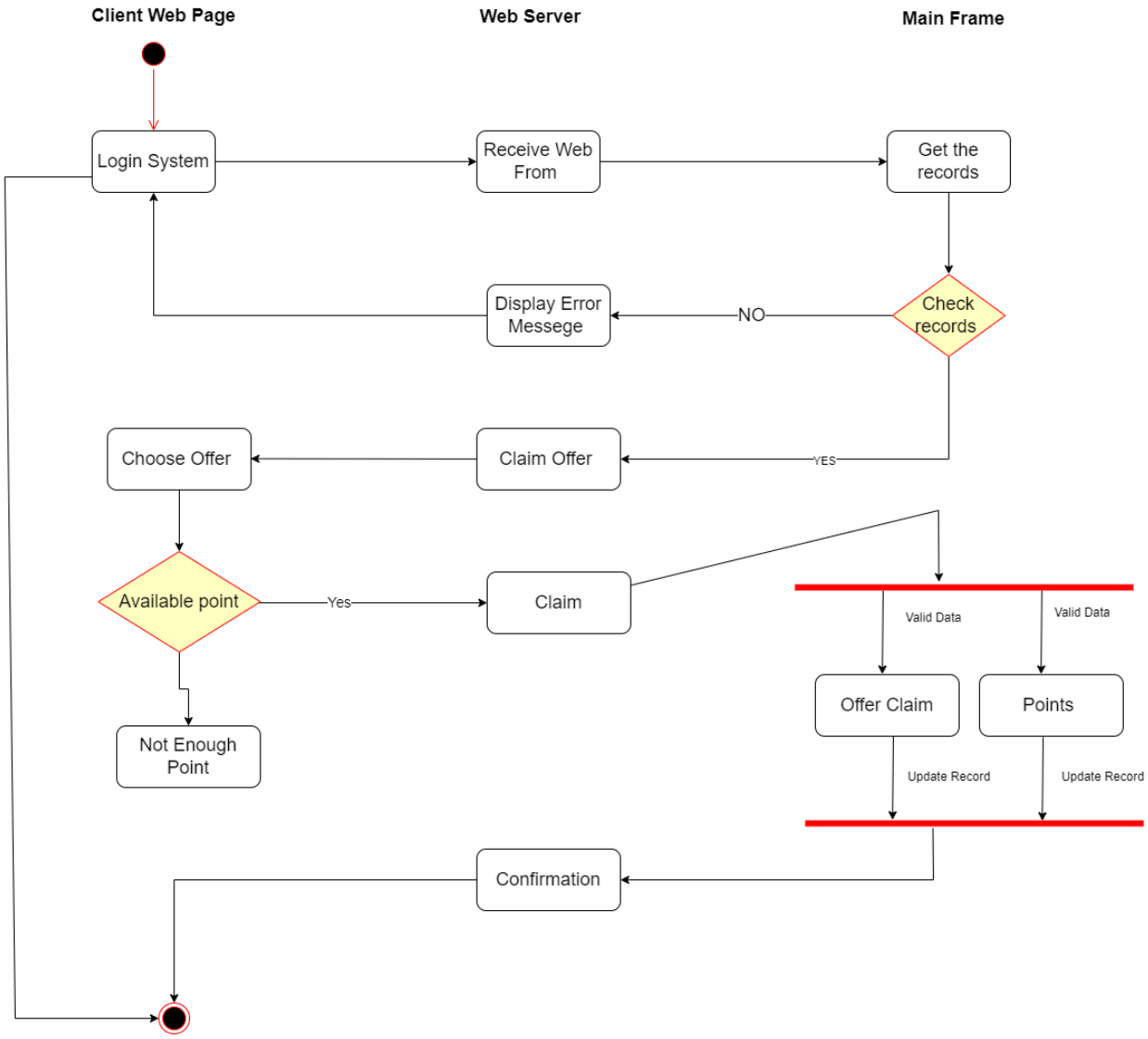


Figure-5.3 Activity Diagram 2

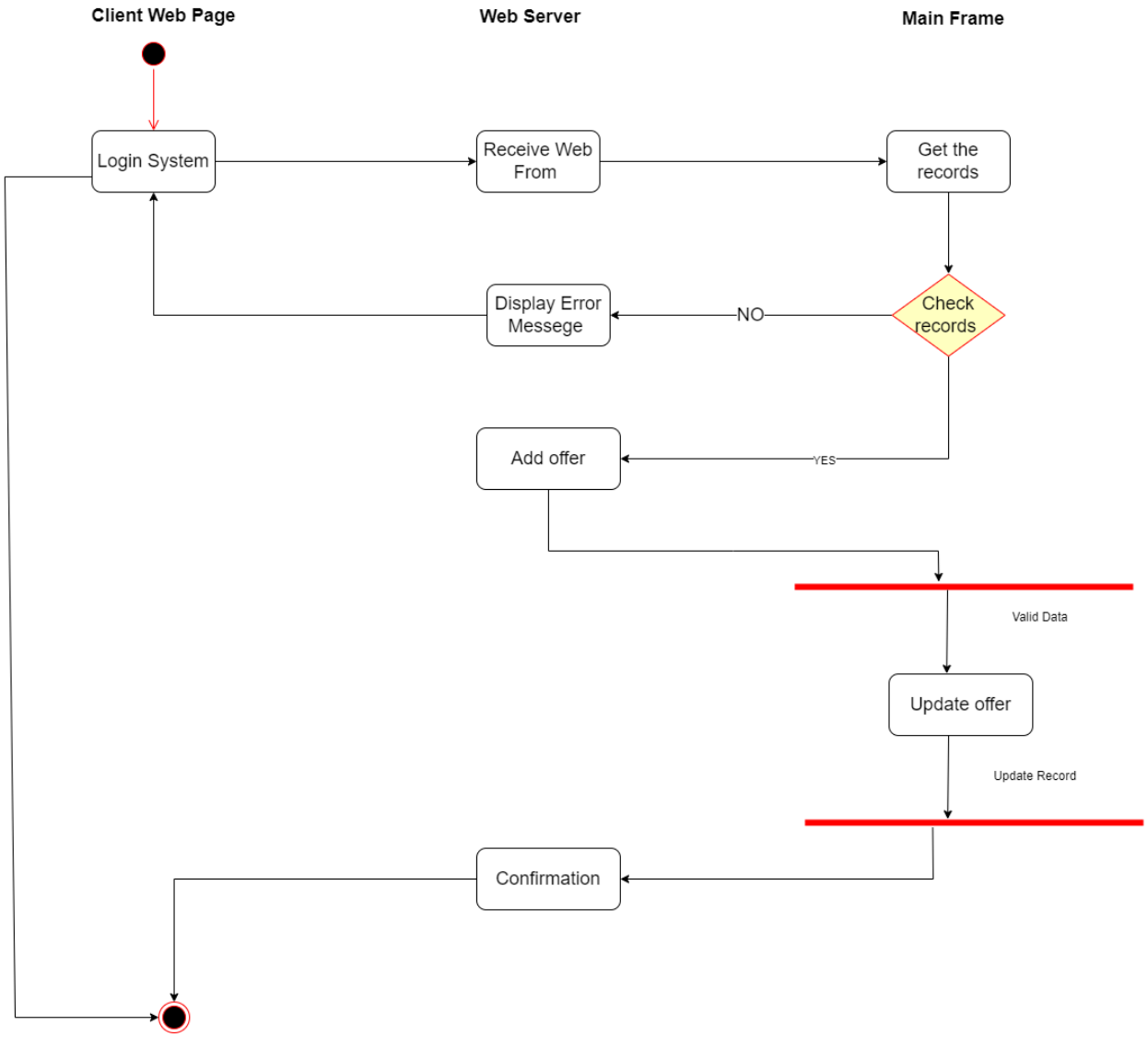


Figure-5.4 Activity Diagram 3

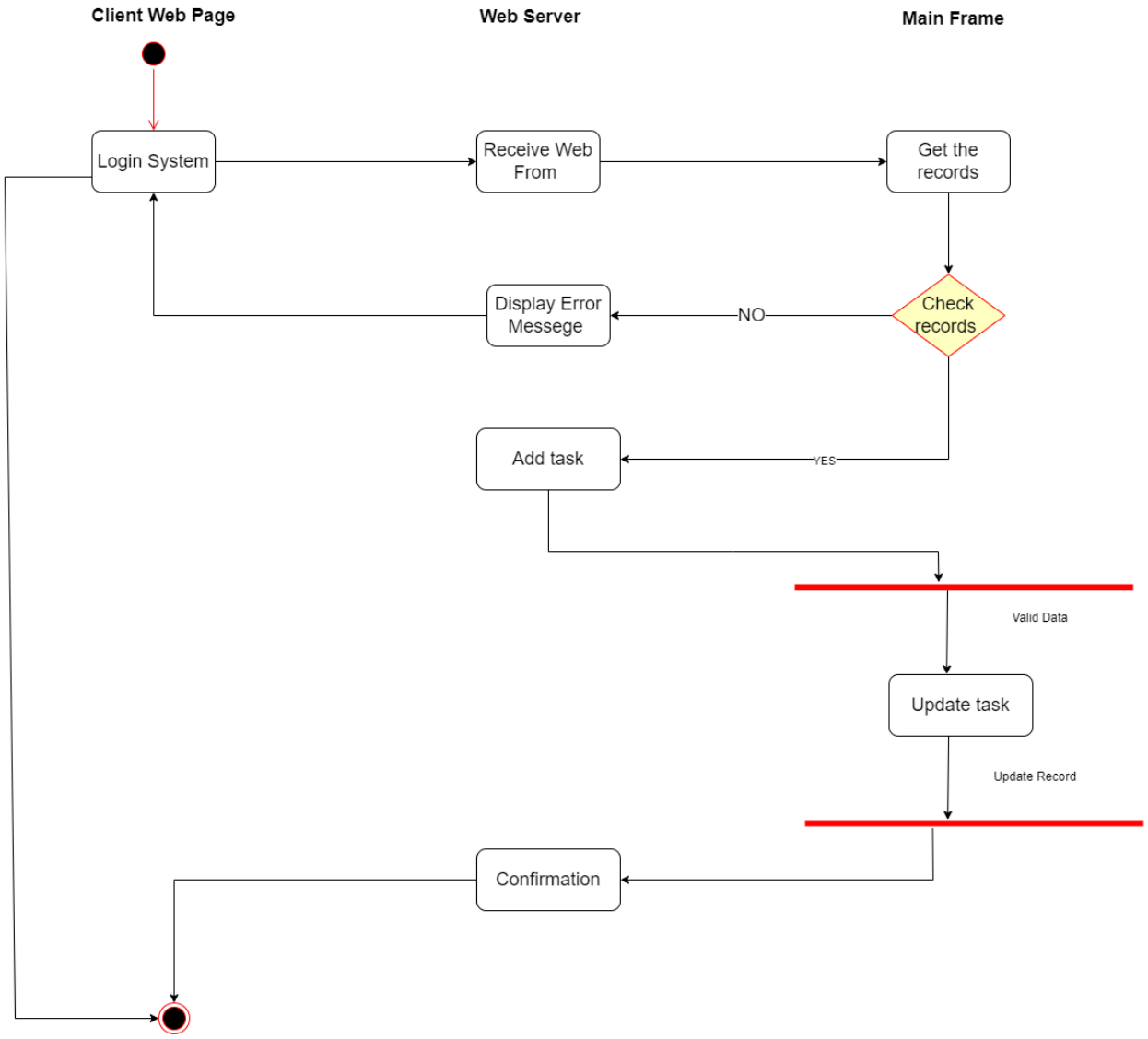


Figure-5.5 Activity Diagram 4

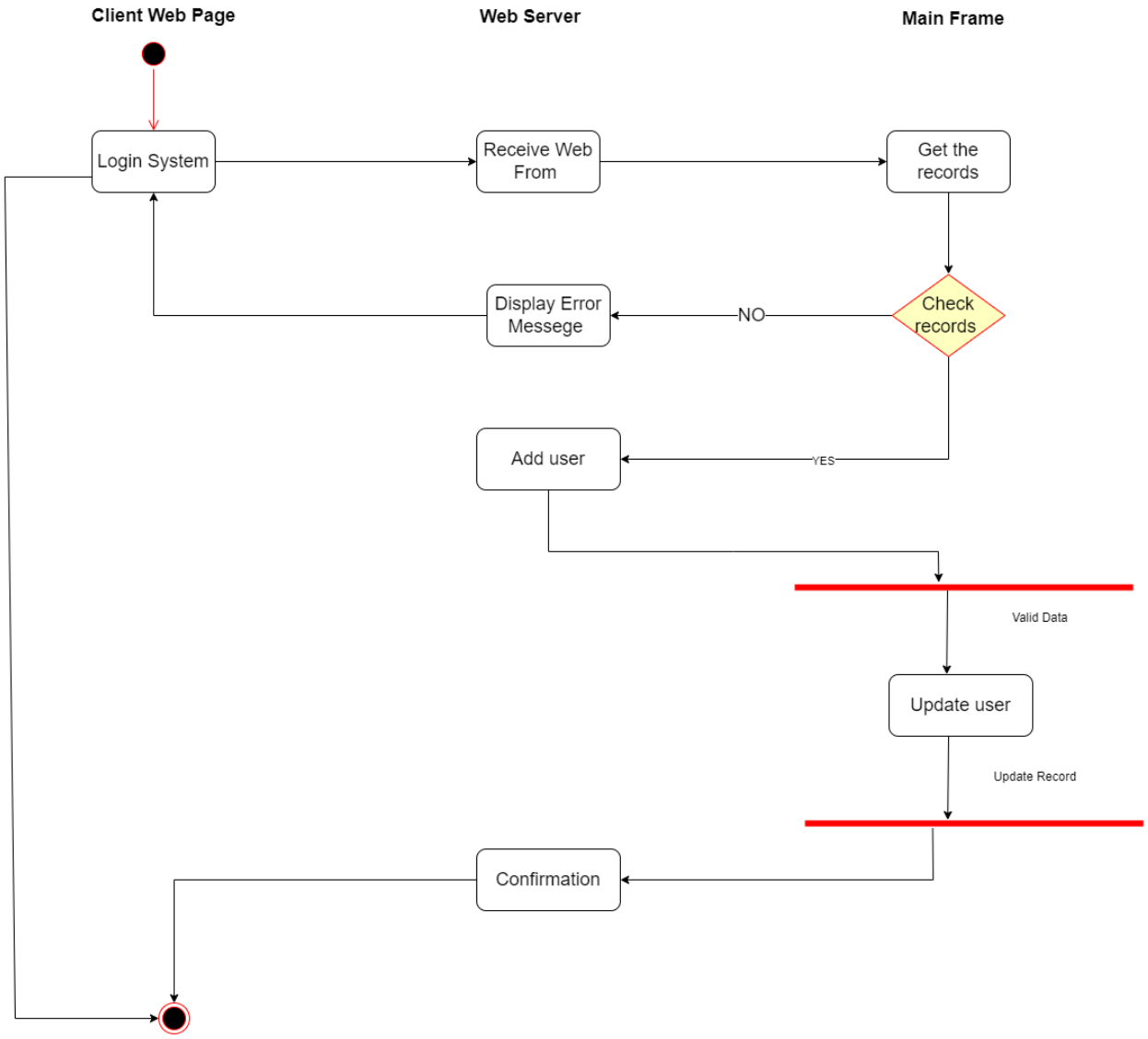


Figure-5.6 Activity Diagram 5

Entity Relations Diagram

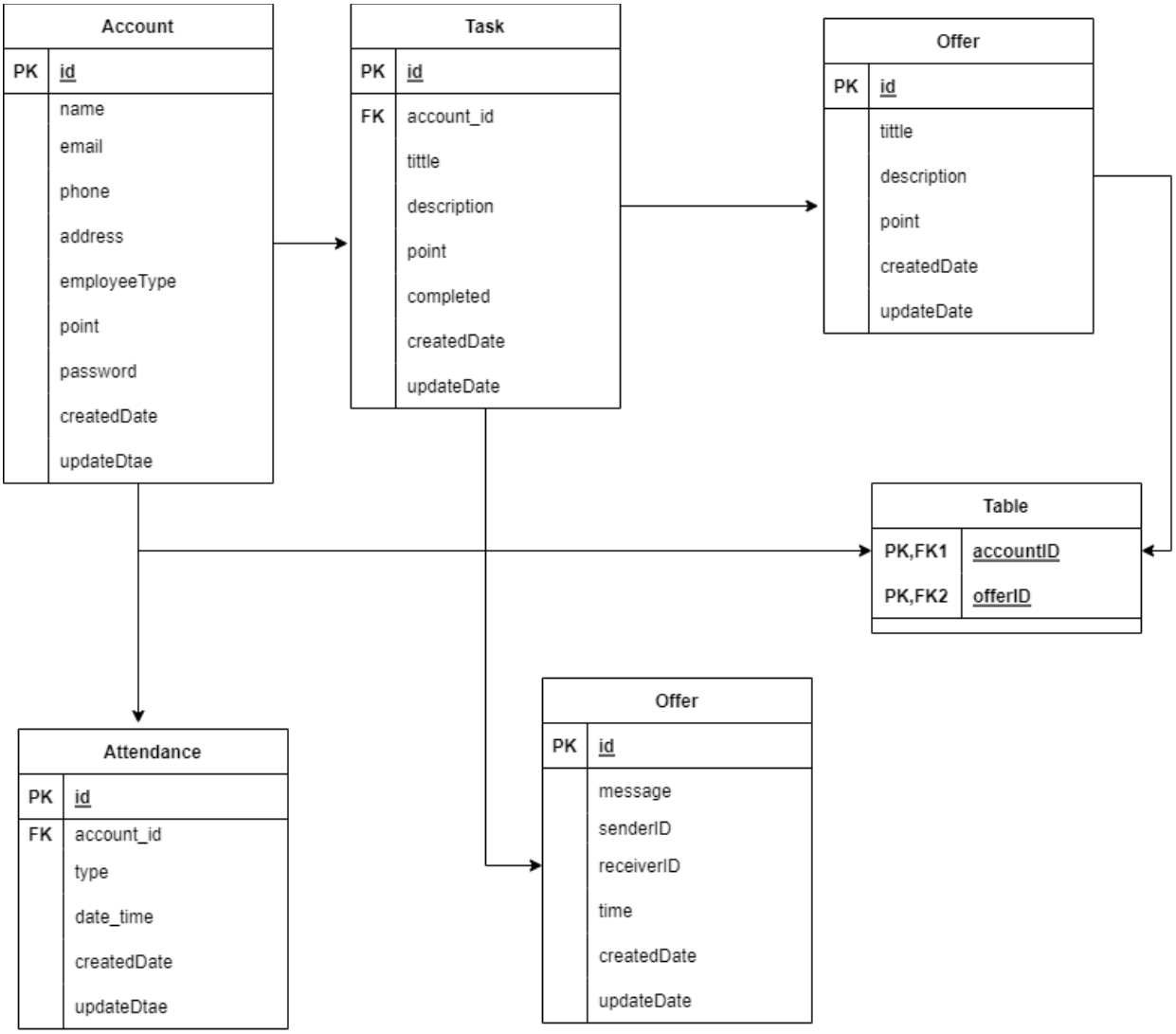


Figure-5.7 Entity Relationship Diagram

Use Case Diagram

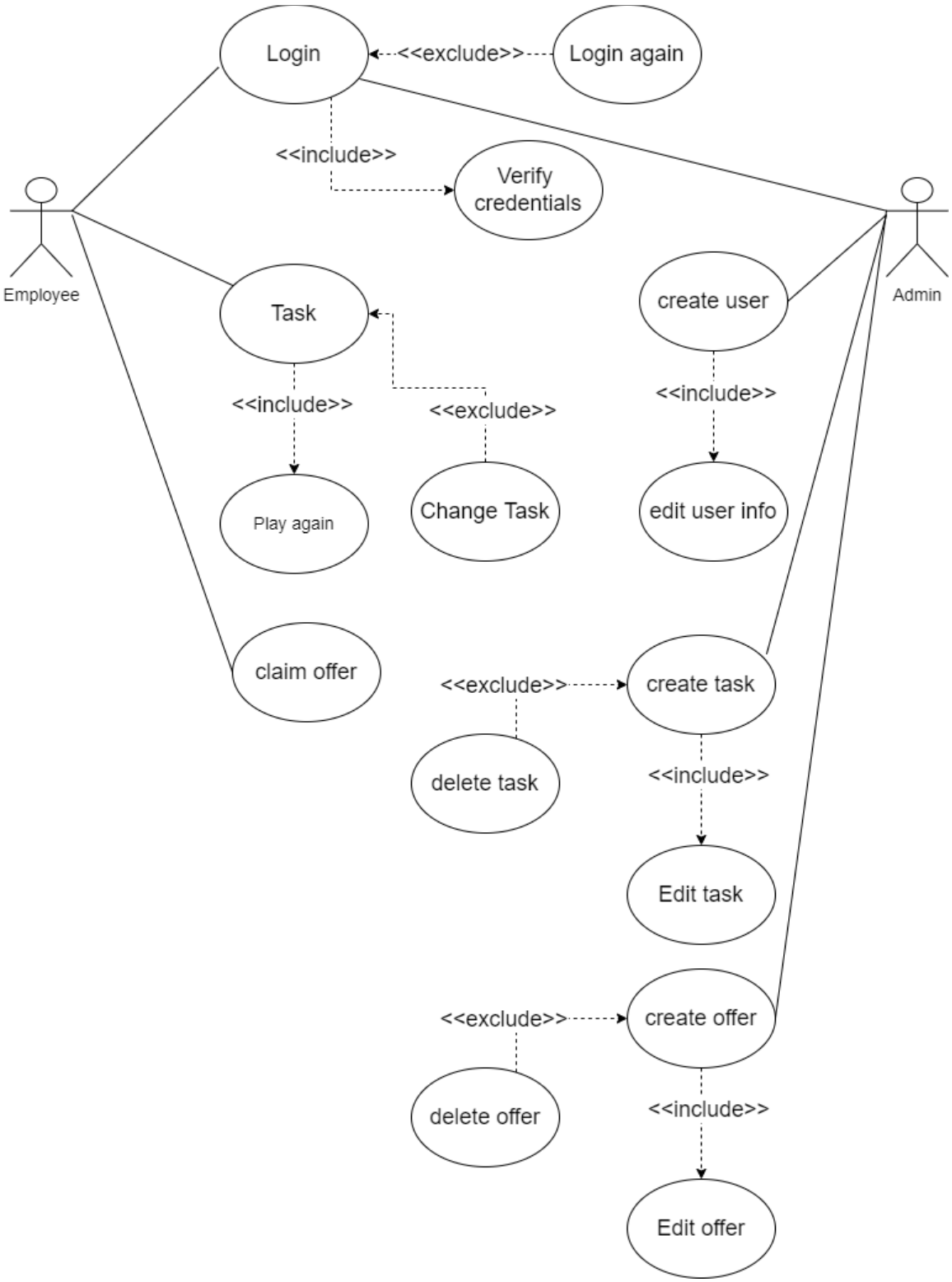


Figure-5.8 Use Case Diagram

5.4 Product Features

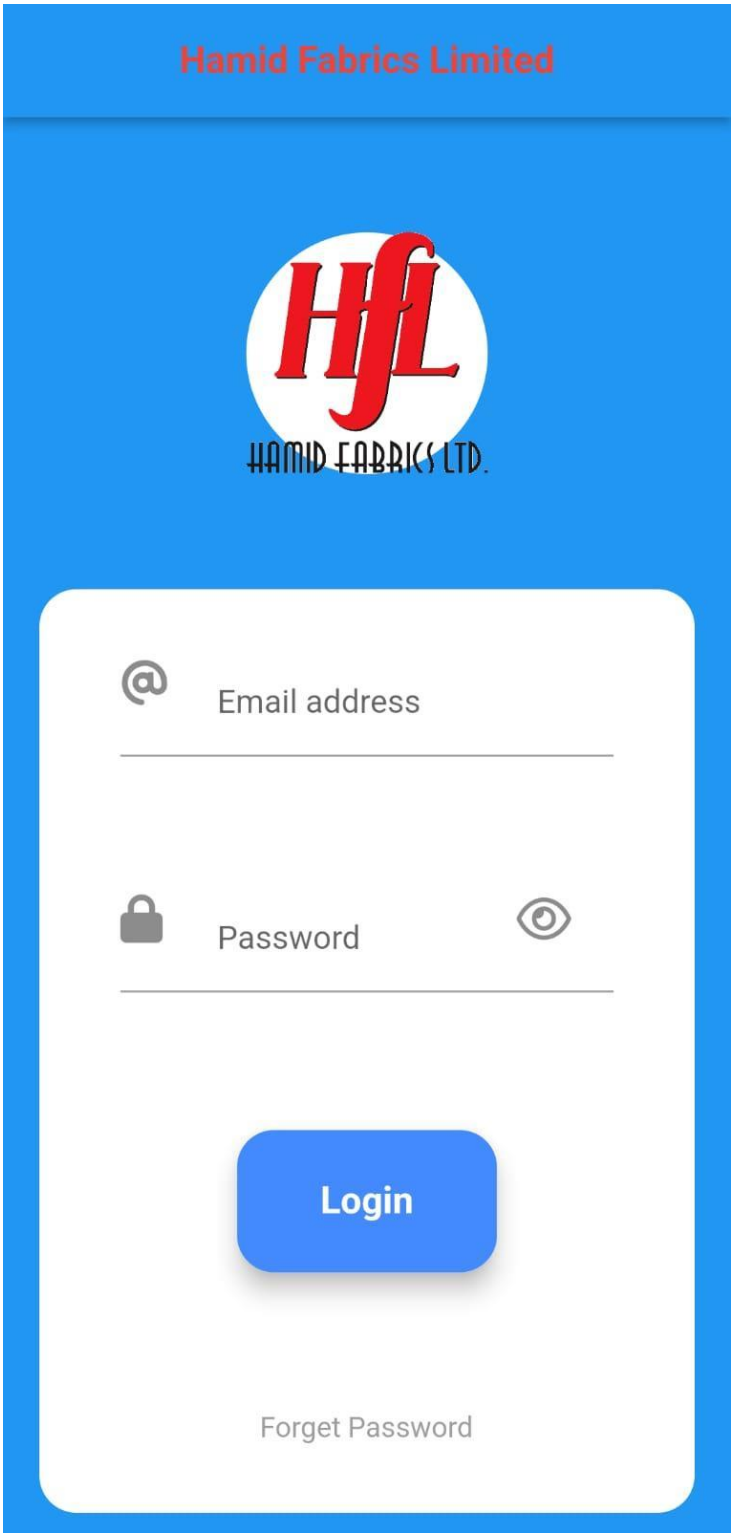


Figure-5.9 Login Page

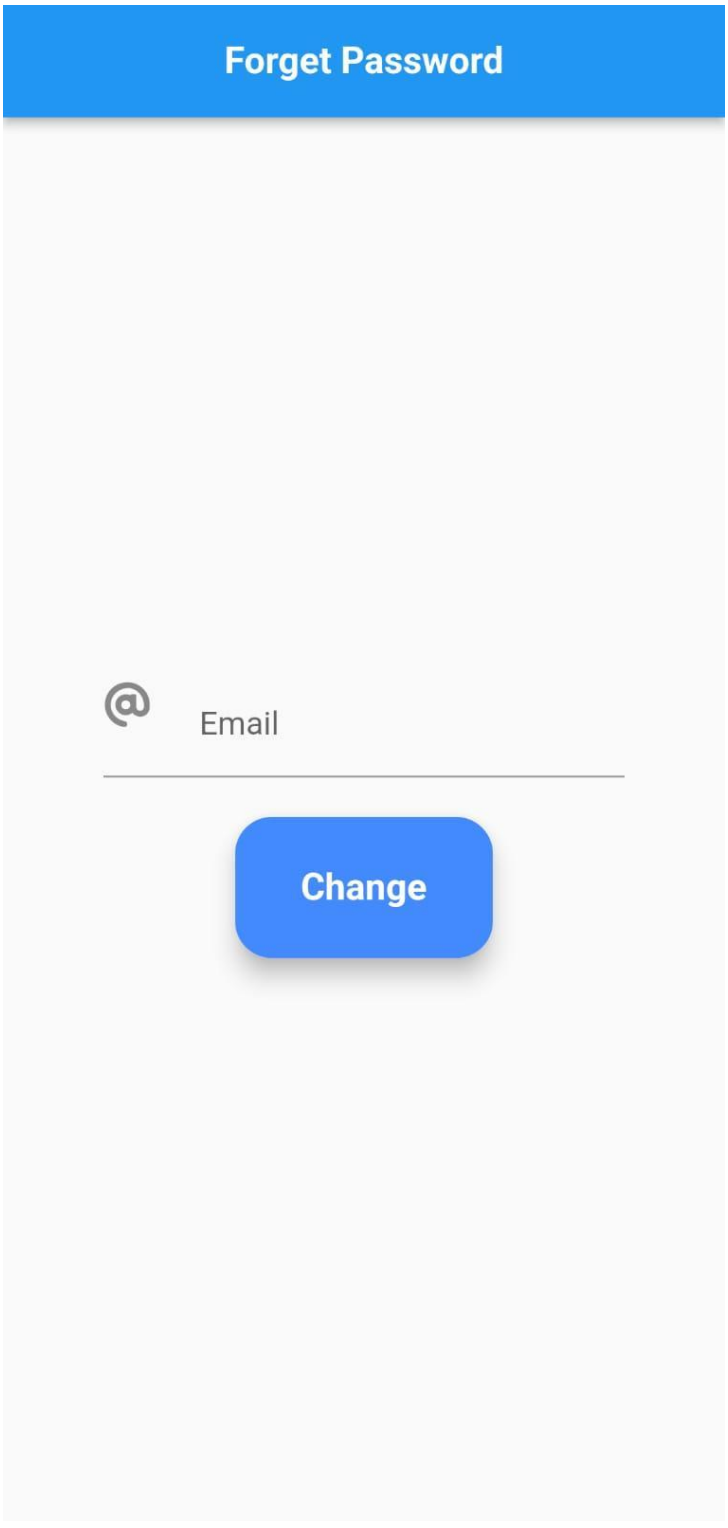


Figure-5.10 Forget Password page

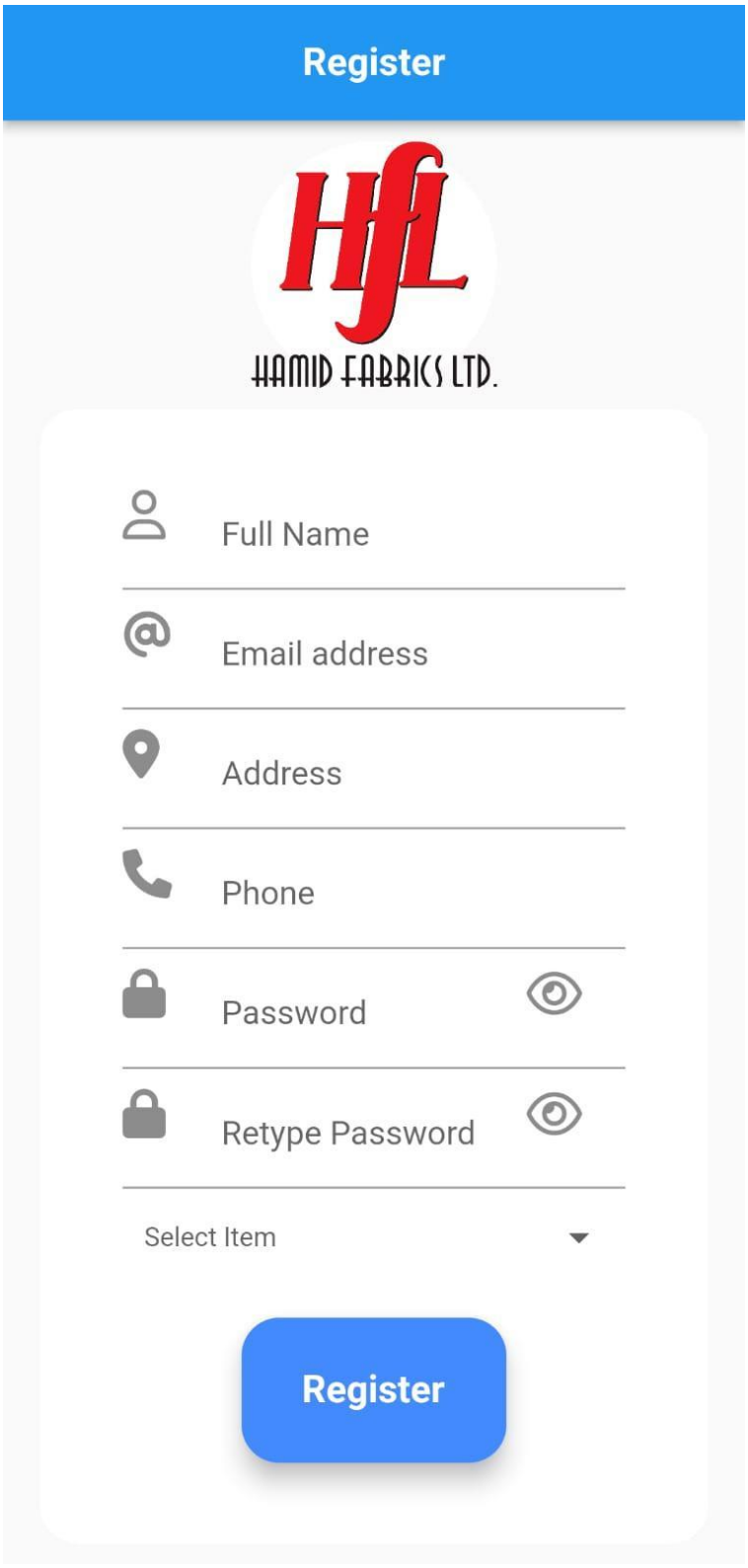


Figure-5.11 Register page



Figure-5.12 Task page

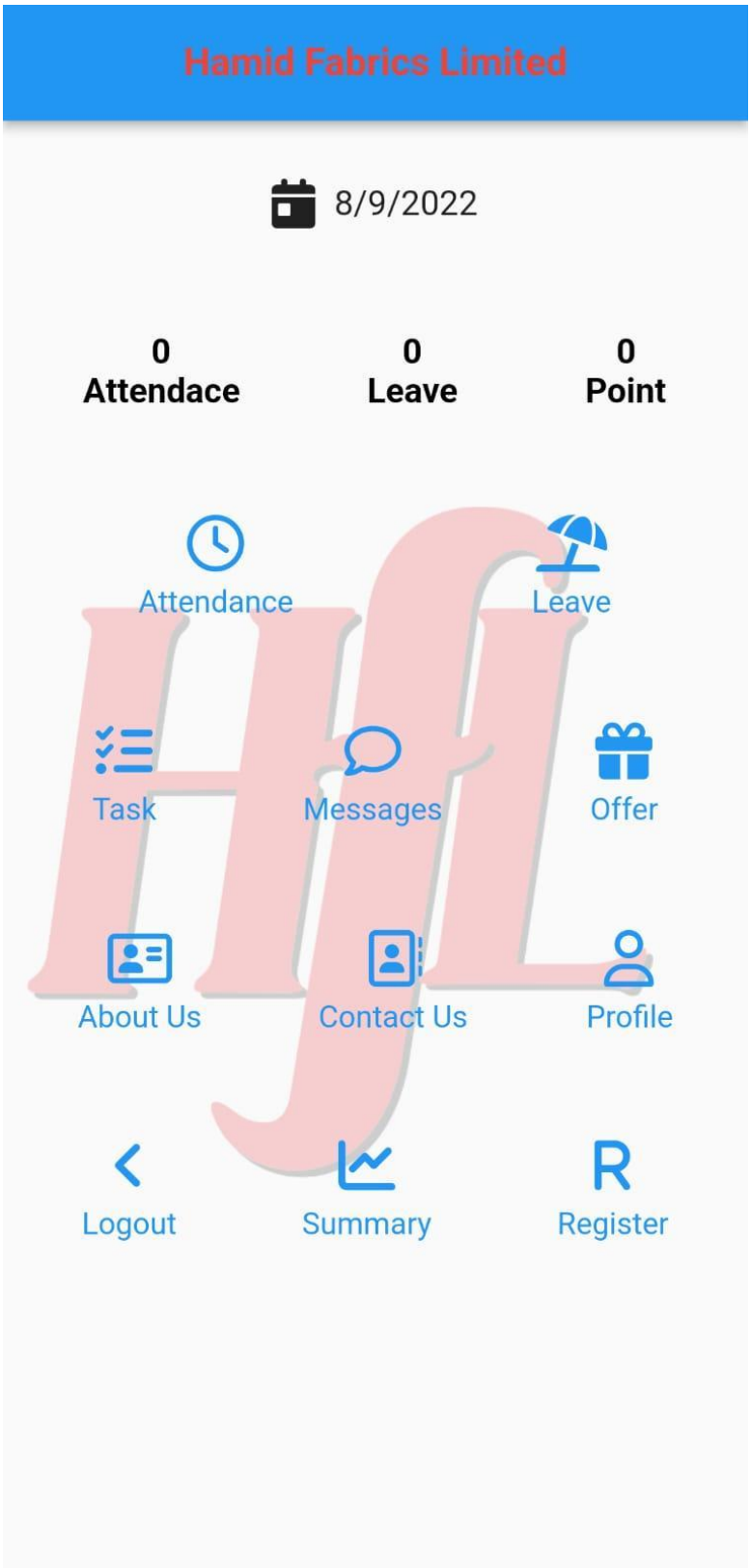


Figure-5.13 Dashboard page

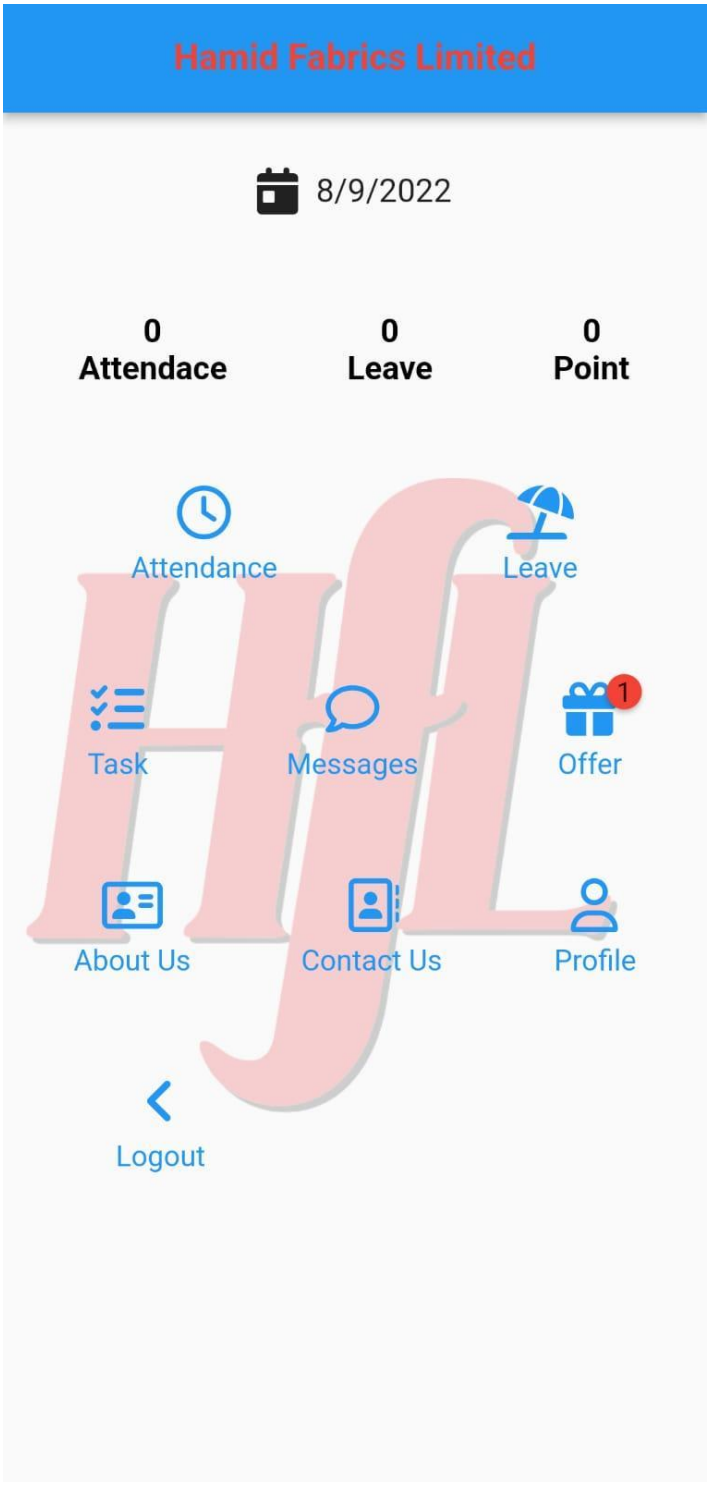


Figure-5.14 Dashboard page

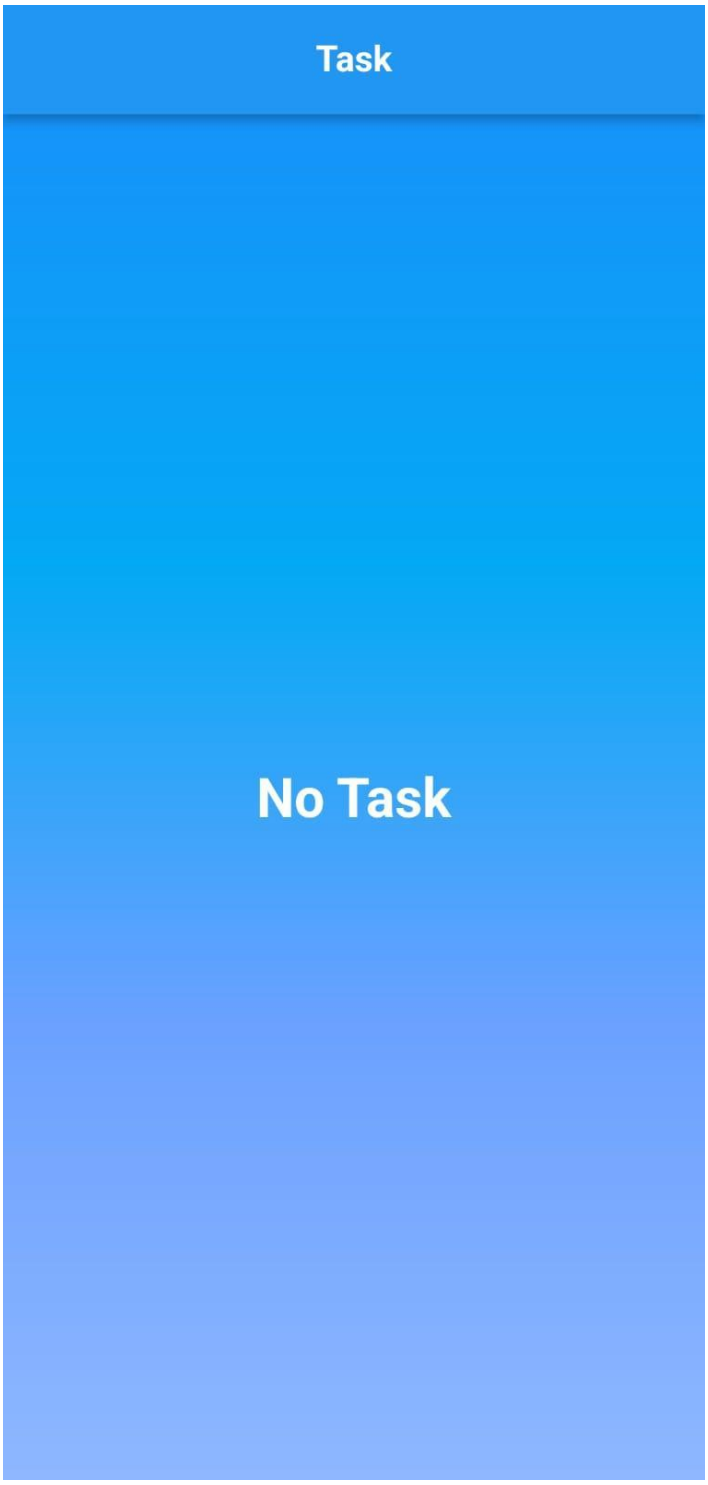


Figure-5.15 Task page

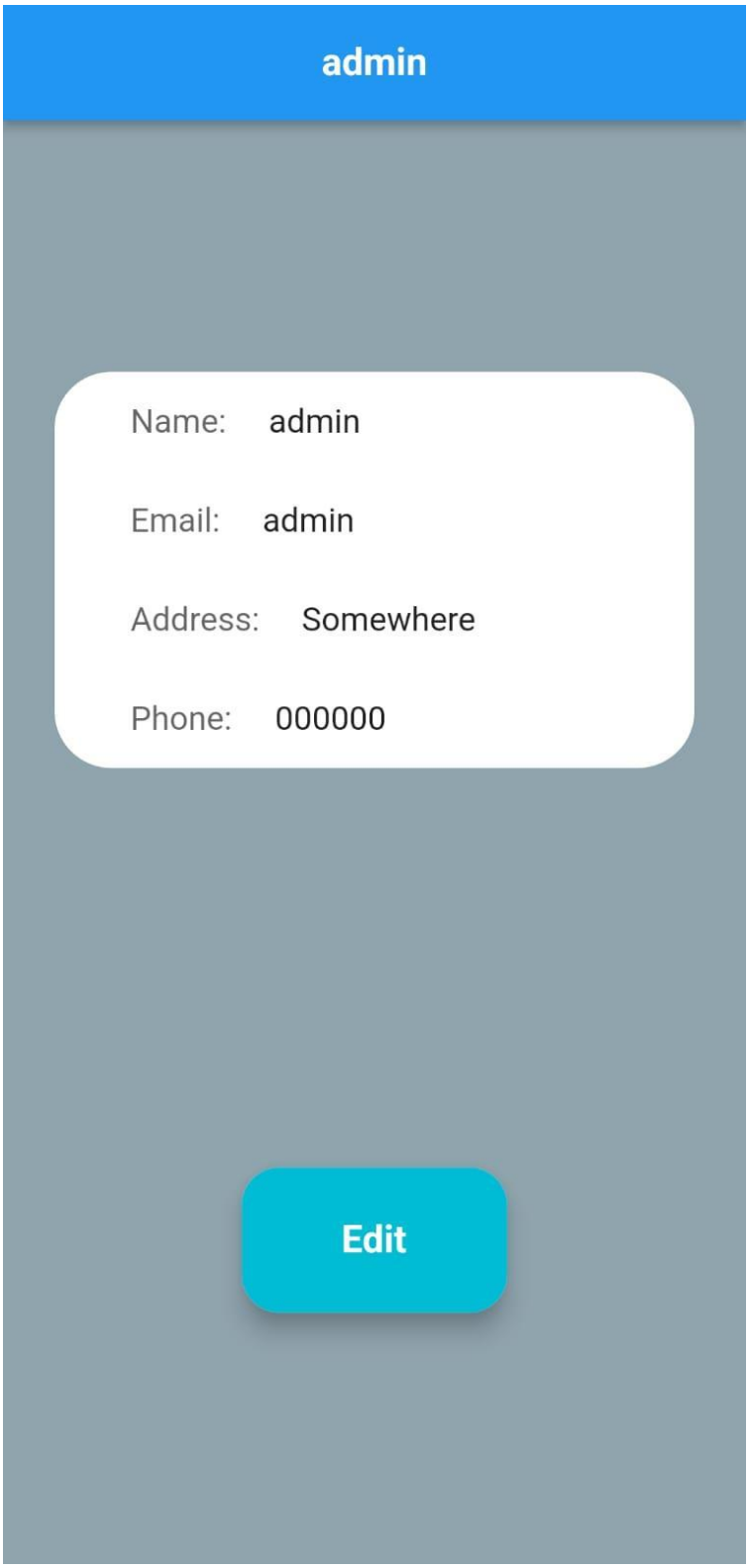


Figure-5.16 Profile page

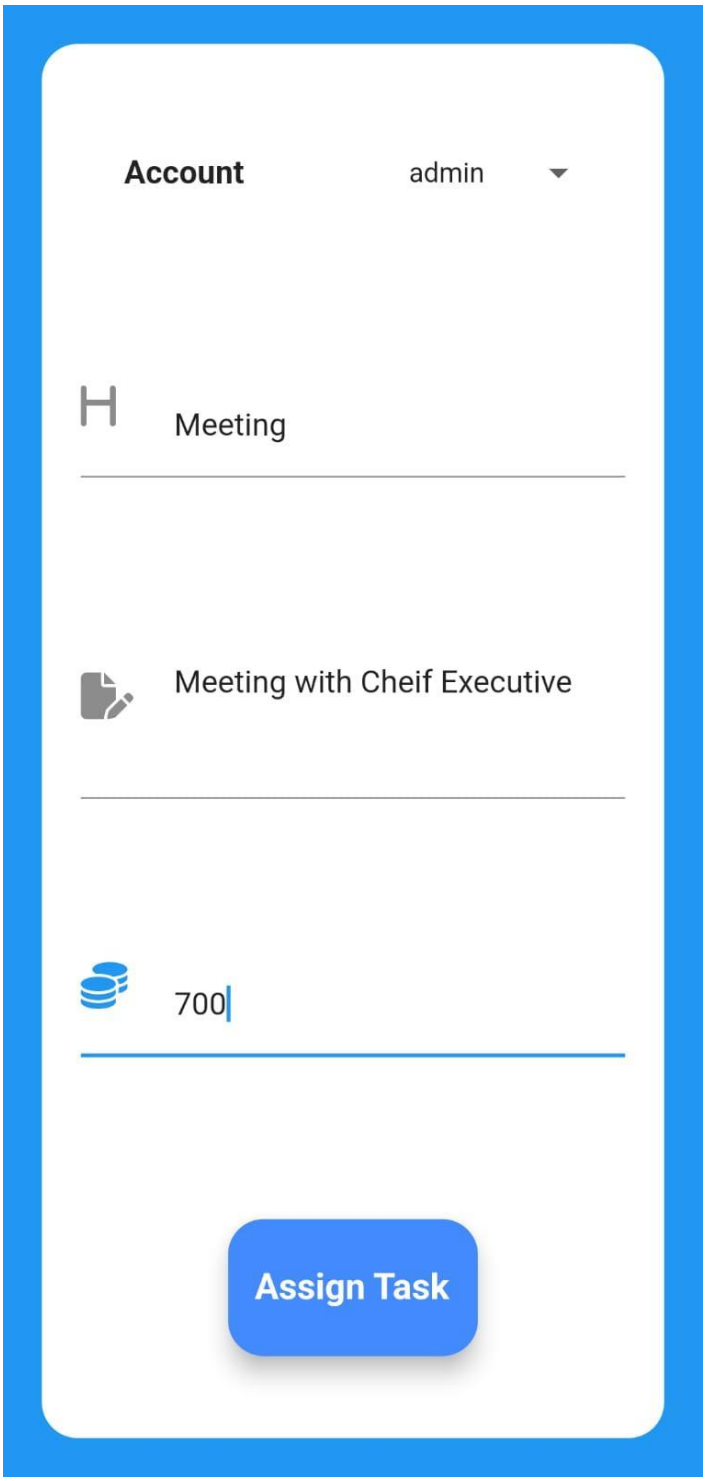


Figure-5.17 Add Task page



Figure-5.18 Task page

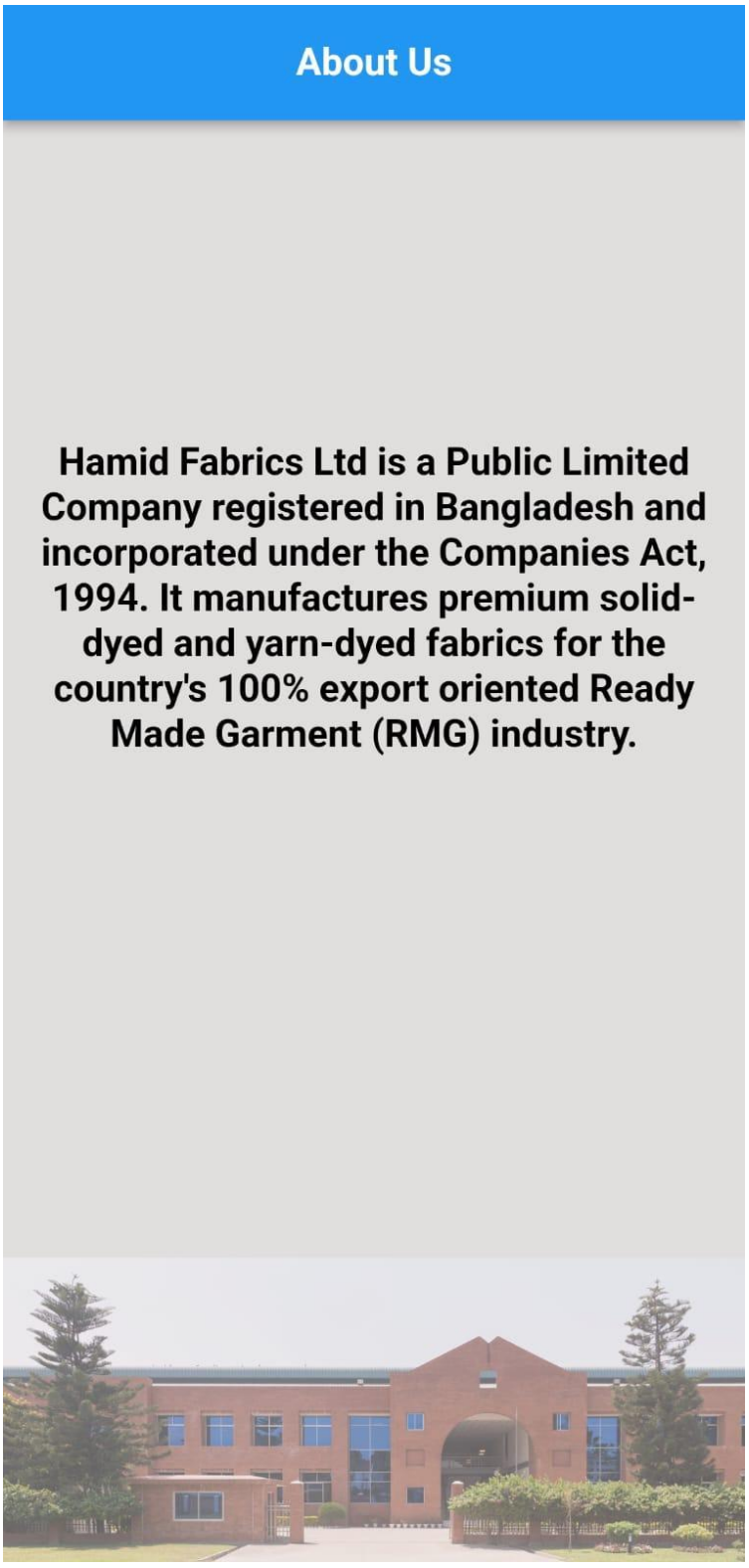


Figure-5.19 About Us page

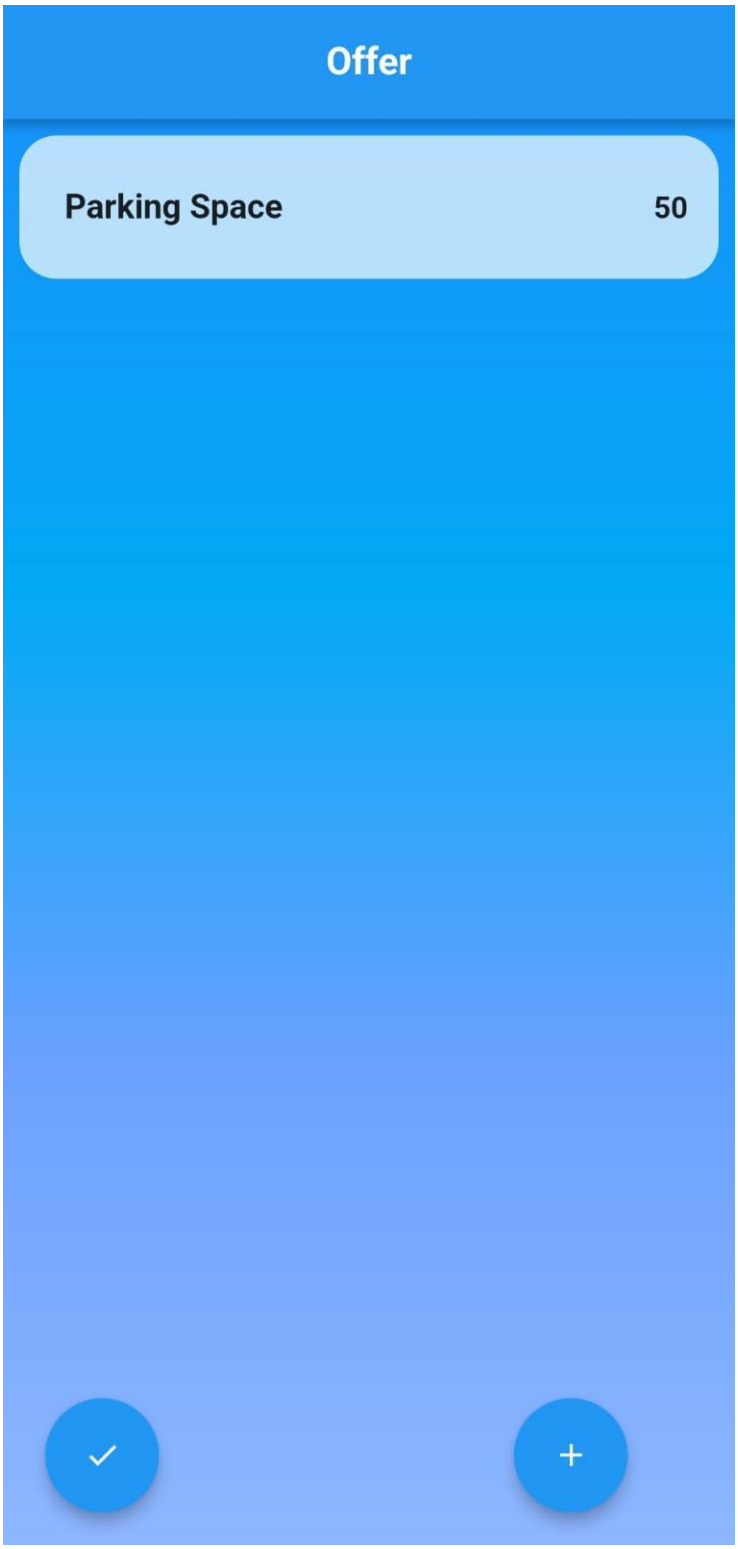


Figure-5.20 Offer page

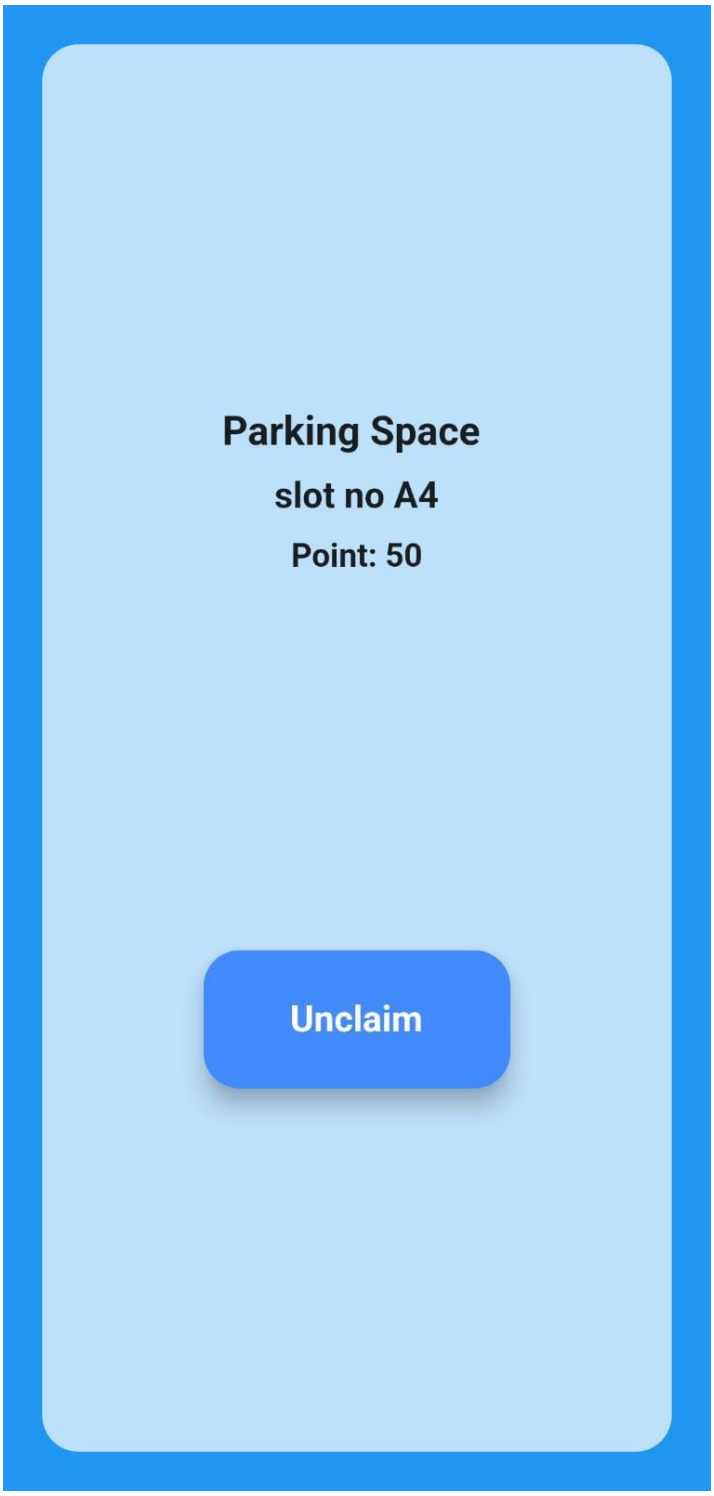


Figure-5.21 Offer Description page

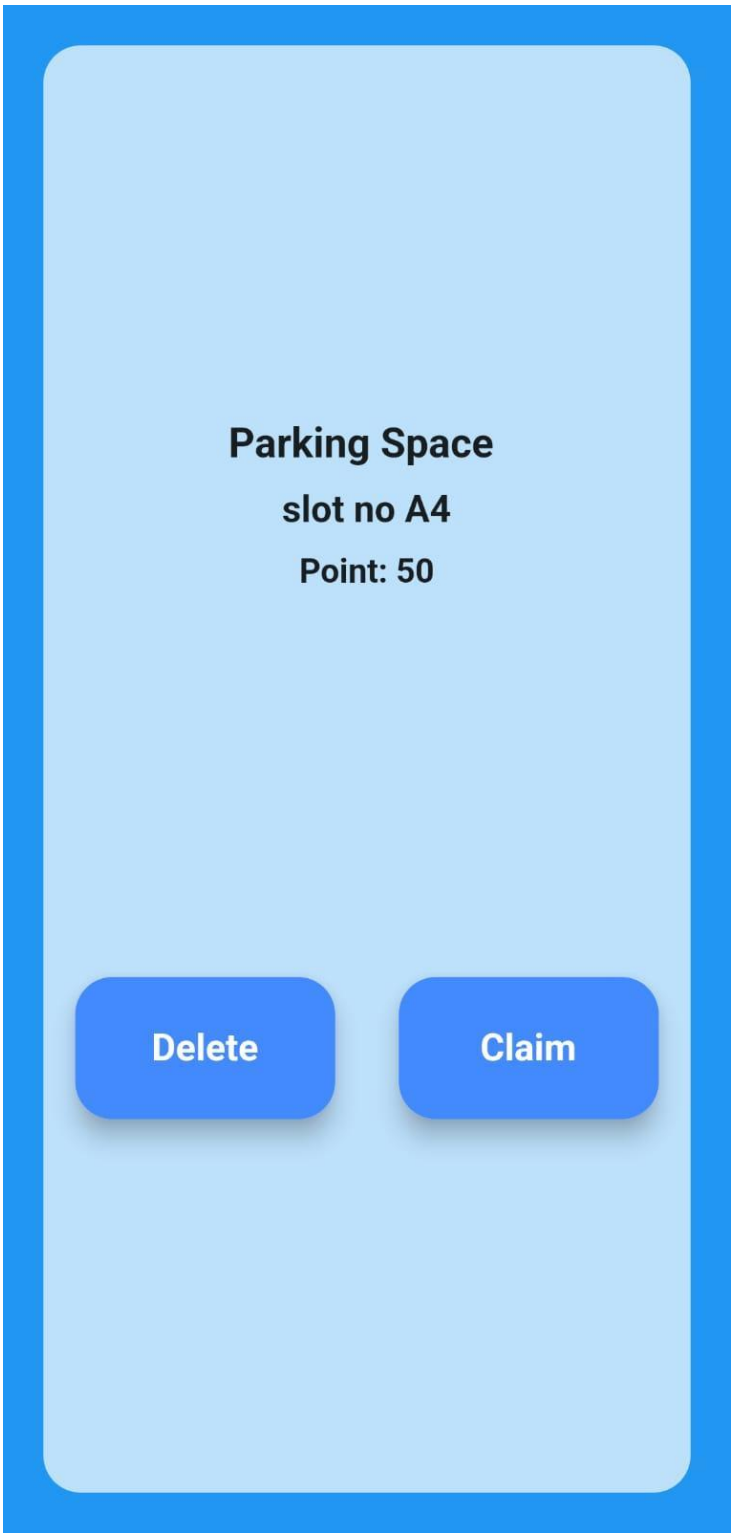


Figure-5.22 Offer Description page

5.4.3 Architecture

Front-end

XML was used to implement the front-end. Different layouts were utilized for various displays. The user interface is quite intuitive and user-friendly. When a user connects onto the system, he or she may immediately begin using the program due to the application's simplicity while still including several features. There will be frequent modifications to adapt the UI to the user experience.

Backend

