



# Report on Internship

Intern at LEADS Corporation Limited

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Institute of Information Technology  
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Course Code: SE-701

Submitted by

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Submitted to

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Performed at

**LEADS**

LEADS Corporation Limited  
LEADS Tower, M-20, Main Road 1, Section 14, Mirpur,  
Dhaka 1206, Bangladesh

Date of Submission: June 08, 2022

# LETTER OF TRANSMITTAL

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June 08, 2022

The Chairman

BSSE 4th year Exam committee 2020

Institute of Information Technology

University of Dhaka

Subject: Letter of Transmittal

Dear Sir,

I am very pleased to submit the report of my internship program at LeadSoft - Leads Corporation Limited as a part of the course SE 701- Internship.

This report contains the overview of my experience as an intern in the aforementioned company. I am glad to present you the report portraying my journey as an intern, along with learnings, objectives, activities and challenges based on my objectives during my Internship period. It includes a brief discussion about the company as well as its working process.

I would be glad if you accept this report and provide your valuable judgment. Your acceptance and appreciation would surely inspire me.

Sincerely yours,

S. M. Shahriyar

Roll No: BSSE-1044

BSSE 7th Semester

Institute of Information Technology

University of Dhaka

# **Letter of Endorsement**

To Whom It May Concern

## **Subject: Approval of the report**

This is to certify that all the information mentioned here is true and not confidential to the company and correctly aligned with the non disclosure agreement. The projects and activities mentioned in this report are authentic and not exaggerated and have had successful involvement of S.M. Shahriyar (BSSE-1044), Institute of Information Technology, University of Dhaka.

I wish him all the best and hope that he will lead a successful career.

.....  
**Md. Momtajul Karim**

Assistant General Manager,  
Head of Enterprise Mobile Application and Service (EMAS),  
Leads Corporation Limited.

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.....  
**Md. Rakib Hossain Khan**

Senior Software Engineer,  
Team Lead of Enterprise Mobile Application and Services (EMAS),  
Leads Corporation Limited.

## ACKNOWLEDGEMENT

At First, I would like to thank my Institute, Institute of Information Technology (IIT) for providing such a wonderful internship opportunity for students. I would like to thank our Internship Placement Office for selecting me to do my internship in a well-known software company.

I take this opportunity to express my profound gratitude and special thanks to my supervisor Md. Momtajul Karim (Assistant General Manager and Head of Enterprise Mobile Application and Service) who is in spite of being extraordinary busy with their duties, took time out to hear, guide and keep me on the correct path to carry out the internship program successfully at their esteemed organization. I also take the opportunity to express a deep sense of gratitude to my mentor for his monitoring and constant encouragement throughout the course of this internship.

I am also grateful to my team lead Md. Rakib Hossain Khan (Senior Software Engineer) for involving me in the project I-Life and for guiding me throughout the project.

I am also grateful to the Human Resource Department of LEADS Corporation Limited for granting me the opportunity to make my internship program in this organization. It is my radiant sentiment to place on record my best regard, deepest sense of gratitude to my team members Md. Imtiyaz Hossain, Muntasir Zaman, Ibnul Imtiaz, Abu Shadat Ahmed and all my colleagues for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

## Executive Summary

This internship report briefly highlights the major aspects of the author internship program at Leads Corporation Limited. It contains a comprehensive discussion both from academic and non-academic perspectives. It also details the company's culture, work environment, technologies and services, tools and utilities and so on.

The Internship program is an integral part of the course, Bachelor of Science in Software Engineering, offered by the Institute of Information Technology, University of Dhaka. As per the rule of institute the author was sent to Leads Corporation Limited for completing his internship. The principal objectives regarding this program is to introduce students to the world of Software industry as well as get experience on developing software solutions for real life problems. The author considers himself lucky to get the opportunity to get proper direction regarding required knowledge for developing real life solutions and get a chance to actively participate in the development process.

During the internship period, apart from technical challenges, various other difficulties were encountered. The author considers himself successful to overcome these challenges and find himself more skilled at communication, more punctual and more patient than ever before. The author also believes that the objective of the internship program is successfully met.

After the internship, the author is more confident and ambitious about the coming days.

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# Chapter 1: Introduction

## 1.1 Preamble

Internship is an opportunity for someone to get introduced and to gain experience regarding the workflow and overall culture of the offering organization. Organizations offer internship as a part of their recruitment process. There is probably no better way of judging a candidate to be fit or not for the specific organization. On the contrary, a candidate is benefited by the fact that he/she can understand his/her eligibility for the specific organization and get an invaluable experience of working for an organization.

Internship, which was once confined only as a medical graduate's term, has recently been immensely diversified. It is no longer confined to medical graduates but also used extensively in the other fields as well. Software industry is not an exception. Moreover, getting experience in the software industry is very important. I consider myself lucky to be a student of Institute of Information Technology, University of Dhaka that provided me with the glorious opportunity to have an internship within the bachelor program.

Internship is not only necessary, but also a complementary part of the 'Bachelor of Science in Software Engineering' offered by IIT. A full semester is dedicated to the internship program that portrays IIT's industrial attachment strategy.

As the requirement of the institute, I was offered to take my internship at LEADS Corporation Limited. which is one of the leading software company in Bangladesh. I tried my level best to make the full use of this opportunity. So far, my experience is so great that it exceeds my expectations.

## 1.2 Objectives

This report is prepared as a requirement of the course SE 701: Internship. The report reflects the activities that I have achieved in my intern life i.e. learning Industry practices, projects involvement, business behavior, team coordination, professional growth. Besides this it also includes various soft and hard skills that I have learned.

Internship has some specific and defined objectives. Some key points regarding objectives of the internship report are discussed in the following.

- ❖ Describing working environment and culture of LEADS Corporation Ltd
- ❖ Presenting the services provided by LEADS
- ❖ Describing the facilities provided by LEADS to their employee and intern
- ❖ Mentioning industrial practices, I have learnt in my internship period

- ❖ Highlighting the technologies and the software development process adopted by LEADS
- ❖ Describing real-life projects that I was involved in
- ❖ Representing my acquired skill in my internship period

### 1.3 Scopes

In this document, a brief description of Leads Corporation Limited is provided in order to provide a clear overview about the company. Information that is confidential to the company is excluded as part of the non-disclosure agreement.

This contains only the tasks that I was involved with and does not depict all the activities of the team I work with. Besides, the technologies that are described in this document are only specific to my work. This report does not discuss the clients Leads work with as I was not directly involved in communication with the client. My project involvements are also discussed at modular level only. Again, full description of the project is not provided for confidentiality issues.

