NEW HORIZON COLLEGE OF ENGINEERING

Autonomous College, Affiliated to VTU | Approved by AICTE New Delhi & UGC
Accredited by NAAC with 'A' Grade & Accredited by NBA

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

AN INTERNSHIP REPORT

on

Frontend Application Development

Submitted in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

by

TRIVENI A
USN: 1NH20CS230

INTERNSHIP CARRIED OUT AT
Nuron Networks Private Limited

Under the guidance of

INTERNAL GUIDE:
Ms. Surya Pandey
Assistant Professor
Department of CSE, NHCE

EXTERNAL GUIDE:
Mr. Asish Kumar Behera
Project Manager-Applications
Nuron Networks Private Limited

INTERNSHIP COMPLETION CERTIFICATE

Date: October 8, 2022

Ref: NURON/HR/BG/2022-23/0203A

INTERNSHIP COMPLETION CERTIFICATE

To,

Miss. Triveni A

501, Anugraha, 1st Cross,

Munireddy Layout,

Kadubeesanahalli,

Bangalore – 560 103

Sub: Internship Completion Certificate

This is to certify that Miss. Triveni A has successfully completed the internship in the field of Application Development (Front End) from August 24, 2022 till October 8, 2022.under the guidance of Mr.Asish Kumar Behera – Project Manager and A Nayan Aahladh – Junior Engineer.

During the period of her internship program, she had been exposed to different Front End processes and and was found diligent, hardworking and inquisitive.

Wishing you good luck for your future endeavours.

Thanking You,

Yours truly,

Jayashree R

Head – Human Resources

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

It is hereby certified that the Internship work entitled Frontend Application Developer is a Bonafide work carried out by TRIVENI A (1NH20CS230) in partial fulfilment for the award of Bachelor of Engineering in COMPUTER SCIENCE AND ENGINEERING of New Horizon College of Engineering during the year 2021-2022. The Internship report has been approved as it satisfies the academic requirements in respect of Internship work prescribed for the said Degree.

Signature of Guide **(Ms. Surya Pandey)**	Signature of HOD **(Dr. B. Rajalakshmi)**	Signature of Principal **(Dr. Manjunatha)**

External Viva

Name of Examiner	Signature with date
1.	.....
2.	.....

PLAGIARISM CERTIFICATE

[redacted]

ORIGINALITY REPORT

23%	%	23%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	[redacted] Replace this picture with your Plag Certificate Publication	2%
2	[redacted] Publication	2%
3	[redacted] Publication	2%
4	[redacted]	2%

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be impossible without the mention of the people who made it possible, whose constant guidance and encouragement crowned our efforts with success.

I have the great pleasure in expressing our deep sense of gratitude to **Dr. Mohan Manghnani**, Chairman of New Horizon Educational Institutions for the providing necessary infrastructure and creating a good environment.

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I also express my gratitude to **Ms. Surya Pandey,** Assistant Professor, Department of Computer Science and Engineering, NHCE, my internal guide, for monitoring and reviewing the internship regularly.

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I would also like to thank **Mr. A.Nayan Aahadh**, Junior Engineer, Department of Engineering, Nuron Networks Private Limited for his constant support and guidance.

Finally, a note of thanks to the teaching and non-teaching staff of the Department of Computer Science and Engineering, NHCE, who helped me directly or indirectly in the course of the internship.

TRIVENI A (1NH20CS230)

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CHAPTER 1

INTRODUCTION

1.1.ABOUT THE INTERNSHIP

Internship was done at Nuron Networks India Private Limited.

It was a 4 days internship spanning from 24th August 2022 to 10th October 2022.

The work during the internship was in the domain of Application frontend development using Android Studio and Flutter.

It was a hybrid internship both online and offline.

1.2.SCOPE OF WORK

An Application frontend development scope of work is to design and develop the frontend of the application. Unit-testing code for robustness, including edge cases, usability and general reliability. Bug fixing and improving application performance.

Four wireframes including login page, dashboard, offer page and the profile page are made to ease the process into 4 phases using dart and flutter.

Dart is a programming language designed for client development, such as for the web and mobile apps. It is developed by Google and can also be used to build server and desktop applications. It is an object-oriented, class-based, garbage-collected language with C-style syntax. Google has introduced Flutter for native mobile app development on Android, iOS and Windows. Flutter is a mobile app SDK, complete with framework, widgets, and tools, that gives developers a way to build and deploy mobile apps, written in Dart. Flutter works with Firebase and other mobile app SDKs, and is open source.