The backend was written using the Java programming language. Java is founded on the concept of object-oriented programming (OOP). Our project was developed in Java since there is already a vast pool of java libraries and tools available to make development easier. Because of the vast collection of libraries supplied by Java, it simplified our application development. The applications developed using Java are believed to be stable. That is partially due to the fact that a new version of Java with new features is published every day, including complex features. Since Java is also one of the most dependable and powerful programming languages, its compilers helped detect any form of fault in our code. Aside from that, Java includes excellent features such as exception handling and garbage collection, which demonstrate Java's dependability. Despite the fact that Kotlin is rapidly gaining traction in mobile programming, Java remains the primary technology for Android development. Due to the shortage of developers and the project's extensive functionalities, it took me some time to complete the project, but it was ultimately done successfully.

Database

Firebase was used for database to safely store the data without any issues. It also assisted in the execution of backend code responding to events activated by databases. Furthermore, it is optimized for offline use too. Nowadays, most of the apps have the login facility and the developer aims to simplify and secure it better. Therefore, the support of Firebase Authentication helped us to do that task with an easy sign-in process. It also provided identity solution for the emails, passwords, and phone number.

Chapter 6: Result and Analysis

6.1 Overview

As previously stated, the application, Hamid Fabrics Limited, is a web-based application with Firebase as the database. The application is developed in Android Studio, with the front interface and the backend written in Flutter. The project's total work was centered on the needs of our company's stakeholders. The initial phase was to gather project needs from key stakeholders, which were then organized according to the project's requirements plan. Because our application will be utilized by users all over the country, we wanted to create a project that would meet their requirements. To ensure that the final UI meets the needs of the customer, we had to design mockups and modify them multiple times. Along with the UI, we had to make sure the project had functionalities that were identical to the application of similar companies as us. To put it another way, we wanted our software to be simple to use while having extensive features.

6.2 Testing Result

The application's development has been successfully completed. Each screen's backend functionality was written at the same time as its UI was being designed. Several new functionalities have been incorporated as a result of changes in specific requirements. I had tested the program whenever new functionalities were incorporated. I planned to finish the design and development process before moving on to testing, however owing to time constraints, I had to complete all 3 phases at the same time. Many test cases had failed, necessitating the efforts of me to correct the bugs and errors. Not only did I run into faults throughout the development and testing phases, but I also had several issues with storing data in our MySQL database, which were eventually resolved. Our company has released the beta version for now. Once we have completed our test scenarios, we will release our company's final product.

Chapter 7: Engineering Problem Analysis

7.1 Sustainability of the project

The term "sustainability" refers to a product's ability to be maintained and upgraded. In today's environment, any program that is released must be maintained and regularly updated for the benefit of its users.

Community Sustainability