### 1.4 Methodology

The whole report has been prepared by analyzing my experience at LEADS Corporation Ltd. as an intern and collecting information from some secondary sources provided by personnel of the company.

Primary Data :

- Experience gathered from internship
- Collaboration with colleagues and team mates during work
- Participation in different in-house activities

Secondary Data :

- Official website of LEADS Corporation Ltd.
- Linked in and Facebook page of LEADS
- Website of LEADS client

## 1.5 Report Organization

The following chapter contains a short description about Leads Corporation Limited, 3rd Chapter contains information about the projects I worked on, and 4th Chapter contains the skills I learnt.

Then a short conclusion describing overall experience is provided. Then, a reference section is provided which contains the source from where I have collected information. The last section of the report is the Appendix section where some screenshots of my project are attached.

## Chapter 2 : Company Profile

LeadSoft is a leading software development company. It is an associate company of LEADS Corporation Limited. It was founded in 1992. Total number of employees of the company is 280+. LeadSoft holds CMMI Level 5 accreditation. LeadSoft offers custom software development, software products, offshore software development, professional outsourcing and software consultancy. LeadSoft serves the banking sector, non-banking financial, life insurance and pharmaceuticals.

### 2.1 About LEADS

NCR Bangladesh had started developing a Branch Banking Application Software called ‘PcBANK’ in the mid-80s. LEADS, as the successor, have upgraded the Package as an Integrated Banking Application Software, which is available in Client-Server Environment and gradually evolved to the most reliable core banking solution in the country - “NGES”. This software is currently being used by 15 Commercial Banks in over 400 branches.

LEADS has come a long way since, to become the leading provider of application software for the financial sector of the country, among its myriad of different products and services.

LEADS, in its journey of innovation in Information Technologies, has achieved a strong footprint in many industries, such as Capital Market, Merchant Bank, Insurance, Manufacturing and Distribution.

LEADS is involved in designing, developing, implementing and maintaining business application software for both domestic and overseas markets. LEADS provides Core Banking Solution (BankUltimus) for the Banking industry for both local and global markets. In addition to the banking industry, LEADS provides products, services and solutions for non-banking financial companies, agent banking, capital market, broker house, life insurance, enterprise resource planning (ERP) etc.

Today LEADS is considered as one of the renowned ICT Solution Providers of Bangladesh and has become an IT partner of choice for managing People, Process and Environment. Continuous thrust for improving quality is the reason behind its success. From paltry 12 individuals, which LEADS inherited in 1992, it now has a core competent team of 250+ personnel.

## 2.2 Sister Concern

LEADS Corporation Limited has two sister concern companies- LeadSoft Bangladesh Limited and LEADS Training and Consulting Limited.

LeadSoft has been delivering best custom software application development service in the broader financial industry including banking, stock markets, insurance and non-financial institutions that made it eventually a leading software solution provider in this industry. LeadSoft has been a popular brand in local markets and continuously establishing exposure in international markets around the globe.

LEADS Training and Consulting Limited provides different types of application training, management training. LEADS Training & Consulting Limited's Business Event Management is intended to solve the needs of day-to-day management responsibilities as a strategic method for improving operations and cutting expenses.



Figure 1. LEADS sister concern companies

## 2.3 Vision

To be a model of excellence as an Information & Communication Technology company that our Shareholders, Customers, Suppliers, Associates and Society would love to be associated with.

## 2.4 Mission

To understand our customer's business & technology issues and to deliver measurable tangible results through our experience in and commitment to a varied range of platforms and products, and with dedication to stay current with reliable & proven technologies, to maximize the value of our services to our customers and to develop a competent and highly motivated workforce.

## 2.5 Core Values

LEADS Corporation Limited believes in 8 core values. All the employee including interns try to maintain these core values. LEADS believe in following 7 core values.

- ❖ Accountability
- ❖ Continuous Improvement
- ❖ Customer Dedication
- ❖ Green Living
- ❖ Integrity
- ❖ Performance
- ❖ Respect
- ❖ Teamwork

### 2.5.1 Integrity

All employees act responsibly and always hold themselves accountable for their work and how it is achieved.

### 2.5.2 Respect

LEADS is respectful to collaborators and communicators, treating others in a way they want themselves to be treated.

### 2.5.3 Team work

LEADS recognizes that every team member has her/his own unique role in the team and everyone respects and appreciates individual contribution.

### 2.5.4 Performance

LEADS is committed to drive exceptional business results and take personal pride in everything they do.

### 2.5.5 Continuous Improvement

LEADS is constantly curious and creative. They embrace the power of new ideas and unique perspectives. They courageously put them to work in the real world every day.

### 2.5.6 Customer Dedication

LEADS genuinely cares about the success of their internal and external customers.

### 2.5.7 Green Living

LEADS is committed to protect the environment.