Flutter is an open-source UI software development kit created by Google. It is used to develop cross platform applications for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase.

1.3. GIVEN PROJECTS

Application creation using Andromo

Creating wireframes using Android studio's activity.xml

Creating wireframes using dart in Android studio and linking them together.

Application Demo and Testing

1.4. HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirements:

- A Personal Computer
- Minimum of 2gb RAM
- 64 bit Operating system
- Windows 10 or above

Software requirements:

- Android Studio
- Git
- Flutter

CHAPTER 2

DESCRIPTION OF THE ORGANIZATION

The aim of Nuron is to reimagine and revolutionize internet services.
How we can reimagine and revolutionize internet service is a question we set out to answer, and here is how. We focus on delivering high-speed broadband services for everyone, from homes to enterprises, using our advanced cloud services, resulting in a buffer-free experience for the users.

In a pursuit to deliver on what we have promised, we collaborate with experienced local cable operators and service providers and take over and manage their network with our clever software solutions. It gives us immediacy and swiftness in detecting network breaks and their rectification, eventually resulting in a rich and prompt service experience for the users. Our technical prowess and experience in the telco industry helped us create Nuron with the mission to challenge the status quo.

Fig.2.1.Nuron Logo

2.1 HISTORY OF NURON

How Did Nuron Come Into Existence?

Nuron, headquartered in Bangalore and established in 2018, takes inspiration from the word neuron – cell in the human body responsible for the transmission of every impulse, sensation, and action call. Millions of neurons form the nervous system of the body. We wanted to bring out the same essence with our network service.

Nuron is a team of passionate professionals who have sharpened their skills in the biggest telco companies. We came together for the collective vision to rethink the internet scenario in the country. We felt there was still room to make things better in this sector. We use the same internet services you use. We are aware of the challenges and problems you face. So, we decided to take the matter into our own hands. Our know-how of the traditionally functioning giants told us we could do something disruptive. Hence, Nuron was born. Nuron signifies progressive, transparent, and intelligent networks for the always-on needs of the current era.

CHAPTER 3

DESCRIPTION OF THE DEPARTMENT

3.1 ENGINEERING AND R&D DEPT

Engineering, the application of science to the optimum conversion of the resources of nature to the uses of humankind. The words engine and ingenious are derived from the same Latin root, ingenerare, which means “to create.” The early English verb engine meant “to contrive.”

An R&D engineer performs research and development duties for their company. They use research theories, principles and models to perform a variety of experiments and activities. Not only do R&D engineers create new products, but they also redesign existing company products. As R&D Engineer, you will be responsible for developing and improving a wide range of production processes. The role requires variety of technical engineering skills ranging from ideation to development/production.

CHAPTER 4

GENERAL ROLES AND RESPONSIBILITIES

Main roles and responsibilities of training were to learn:

1. How to determine and measure program complexity
2. Dart Programming on Android Studio
3. Activity.xml pages on Android Studio
4. Java Programming on Android Studio
5. Flutter as a plugin
6. Supervised and Unsupervised Learning
7. Classification and Regression
8. Neuromorphism and its designs
9. Figma for frontend development

The program included doing 2 frontend projects, one based in Figma for frontend development and the other on Android Studio using Activity.xml pages and java. It then upgrades to the main internship project to enhance learning based on the prior basics learnt and create a working model of an application using dart on Android Studio.

CHAPTER 5

ACTIVITIES CARRIED OUT BY THE STUDENT

5.1 HARDWARE REQUIREMENTS

Hardware Requirements:

- A Personal Computer
- Minimum of 2gb RAM
- 64 bit Operating system
- Windows 10 or above

5.2 SOFTWARE REQUIREMENTS

Software Requirements:

- Android Studio
- Flutter
- Dart
- Git

5.3 OVERVIEW

This application is designed using Android Studio and Flutter. This application is designed for Nuron . It has 4 user interface designs first developed as wireframes. The first wireframe is the login page. The user enters their username and password and logs in

leading them to the second page which is the dashboard of the application. The dashboard consists the user's internet usage of the chosen package and the details of their package. We can use a burger menu and the profile button to show the profile page which has all the user details. Lastly, there is the offers page which shows different offers for the user to choose their internet package. This is the final working project created using Dart.