When the project is officially launched, it will significantly impact the community because people will be relieved of the hassle of physically keeping data and claiming offer. Instead, they will be able complete their task and claim offer through the application developed by our company. Hence summarization can easily do and an employee's work performance can easily clarify.

Financial Sustainability

After the project is launched, the primary goal will be to make it easier for employees work performance to be managed. Since we don't need to hire anymore employee to analyze employee work and to notify everyone about new services that are being offered by the company.

Organizational Sustainability

After the project is completed, the application may be maintained and upgraded by the same team, or the company may grow the team by adding more members to the project in order to improve the project. The company intends to expand more functionalities and improve the application's appearance by changing the UI. The development team will resolve any faults reported by customers. As stated in previous sections of this study,

the application will be maintained and updated on a regular basis to improve the experience of clients using the application so that the project is organizationally sustainable.

7.2 Social and Environmental Effects and Analysis

Socials Effects

The application will save employee's time to find new services offered by the office and view their task assigned by their supervisor. Additionally, it will enable employees can also give their attendance or take leave through the app. To complete CRUD operations, staff will require an internet connection and a smartphone

Environmental Effects

People are finding it impossible to move from one place to another as the world faces a critical period due to the global pandemic of Covid-19. This system will play a significant part in this situation since it will allow most employees to operate from home, so via the app they can easily see their task and complete them as soon as possible. As a result they no need to come to office to find their assign task.

7.3 Addressing Ethics and Ethical Issues

With the proliferation of data collecting, hacking, and criminality in the world of smartphones, some unstated norms and ethics principles must be observed while developing and distributing an application. Developers of Hamid Fabrics Limited believe that the application complies with all applicable codes of conduct for application release and development, which have been taken into serious consideration. Some of them are

Data Security: The MySQL stores data on the cloud. When compared to on-premises security, cloud services provide more robust data security; as a result, there is a low risk of data exposure to the public. Firebase Security Rules act as a barrier between users' data and malevolent users. Complex rules have been written in Hamid Fabrics Limited to ensure the best security for the app's data.

Data Storage: Since all our application data is stored in the MySQL database, which is hosted in the cloud, there is essentially no risk of data loss or leakage due to system

failure. If the data were retained on-premises, there would be the risk of data loss due to system failure or other disasters. However, because our application data is stored in the cloud, there is virtually little risk of data loss.

Collecting user data: The system will collect only user data relevant to the business. The user's data will be gathered only if the user gives permission to collect the data or willingly provides their data on our application.
Sharing User Data: Even though the data obtained is unlikely to cause any privacy concerns for most users, the system does not give any service, business, or third-party access to the information acquired.