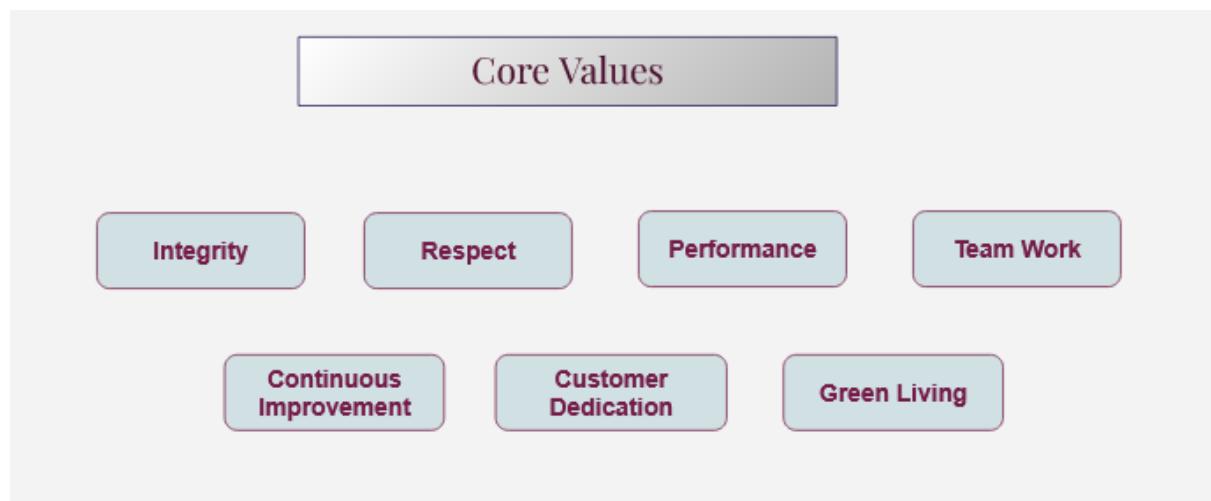


Figure 2. Core Values of LEADS

## 2.6 Organization Structure

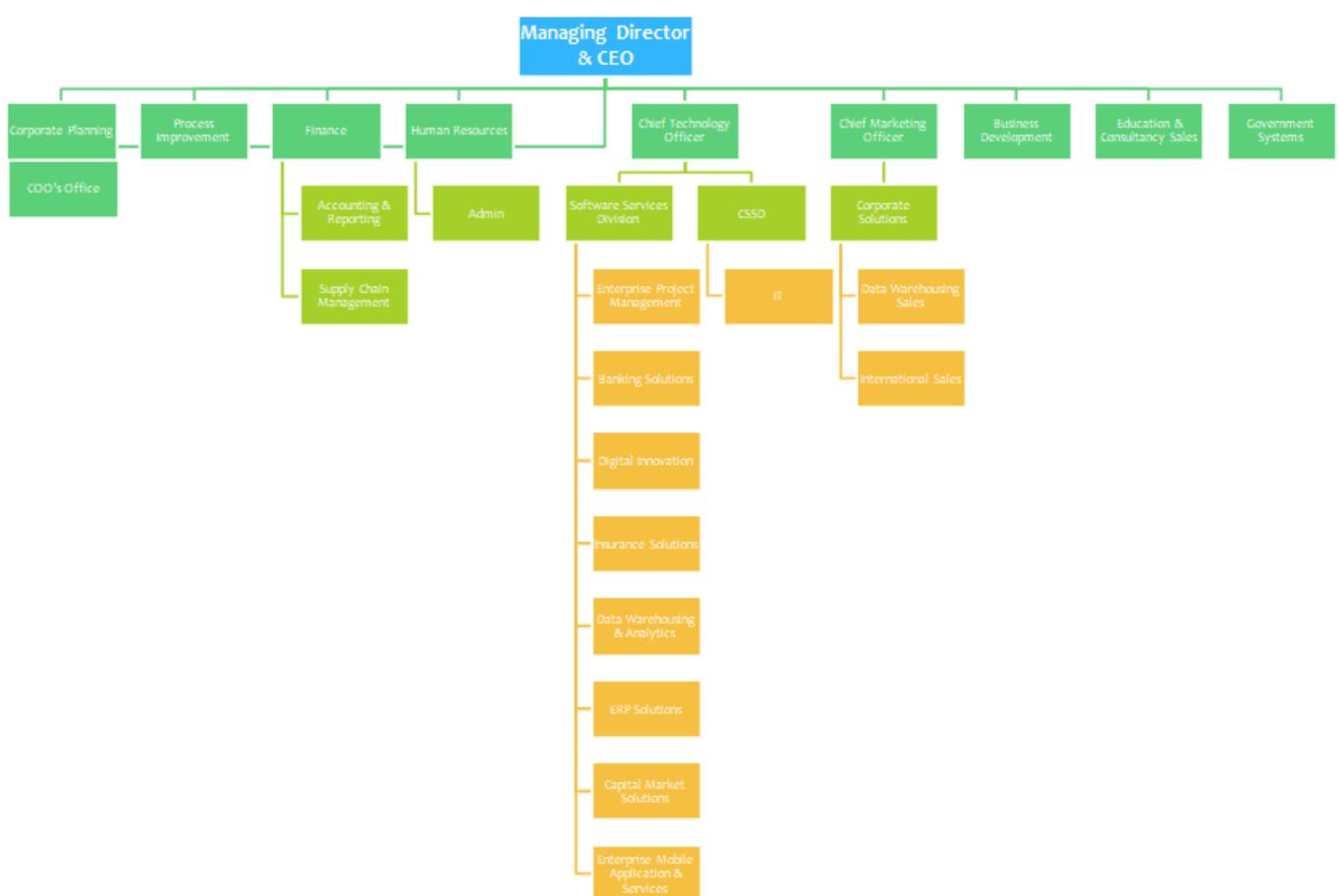


Figure 5. Manager- Level Management of LEADS

## 2.7 Organizational Environment and Culture

LeadSoft has a strong organizational culture. It cares a lot about the mental health of the employees. Various cultural activities are performed throughout the year to keep employees free from the monotonous cycle of software development. Here are some samples of the environment and culture maintained by LeadSoft.

### 2.7.1 People

LeadSoft is very much aware of the fact that people are enjoying their work. Everyone in Leads is so helpful and cooperative that I hardly feel any type of discomfort during my stay at office. Everyone strictly maintains the core values that are described in the previous section. Such wonderful and collaborative endeavors from each and every person has created an enviable environment to work in.

### 2.7.2 Dress Code

There is a strict dress code in LeadSoft. Everyone is required to wear formal dress in office time. A half or full sleeve formal shirt, formal single colored pants along with shoes is the recommended dress code for male employees. However, on Thursday employees can wear smart casual dress.

### 2.7.3 Office Schedule

The office time is from 10 AM to 7 PM. However, employees are allowed to enter within 9.15. If someone enters after 9.15 AM it is considered as a late count. Everyone must punch a card at the time of entering and leaving the office. However, this tracking system is not applicable for interns.

### 2.7.4 Festival

Different festival takes place at Leads office every year. A few days ago, we celebrated ‘Pohela Boishakh’ in a gorgeous manner. A historical lunch followed by cultural evening was held to celebrate this festival. Moreover, birthday celebrations, fresher’s receptions and farewells take place to embrace new employees and bid goodbye to departing ones.

### 2.7.5 Sprint Planning

As LEADS follows an agile software development process, development phases are divided into sprints. Normally sprints occurred two times within a month. At the starting of each sprint, development requirements are identified and a development process is planned in presence of all team members. Then the project manager and team lead divide the sprint into small stories and break the small stories into tasks. Each task is assigned to individual team

members and it is the duty of the team members to fulfill the task within the given time schedule.

#### 2.7.6 Daily Stand Up

At the start of each working day, a daily stand up is hosted by the team leader and all the team members are invited. The standup plays an important role in development, as all team members clear their dependency of work with others. Each team member also needs to specify what he has done yesterday, what he will do today and if he needs any cooperation from other team members. As a result, the whole team remains up-to-date about the current status of their project and shares their knowledge themselves.