CHAPTER 6

PROJECT WIREFRAMES- ACTIVITY.XML

6.1 WIREFRAME OF LOGIN

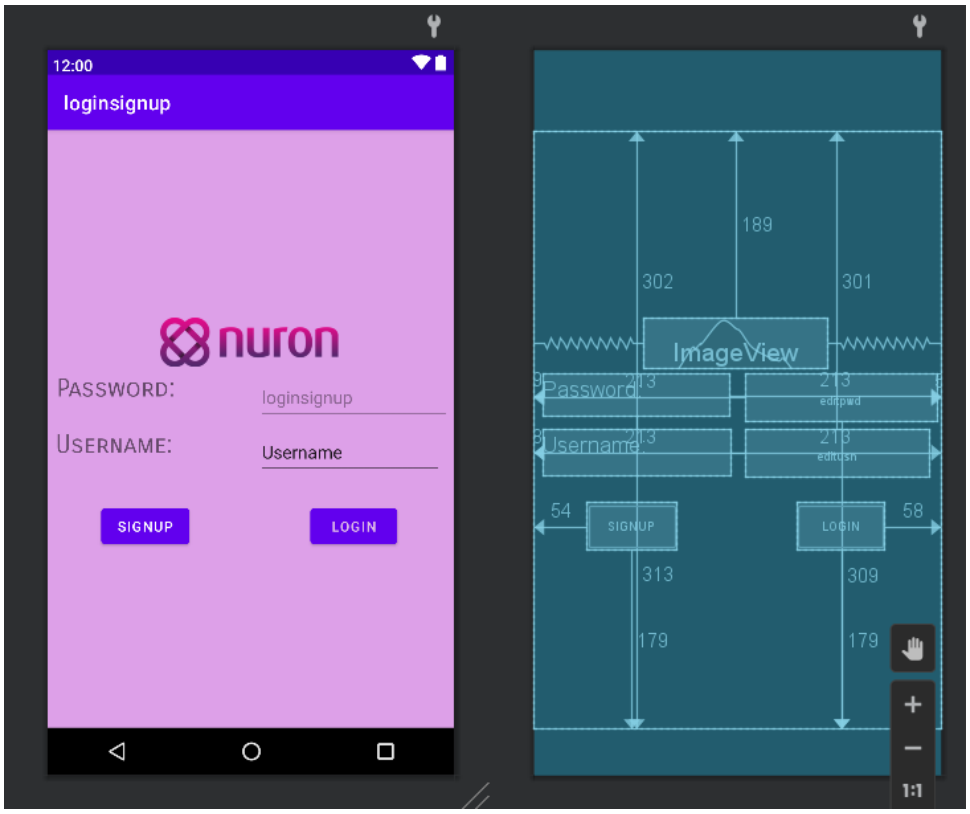

Fig.6.1.Login

6.2 WIREFRAME OF DASHBOARD

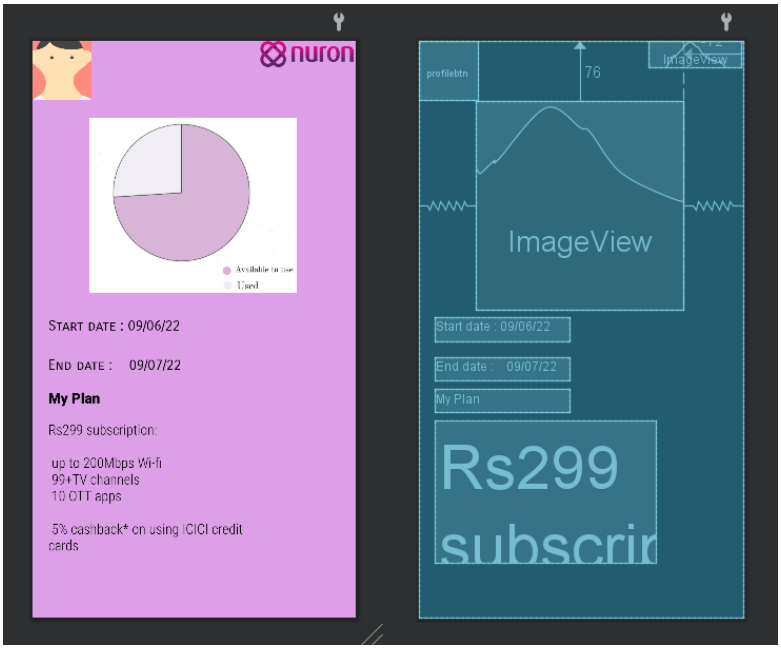

Fig.6.2.Dashboard

6.3 WIREFRAME OF PROFILE