Chapter 8: Lessons Learned

8.1 Problems Faced During this Period

Since my firm requested that I develop a professional application, and this was my first time developing an app for an organization, the skill set required for this process was extensive. I was required to learn plenty of new skills in order to incorporate different functionalities necessary for my application, such as how learning to use firebase authentication to send OTP to different numbers or creating logos to use in various screens in the program. Initially, I was assigned a team member to assist me with my project, but owing to financial constraints, I was obliged to develop the application alone. Throughout the app development process, I encountered numerous challenges whenever I introduced a new feature or made a modification, such as when I added a new feature, my app crashed owing to various code flaws or missing lines. Solving the bugs was a challenging effort for me, as some of the issues were extremely difficult to discover and, once located, took an unusual amount of time to resolve. Also using Bloc architecture was very difficult for me because this the first time I have known about it.

8.2 Solutions of those Problems

Even though I was required to work from home, I was expected to attend daily meetings and discuss what I created that day, which resolved the issue of communication breakdown. Even though designing a professional application was new to me, I overcame obstacles and accomplished my goals through dedication to my job and hard effort. Working alone on the project was initially challenging since all the responsibilities that should have been carried out by a team were instead handed to me to fulfill on my own. However, as I gained knowledge and experience, I adapted to performing duties alone, and after a while, I improved at my work. To ensure that any bugs or issues I encountered were resolved, I tested my