#### 2.7.7 Employee Facilities

High productivity of employees plays a vital role in the economic development of an organization. Salary is only the hygiene factor of job satisfaction. Motivating factors influence the employee's dedication towards his work. LEADS provide various facilities to their employees. These facilities includes

- ❖ Workplace with High Speed Internet
- ❖ Provident fund facilities
- ❖ Leave fare assistance
- ❖ Festival bonuses
- ❖ Free medical treatment for spouse and children (up to 18 years)
- ❖ Mobile telephone bill
- ❖ Reward and recognition
- ❖ Paid sick leave up to 14days

### 2.8 Product Development Process

- ❖ Requirements and specifications
- ❖ Prototype Development
- ❖ Architecture and product design
- ❖ Code Complete
- ❖ Testing
- ❖ User Acceptance Testing (UAT)

## **2.9 Products**

Leads develop products from multiple categories. But most of the software developed in Leads is for banks. Product are-

### **1. Bank**

- 1.1. Bank Ultimus
- 1.2. nCore
- 1.3. TouchPoint
- 1.4. Front Money
- 1.5. X- chequer
- 1.6. Islamic windows
- 1.7. Plug – B
- 1.8. Sanction Screening System (S3)

### **2. NBFI**

- 2.1. finUltimus
- 2.2. X-chequer
- 2.3. Front Money
- 2.4. Verified

### **3. Insurance**

- 3.1. Insur Soft
- 3.2. I-Life

### **4. Capital Market**

- 4.1. Capita

## **5. ERP**

- 5.1. Center Point
- 5.2. Human Resource Information System (HRIS)

## **6. Digital Innovation**

- 6.1. Block Chain
- 6.2. Internet of Things (IoT)
- 7. Data Warehouse and Analytics
  - 7.1. LIA (Chat bot AI)
  - 7.2. Ultimus Analytics (Business Intelligence)

## **2.10 Tools & Technologies**

LeadSoft uses an immensely diversified set of tools and technologies. They are mentioned below:

### **2.10.1 Programming Languages**

- C#
- Python
- Java
- Dart
- Kotlin
- JavaScript
- HTML 5.0
- CSS 3.0
- Bootstrap
- jQuery
- AngularJS

### **2.10.2 IDE**

- Visual Studio Code
- Visual Studio
- IntelliJ
- Eclips

### 2.10.3 Database / RDBMS

- MS SQL Server
- Oracle
- PL/SQL
- Entity Framework
- Entity Framework Core
- LINQ
- Dapper

### 2.10.4 Technologies

- Microsoft .NET
- MSMQ
- ADO .NET
- ODP .NET
- SOAP (REST)
- Microsoft SQL Server Management Studio

### 2.10.5 Application / Web Servers

- Microsoft IIS
- Oracle
- Tomcat
- Web Logic
- Apache
- JBoss

### 2.10.6 Web Application Framework

- ASP.NET Framework
- ASP.NET Core
- Spring

### 2.10.7 Project Management Tools

- Microsoft Project
- SharePoint
- Visual SourceSafe
- Team Foundation Server (TFS)
- Maven
- GitHub
- SVN

## 2.10.8 Design Methodology

Object Oriented  
Structural Analysis  
UML  
Agile Development  
DevOps

## 2.10.9 Digital Innovations

LeadSoft has a pretty rich innovation wing. Research and Development (R&D) activities regarding latest technologies are performed on a regular basis. In fact, LeadSoft has a dedicated department regarding R&D of the latest technologies. They work with IOT, Blockchain and other latest technologies.

## 2.11 Location

LEADS Corporation address is:

M-20, LEADS TOWER, Main ROAD-1, Dhaka 1206

## 2.12 Employment Types

### A. Regular:

Regular Associates are appointed for full time jobs and are expected to continue with the company till retirement. No Regular Associate is allowed to take up any part time job or be engaged in any business, vocation or profession other than the business of this company.

### B. Contract:

A person may be employed on a Contract basis for a specific job for a fixed period of time. Contract Associates can be either full time or part time, and paid on monthly, weekly or hourly basis. The terms and conditions of such employment will be agreed upon between the Company and the Associate, and detailed in the Contract. The company may renew this employment.

### C. Trainee:

The Company may appoint an individual as Trainee for a fixed period of time, and train him/her to perform a particular job. On satisfactory completion of such training the incumbent may be offered Regular Employment.

### D. Intern:

The Company may appoint any number of individuals as Intern for specified time and terms. Such Interns are expected to acquire practical knowledge on a specified field of the

company operation. Any of the Internees may be offered permanent employment with the company at the end of the Internship program.

# Chapter 3 : Acquired Skills

I have learned a lot about android development. Even during my Software Project Lab 2 (SPL2), I have completed my project on the Android platform. By seeing my ability I was assigned to the “Mobile App” Team as an android developer. Mobile app team is such an amazing team. I feel lucky to have myself in such a team.

## 3.1 Technologies

### 3.1.1 Dart

#### 3.1.1.1 Dart Introduction

Dart is an open source general-purpose programming language, which was developed by google and later approved as a standard by ECMA. It is meant for server as well as browser also. It is object-oriented, class-based with c-style syntax. It can compile to either native code or JavaScript. It supports interfaces, mixins, abstract classes, reified generics and type interfaces.

#### 3.1.1.2 Dart Playground

Dart playground is an online playground like notepad, sublime text editor etc. where we can play our dart code in a simple and beautiful way. It is named “DartPad”. The left side of the pad has the space where we can write our dart code whereas the right side has two spaces named console and documentation. It also provides a lot of samples.

### 3.1.2 Flutter

Flutter is Google's UI toolkit for building beautiful, natively compiled applications for iOS, android, desktop and web from a single codebase. The goal is to enable developers to deliver higher performance apps that feel natural on different platforms. Apps are written in dart, which looks familiar if we have used languages like java or javascript.

Flutter includes a modern react-style framework, a 2D rendering engine, ready-made widgets, and development tools. These components work together to design, build, test, and debug apps.

In flutter everything is a widget. Widget is the building block of Flutter user interface. It has a constituent, unified object model: widget i.e. flutter framework doesn't separate views, view controller, layouts and other properties. Widgets are composed of many small, single purpose widget in flutter.

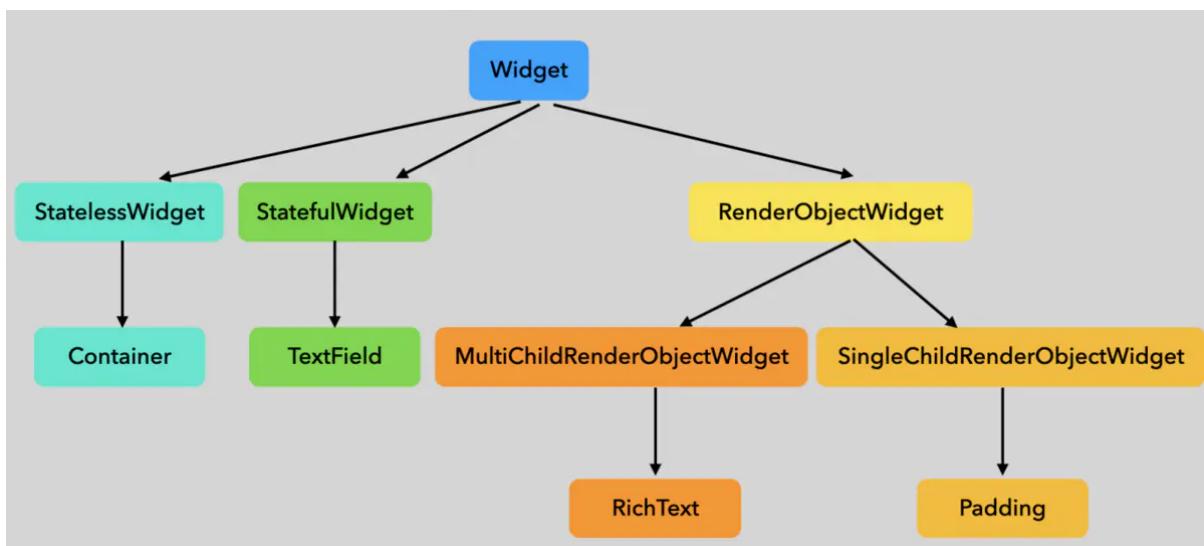


Figure 6: Flutter widgets

Flutter framework is organized into a series of layers. Each layer is building upon previous layer.

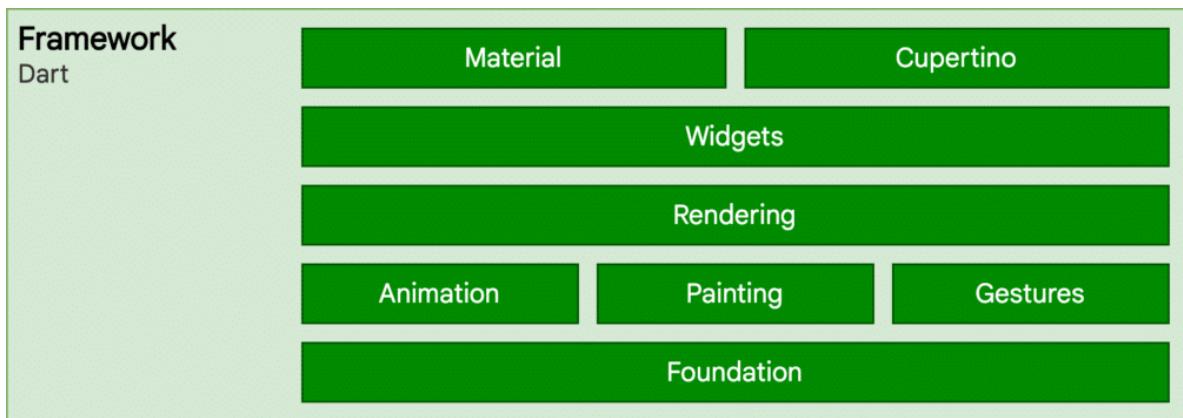


Figure 7: Flutter layer cake

### 3.1.3 Flutter vs React Native

Building cross-platform mobile apps are trending these days. React Native and Flutter are two most popular cross-platform mobile development frameworks that are used to build thousands of apps.

Both React Native and Flutter come with a lot of similarities like building cross-platform apps using one codebase, hot reloading, excellent UI, awesome tooling and native features. But they do have some differences.

Reactive Native is written entirely in JavaScript whereas Flutter is written in dart. As Dart is new, it doesn't have as much popularity as JavaScript. React Native is backed by Facebook and was open sourced by Facebook, whereas Flutter is backed by another giant Google and is open-source SDK for creating apps for Android and iOS using a single codebase.

Flutter has most of the native components in the framework itself whereas React Native uses JavaScript bridge to communicate with native modules which results in poor performance. Flutter is rich in development APIs and UI components while React Native is too dependent on third party libraries. Products like Facebook, Instagram, Uber Eats, Tesla and others are developed using React Native. There are very few products developed using flutter such as Alibaba has adopted it for one the product, Google Ads and Hamilton. But in the near future we might see more products of flutter as they don't have performance issues.

React Native community has no official support for integration and UI level testing, while Flutter has great documentation and a rich set of testing features. Flutter apps are easy and painless to set up on CI/CD services by using its strong CLI tools. React Native doesn't provide any official instructions for CI/CD practices.

### 3.1.4 Application Programming Interface (API)

API is an interface or communication protocol between different parts of a computer program intended to simplify the implementation and maintenance of software i.e. it is also called middle ware. It May be for web-based, OS, DB-system, computer hardware or software library. There are different types of API.

#### 3.1.4.1 REST API

It stands for Representational State Transfer. It determines how APIs look like. It is the set of rules that developers follow when creates the API.

There are different REST API verbs, some of them are:

##### 3.1.4.1.1 POST

This request is used to create new resources on server i.e. if we perform this request it creates a new entry in the database and tell us whether the creation is successful or not. It performs 'CREATE' operation.

##### 3.1.4.1.2 GET

This request is used to get resources from a server i.e. if we perform this request it looks for a requested data in the database and send back to us. It performs 'READ' operation.

##### 3.1.4.1.3 PUT

This request is used to update resources on server i.e. if we perform this request the server updates data in the database and tell us whether the request is successful or not. It performs 'READ operation.

##### 3.1.4.1.4 PATCH

This request is same as 'PUT' request.

##### 3.1.4.1.5 DELETE

This request is used to delete resources from the server i.e. if we perform this request the server deletes the data in the database and tell us whether the request is successful or not. It performs 'DELETE' operation.

## 3.2 Tools

### 3.2.1 Android Studio

Android studio is the official Integrated Development Environment (IDE) for android app development based on IntelliJ IDEA. It provides build-in support for Google cloud platform, making it easy to integrate Google cloud messaging and app engine.

#### 3.2.1.1 Apps Development with Flutter SDK

Android Studio allows developers to building android apps with flutter. Developers can use flutter SDK with Material or Cupertino design to design their apps. They can also import external packages to make design attractive.

#### 3.2.1.2 Debug

Android studio provides debugging opportunities to debug the code in an efficient way.

#### 3.2.1.3 Version Control

Android studio integrates the version controlling system (github) within the tools and developers now commit their code easily. Actually, this makes the code far more manageable.

#### 3.2.1.4 Publish app to Google play store

Android studio allows developers to publish their app to the playstore.

### 3.2.2 Postman

Postman is a collaboration platform for API development. Or we can also say it as an API development tool which helps to build, test and modify APIs. It presents us with a friendly GUI for constructing requests and reading responses. It has the ability to make various types of HTTP requests (GET, POST, PUT, PATCH), saving environments for later use, converting API to code for various languages.