program several times whenever I added new features or modified it. While it was obviously time consuming, I was able to rectify all the flaws or issues that I encountered, which benefitted me in the long run and saved me the time and effort required to find the bugs of a whole application from the ground up.

Chapter 9 Future Works & Conclusion

9.1 Future Works

This project, Hamid Fabrics Limited, is still evolving, and we intend to add additional features to it. Some of the features that we have plan to add in the upcoming future are:

➢ Adding a chatbot for customers to communicate with support team

➢ Enable order tracking directly from the application

➢ Enable OTP login using phone number

➢ Adding an extra feature for customers to use promo code

➢ Including the option to choose multiple languages

9.2 Conclusion

Working as an intern on the project Hamid Fabrics Limited was a wonderful experience. During my internship, I learned and applied a lot about Android Studio and mobile application development. I learned a great deal about one of the most popular programming languages, Java, Dart, Flutter, as well as Google's popular database, Firebase. I have understood the bloc architecture. I have also gained a lot of knowledge about creating various types of mobile applications with Android Studio. I was challenged to quickly adjust to changes and come up with rational answers. Throughout my project, I discovered how to collaborate with my supervisor to overcome obstacles. Despite the great strain of producing a professional application on my own, I did not give up and succeeded in completing my aim of developing the application in accordance with the specifications. This internship opportunity has given me the opportunity to learn more about the development environment and gain industry experience. I would like to thank everyone who has helped to make my time as an intern a memorable one.