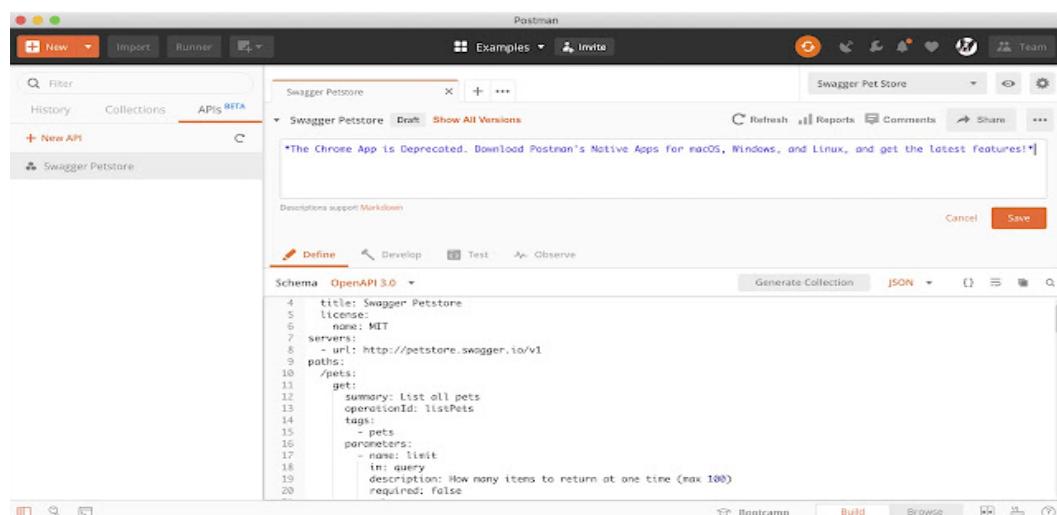


Figure 8: Postman interface

### 3.2.3 Azure DevOps

Azure DevOps Server is a Microsoft product that provides version control, reporting, requirements management, project management, automated builds, testing and release management capabilities. It covers the entire application lifecycle, and enables DevOps capabilities. Along with my team I have used Azure DevOps for Azure Boards, Repos, Pipelines etc service.

## 3.3 Design Pattern

Design patterns are reusable solutions to common problems in software design. They're templates designed to help you write code that's easy to understand and reuse.

### 3.3.1 MVC

MVC stands for Model View Controller. It is an architectural pattern that separates objects into three distinct groups:

**Model-** It includes all the data and its related logic. It responds to the request from the views and also responds to instructions from the controller to update itself and is the lowest level of pattern which is responsible for maintaining data.

**View-** It presents data to the user or handles user interaction. It is responsible for the UI. Views are created by data collected from the Model. View request the model to provide data so that it can represent output data presentation to the user.

**Controller-** It is an interface between Model and View components. It is the part of the application that handles user interaction. It interprets the mouse and keyboard inputs from the user informing model and view to change as appropriate.

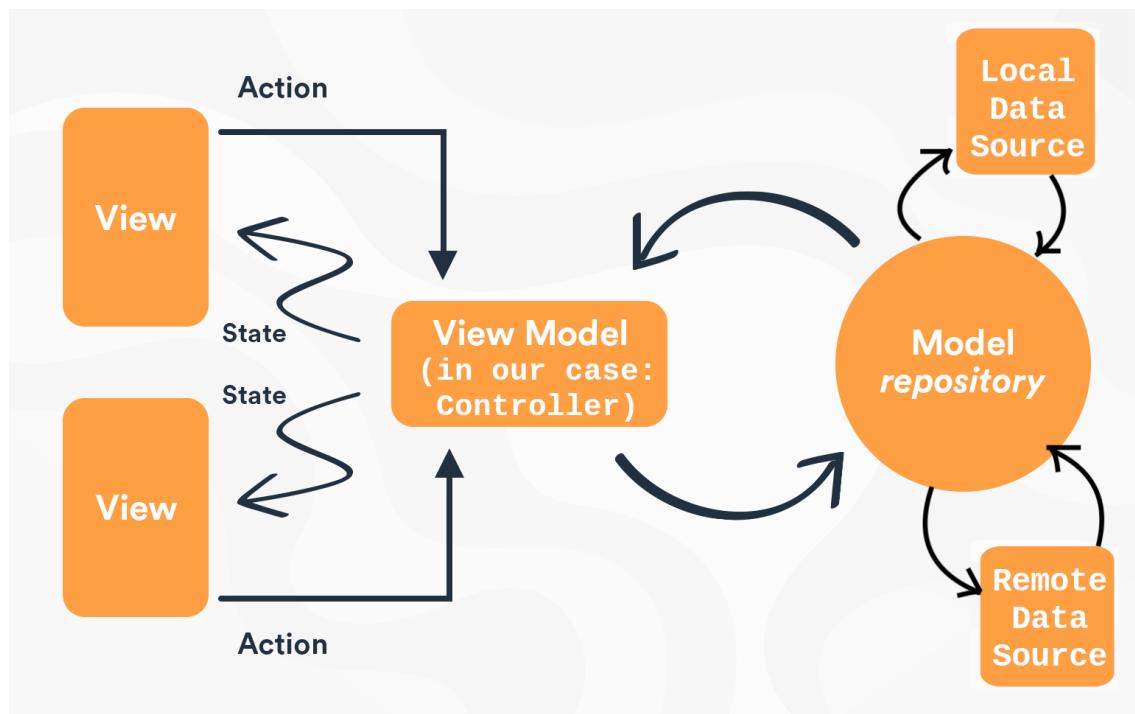


Figure 9: MVVM Architectural pattern

### 3.3.2 MVVM

MVVM stands for Models Views View models. It offers two-way data binding between view and view model. It is structural design pattern that separates objects into three distinct groups:

**Models-** It holds application data. They are usually simple classes.

**Views-** It displays visual elements and control on the screen. They are typically subclass of the UI view. It is a transformed model into a User interface.

**View Models-**It is responsible for presenting functions, commands, methods to support the state of the view. It is accountable to operate the model and activate the events in the view. They are usually classes, so they can be passed as references.

### 3.3.3 BLoC

BLoC stands for Business Logic Component. Flutter has brought a new reactive style that is not entirely compatible with MVC. The gist of BLoC is that everything should be represented as a stream of events. BLoC sits in the middle, managing the conversation. We don't need to import any plugin for this pattern because Flutter comes with everything that we need.

This pattern is similar to MVC. The UI/Flutter layer can only talk to the BLoC layer and the BLoC layer sends events to the data and UI layer and processes business logic.

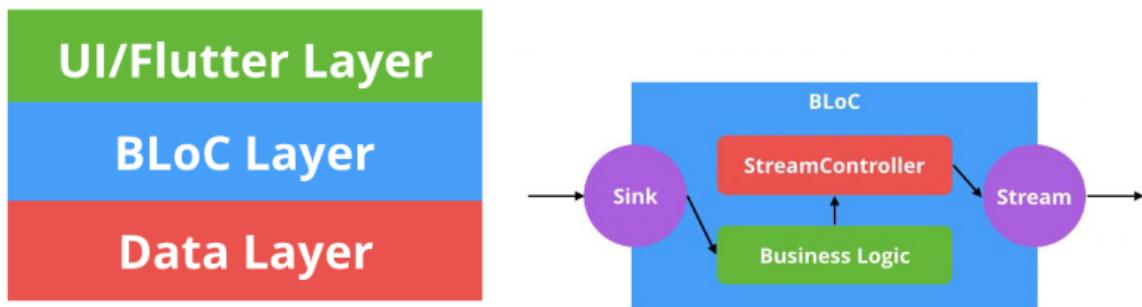


Figure 10 : BLoC pattern

### 3.4 Professional Learning

#### 3.4.1 Teamwork

Each and every project runs under a team. My team name is ‘Mobile Apps Development’. I work in a team environment that teaches me, success or failure depends on team performance. If the single individual fails then the whole team fails. Working with a team gave me an amazing experience.

#### 3.4.2 Accountability

Everyone is responsible for his/her task. I understand the importance of an individual in a team. If anyone faces difficulty, the team leader will help him to complete the task. But it is necessary that the task must finish accordingly.

#### 3.4.3 Communication Skill

I learn how to talk and manage clients. Convincing the client is an important quality and I learned the basics of that. Apart from that, communication with supervisors and higher authority is also learned.

#### 3.4.4 Self dependent

Self-dependent is yet another soft skill that I have learned. Especially when you are the single developer working under a certain team, you have to deal with all the issues that have been raised.

#### 3.4.5 We, not I

Every success comes from team effort. So there is no I thing rather it should be we thing. My team believes in this philosophy which makes our team more organized, responsible and reliable.

#### 3.4.6 Meetings

I attend the stand up meeting every morning. In the meeting, the plan of the day and what we did on the previous day is defined. This helps to understand the responsibility of each team

member. Apart from this, we attend a meeting with the general manager quarterly.

### 3.5 Allotted Resources

In LEADS Corporation Limited, there is not much difference between a regular employee and an intern. Like a regular employee, we were given a computer desk, a desktop, internet connection and a drawer with keys.

### 3.6 Challenges

Due to the pandemic situation for Covid-19, LEADS had to shift their office into virtual work space. Working from home was both a learning process as well as a major challenge for me as a working environment like the office couldn't be fully ensured for the lack of broadband connection at my residential place. Again it was also a big challenge for me to collaborate with my new teammates virtually and to cope up with the change in my work.

# Chapter 4 : Project Work

## 4.1 i-Life

The objective of the product is to adopt paperless policy sales. Considering this objective, they want to launch an App such that a Policy Holder or Financial Associates can capture the proposal information and Policy Holder can deposit the premium and they can know the policy information. Organization has assigned me to do maintenance on the live project if any issue occurs and refactor the project codebase.

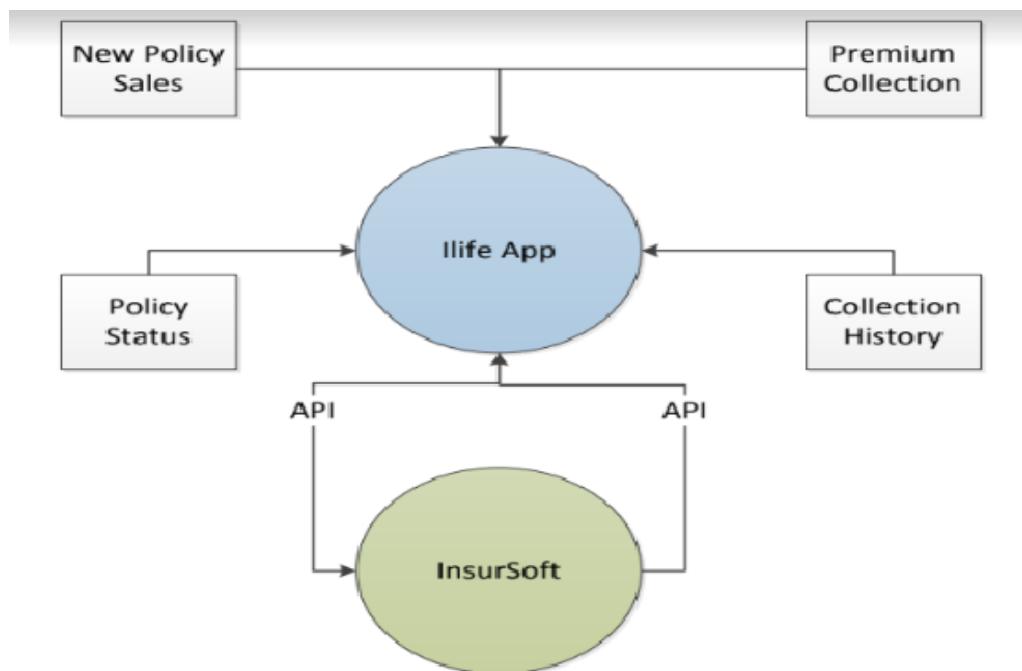


Figure 11 : I-Life structure

### 4.1.1 Tools

- ❖ Android studio
- ❖ Postman
- ❖ Android device (Samsung, OnePlus)
- ❖ IntelliJ
- ❖ Git

### 4.1.2 Technologies

- ❖ Flutter framework is used with Material design to refactor and maintain the android app of this project.

- ❖ As flutter uses dart language. This project is carried out in dart language.
- ❖ Flutter uses the BLoC pattern. MVVM and BLoC pattern is used to design the project.
- ❖ Java and Spring Boot are used as API development.
- ❖ Oracle database and tomcat server.

#### 4.1.3 Role

- android apps developer

#### 4.1.4 Contributions

I-Life was an android project and the live project was maintained by me since I joined the EMAS (Enterprise Mobile Application and Service) team. Also **I am refactoring the whole project codebase to increase the readability and re-useability**. Also I made some documentation (project flow diagram, features list) for the i-Life after learning the full project, as there was no documentation for this project. I also designed some new features prototype for this project and sometimes I tested other apps which were developed by our team members. Also I developed different types of flutter App features which will be added in the project when needed. Some of them are nid scanner, different types of transition animation, pop-up animation, bottom navigation animation, session management, color theming etc. I have solved different issues of the project in the internship period. Some major issues which I solved are-

- PDF generating issue
- Saving document in Storage issue
- API response error issue
- Bkash keyboard loading issue
- Nagad keyboard loading issue

Project holds policy information, proposal information and user information, premium collection. The scope of the project is:

##### 4.1.4.1 New Policy Sales

Financial Associates (FA) for policy holder will fill up the proposal form with basic and minimum information such that user can feel comfort to use this App.