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Appendix -A (Code snippets):

Table Generate:

```
Future _createDB(Database db, int version) async {
  const idType = 'INTEGER PRIMARY KEY AUTOINCREMENT';
  const textType = 'TEXT NOT NULL';
  const integerType = 'INTEGER NOT NULL';

  await db.execute('''CREATE TABLE IF NOT EXISTS $tableAccount (
    ${AccountFields.id} $idType,
    ${AccountFields.name} $textType,
    ${AccountFields.email} $textType,
    ${AccountFields.phone} $textType,
    ${AccountFields.address} $textType,
    ${AccountFields.password} $textType,
    ${AccountFields.employeeType} $textType,
    ${AccountFields.point} $integerType
  )''');
  await db.execute('''CREATE TABLE IF NOT EXISTS $tableAttendance (
    ${AttendanceFields.id} $idType,
    ${AttendanceFields.accountID} $integerType,
    ${AttendanceFields.attendanceType} $textType,
    ${AttendanceFields.date} $textType
  )''');
  await db.execute('''CREATE TABLE IF NOT EXISTS $tableOffer (
    ${OfferFields.id} $idType,
    ${OfferFields.title} $textType,
    ${OfferFields.description} $textType,
    ${OfferFields.point} $integerType
  )''');
  await db.execute('''CREATE TABLE IF NOT EXISTS $tableTask (
    ${TaskFields.id} $idType,
    ${TaskFields.accountID} $integerType,
    ${TaskFields.title} $textType,
    ${TaskFields.description} $textType,
    ${TaskFields.point} $integerType,
    ${TaskFields.completed} $integerType
  )''');
  await db.execute('''CREATE TABLE IF NOT EXISTS $tableAccountOffer (
    ${AccountOfferFields.id} $idType,
    ${AccountOfferFields.accountID} $integerType,
    ${AccountOfferFields.offerID} $integerType
  )''');
```

```
}
```

Login Validation:

```
static Future<bool> validate(String email, String password) async {
  final db = await Connection.instance.database;
  final maps = await db.query(tableAccount,
      columns: AccountFields.values,
      where: "${AccountFields.email}=? and ${AccountFields.password}=?",
      whereArgs: [email, password]);
  if (maps.isNotEmpty) {
    return true;
  }
  return false;
}
```

Fetch account from database:

```
static Future<Account> getAccount(String email, String password) async {
  final db = await Connection.instance.database;
  final maps = await db.query(tableAccount,
      columns: AccountFields.values,
      where: "${AccountFields.email}=? and ${AccountFields.password}=?",
      whereArgs: [email, password]);
  if (maps.isNotEmpty) {
    return Account.fromMap(maps.first);
  } else {
    throw Exception('Account not found');
  }
}
```

Find if Account exist or not :

```
static Future<Account> find(String email) async {
  final db = await Connection.instance.database;
  final maps = await db.query(tableAccount,
      columns: AccountFields.values,
      where: "${AccountFields.email}=?",
      whereArgs: [email]);
  if (maps.isNotEmpty) {
    return Account.fromMap(maps.first);
  }
  return Account(
    name: "",
    email: "",
    phone: "",
    address: "",
    password: "",
    employeeType: "eomployeeType",
    point: 0,
```

```
  );
}
```

Create new Account:

```
static Future<void> create(Account account) async {
  final db = await Connection.instance.database;
  await db.insert(tableAccount, account.toMap());
}
```

Update Account:

```
static Future<void> update(Account account) async {
  final db = await Connection.instance.database;
  await db.update(tableAccount, account.toMap(),
      where: "${AccountFields.id}=?", whereArgs: [account.id]);
}
```

Delete Account:

```
static Future<void> delete(int id) async {
  final db = await Connection.instance.database;
  await db.delete(tableAccount,
      where: "${AccountFields.id} = ?", whereArgs: [id]);
}
```

Get AccountID from Account name:

```
static Future<int> getID(String name) async {
  final db = await Connection.instance.database;
  final maps = await db.query(tableAccount,
      columns: AccountFields.values,
      where: "${AccountFields.name}=?",
      whereArgs: [name]);
  return Account.fromMap(maps.first).id as int;
}
```

Get Total point from an Account:

```
static Future<int> getPointTotal(int id) async {
  final db = await Connection.instance.database;
  final maps = await db.query(
```

```
      tableAccount,
      columns: AccountFields.values,
      where: "${AccountFields.id} = ?",
      whereArgs: [id],
    );
    if (maps.isNotEmpty) {
      return Account.fromMap(maps.first).point;
    }
    return 0;
  }
```

Code is similar for rest of the table such as TableTask, TableOffer, TableAttendance and TableChat.

Bloc Architecture for Login:

```
abstract class LoginState {
  final Account account;
  LoginState({
    required this.account,
  });
}

class LoginInitial extends LoginState {
  LoginInitial({required super.account});
}

class LoginCubit extends Cubit<LoginState> {
  LoginCubit()
      : super(
          LoginInitial(
            account: Account(
              name: "",
              email: "",
              phone: "",
              address: "",
              password: "",
              employeeType: "eomployeeType",
              point: 0,
            ),
          ),
        );
  Future<bool> validate(String email, String password) async {
    bool result = await AccountDB.validate(email, password);
    if (result) {
      login(email, password);
    }
    return result;
  }
```

```
  Future<void> login(String email, String password) async {
    Account account = await AccountDB.getAccount(email, password);
    emit(LoginInitial(account: account));
  }
}
```

Like Login bloc other blocs are also implemented for app's functionality

Dashboard Page code:

```
class Dashboard extends StatefulWidget {
  const Dashboard({super.key});

  @override
  State<Dashboard> createState() => _DashboardState();
}

class _DashboardState extends State<Dashboard> {
  DateTime now = DateTime.now();
  String date = "";
  @override
  void initState() {
    date = "${now.day}/${now.month}/${now.year}";
    super.initState();
  }

  @override
  Widget build(BuildContext context) {
    return SafeArea(
      child: WillPopScope(
        onWillPop: () async => false,
        child: Scaffold(
          appBar: AppBar(
            automaticallyImplyLeading: false,
            title: Center(
              child: Text(
                "Hamid Fabrics Limited",
                textAlign: TextAlign.center,
                style: TextStyle(
                  color: Colors.red,
                  fontWeight: FontWeight.bold,
                  fontSize: 20.sp,
                ),
              ),
            ),
          ),
          body: Container(
            decoration: const BoxDecoration(
              image: DecorationImage(
                fit: BoxFit.contain,
```

```
        opacity: 0.2,
        alignment: Alignment.centerLeft,
        image: AssetImage("assets/logo_half.png"))),
child: Padding(
  padding: const EdgeInsets.all(8.0),
  child: BlocBuilder<LoginCubit, LoginState>(
      builder: (context, state) {
    return Column(
      children: [
        SizedBox(
          height: 20.h,
        ),
        today(),
        spacer(),
        attendanceCount(),
        spacer(),
        attendanceButton(),
        spacer(),
        jobButton(),
        spacer(),
        utilButton(),
        spacer(),
        Row(
          mainAxisAlignment: MainAxisAlignment.spaceAround,
          children: [
            InkWell(
              onTap: () => Navigator.of(context).pop(),
              child: Column(
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
                  FaIcon(FontAwesomeIcons.angleLeft,
                      color: Colors.blue, size: 30.sp),
                  SizedBox(height: 5.h),
                  Text("Logout",
                      style: TextStyle(
                          color: Colors.blue, fontSize: 16.sp))
                ],
              ),
            ),
            state.account.employeeType == "HR & Admin"
                ? cardNavigator(FontAwesomeIcons.chartLine,
                    "Summary", Container())
                : Container(),
            state.account.employeeType == "HR & Admin"
                ? cardNavigator(FontAwesomeIcons.r, "Register",
                    const RegistrationPage())
                : Container(),
          ],
        ),
      ],
    );
  }),
),
```

```
        ),
      ),
    ),
  );
}

BlocBuilder<DashboardCubit, DashboardState> jobButton() {
  return BlocBuilder<DashboardCubit, DashboardState>(
      builder: (context, state) {
    return Row(
      mainAxisAlignment: MainAxisAlignment.spaceAround,
      children: [
        Badge(
          animationType: BadgeAnimationType.fade,
          showBadge: (state.task == 0) ? false : true,
          badgeContent: Text('${state.task}'),
          child: cardNavigator(
              FontAwesomeIcons.listCheck, "Task", const TaskPage()),
        ),
        Badge(
          animationType: BadgeAnimationType.fade,
          showBadge: (state.messages == 0) ? false : true,
          badgeContent: Text('${state.messages}'),
          child: cardNavigator(
              FontAwesomeIcons.comment, "Messages", Container()),
        ),
        Badge(
          animationType: BadgeAnimationType.fade,
          showBadge: (state.offer == 0) ? false : true,
          badgeContent: Text('${state.offer}'),
          child: cardNavigator(
              FontAwesomeIcons.gift, "Offer", const OfferPage()),
        ),
      ],
    );
  });
}

Row utilButton() {
  return Row(
    mainAxisAlignment: MainAxisAlignment.spaceAround,
    children: [
      cardNavigator(
          FontAwesomeIcons.addressCard, "About Us", const AboutPage()),
      cardNavigator(
          FontAwesomeIcons.addressBook, "Contact Us", const ConatctPage()),
      cardNavigator(FontAwesomeIcons.user, "Profile", const ProfilePage()),
    ],
  );
}

Row attendanceButton() {
  return Row(
```

```
    mainAxisAlignment: MainAxisAlignment.spaceAround,
    children: [
      cardNavigator(
          FontAwesomeIcons.clock, "Attendance", const AttendancePage()),
      cardNavigator(
          FontAwesomeIcons.umbrellaBeach, "Leave", const LeavePage())
    ],
  );
}

Widget cardNavigator(IconData icon, String text, Widget route) => InkWell(
      onTap: () => Navigator.of(context)
          .push(MaterialPageRoute(builder: (context) => route))
          .then((value) => BlocProvider.of<DashboardCubit>(context).refresh(
              BlocProvider.of<LoginCubit>(context).state.account.id as int)),
      child: Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: [
          FaIcon(icon, color: Colors.blue, size: 30.sp),
          SizedBox(height: 5.h),
          Text(text, style: TextStyle(color: Colors.blue, fontSize: 16.sp))
        ],
      ),
    );

BlocBuilder<DashboardCubit, DashboardState> attendanceCount() {
  return BlocBuilder<DashboardCubit, DashboardState>(
    builder: (context, state) => Row(
      mainAxisAlignment: MainAxisAlignment.spaceAround,
      children: [
        card(state.attendance, "Attendace"),
        card(state.leave, "Leave"),
        card(state.point, "Point"),
      ],
    ),
  );
}

Widget card(int data, String text) => Column(
      mainAxisAlignment: MainAxisAlignment.center,
      children: [
        Text(data.toString(),
            style: TextStyle(
                color: Colors.black,
                fontWeight: FontWeight.bold,
                fontSize: 18.sp)),
        Text(text,
            style: TextStyle(
                color: Colors.black,
                fontWeight: FontWeight.bold,
                fontSize: 18.sp))
      ],
    );
```

```
  Row today() {
    return Row(
      mainAxisAlignment: MainAxisAlignment.center,
      children: [
        const FaIcon(FontAwesomeIcons.calendarDay, color: Colors.black87),
        SizedBox(width: 10.w),
        Text(
          date,
          style: TextStyle(
            fontSize: 18.sp,
            color: Colors.black87,
          ),
        ),
      ],
    );
  }

  SizedBox spacer() => SizedBox(height: 50.h);
}
```

An Undergraduate Internship/Employee Management System

By

Rajia Sultana

Student ID: **1821943**

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.

(Signature of the Supervisor)

Ms. Ajmiri Sabrina Khan

Department of Computer Science & Engineering

Independent University, Bangladesh