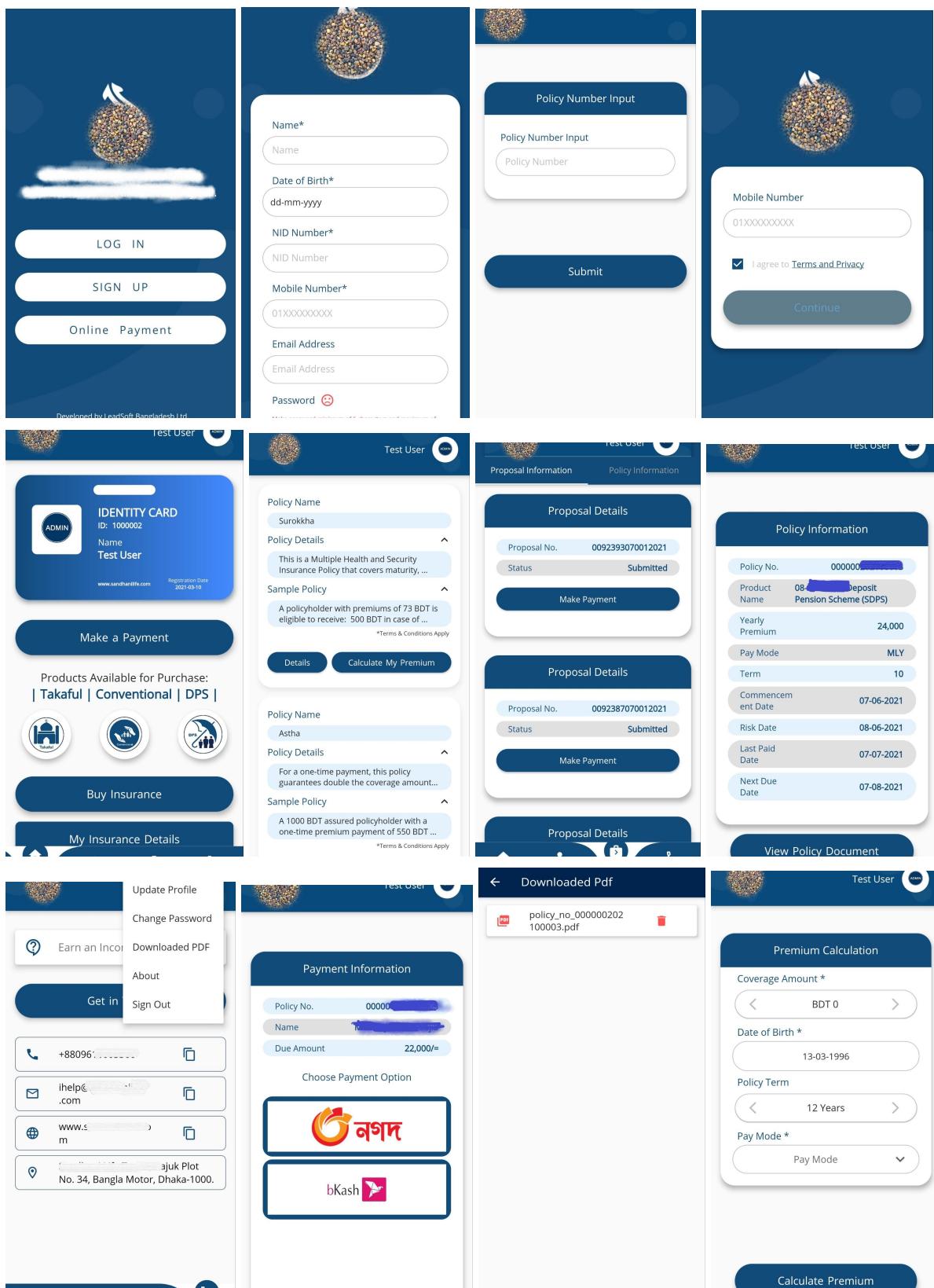
##### 4.1.4.2 Premium Collection

Policy holder or on behalf of policy holder a FA will deposit the First Premium or Renewal premium.

##### 4.1.4.3 Policy Status

Policy holder will show the policy information and premium payment information

#### 4.1.5 Some Screenshot of the project



The screenshots show the following steps:

- Premium Amount**: Shows product details: Product Name (Surokha), Coverage Amount (5,000.0 BDT), Policy Term (12 Years), Payment Mode (Yearly), and Premium Amount (364.0 BDT). A "Buy Now" button is at the bottom.
- Fill Up Information**: A summary screen with a progress bar showing "Personal Info" completed. It includes "Add Nominee" and "Submit" buttons.
- Personal Information**: Fields for Name (As per NID) \* (Test User), Mobile Number \* (01779665922), Date of Birth \* (13-03-1996), Gender (Male selected), and Marital Status.
- Personal NID Information**: Fields for NID Number \* (12345678900), Citizen Status \* (Bangladeshi), and file upload fields for "Choose NID Front Image \*" (a photo of a mouse) and "Choose NID Back Image \*".
- Personal Address Information**: Fields for Profession \* (Business-Small), Source of Income \* (Business), Annual Income Amount (BDT) \* (5,200,000), Email Address, and Present Address (Present Vill/House No/Road No \*).
- Nominee Information**: Fields for Nominee Name, Mobile Number \* (Mobile Number), Relation with Proposer \* (Select Relation), Date of Birth \* (dd-mm-yyyy), and Gender.

## Chapter 5 : Conclusion

The internship program helped me to gain important knowledge on the software industry, their culture, work environment and all about software development.

Participating in team meetings with Project manager, scrum master and other team members and discussing the threats of the projects helped me attain the faith to develop a never give up attitude. At the same time it helped me learn the software life cycle used in the software industry and inspired me to be stronger, responsible and confident.

The internship program has increased my team work capabilities as well as respect to the team mate's ideas and suggestions. Team discussions like brainstorming sessions helped me identify and solve numerous problem issues which would have been impossible to solve otherwise.

I would like to convey my thanks to IIT, DU for providing me an opportunity to gain an idea of the competitive environment in the professional field. It has certainly lifted my software development skills in terms of design and coding. I now look forward to facing the upcoming challenges of the world.

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