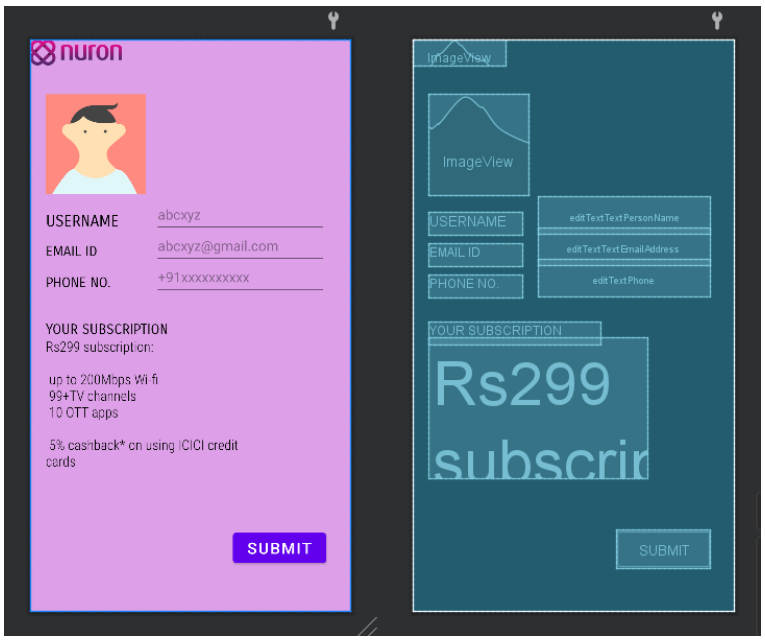

Fig.6.3.Profile

6.4 WIREFRAME OF OFFER PAGE

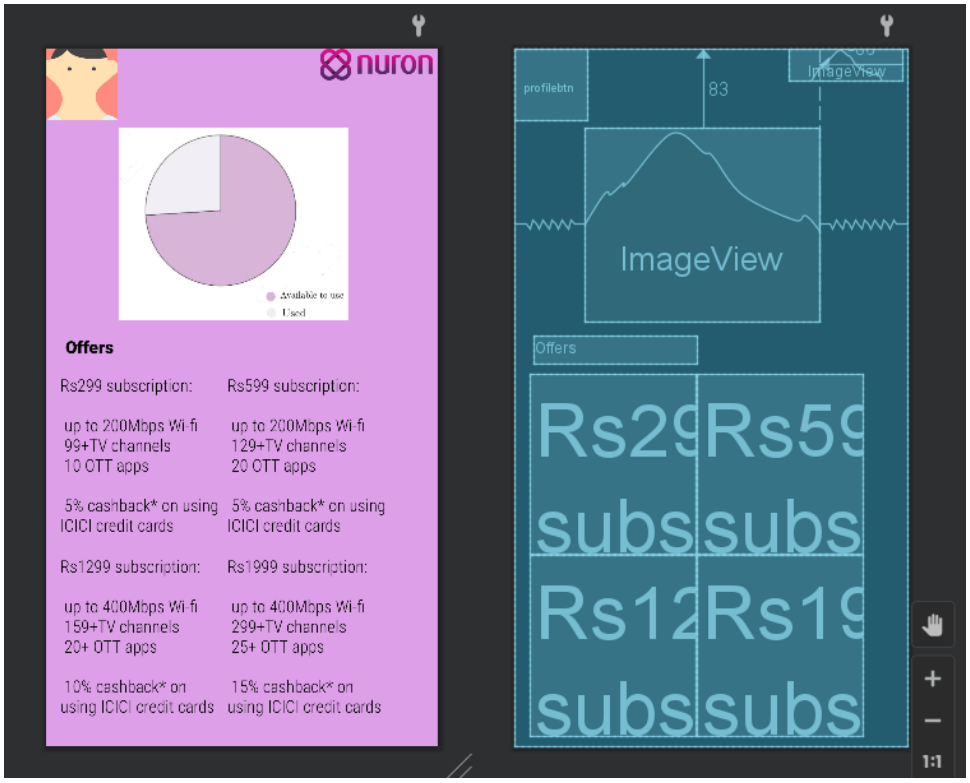

Fig.6.4.Offers

CHAPTER 7

NEUROMORPHIC WIREFRAMES – FIGMA

7.1 WIREFRAME OF REGISTRATION AND DASHBOARD

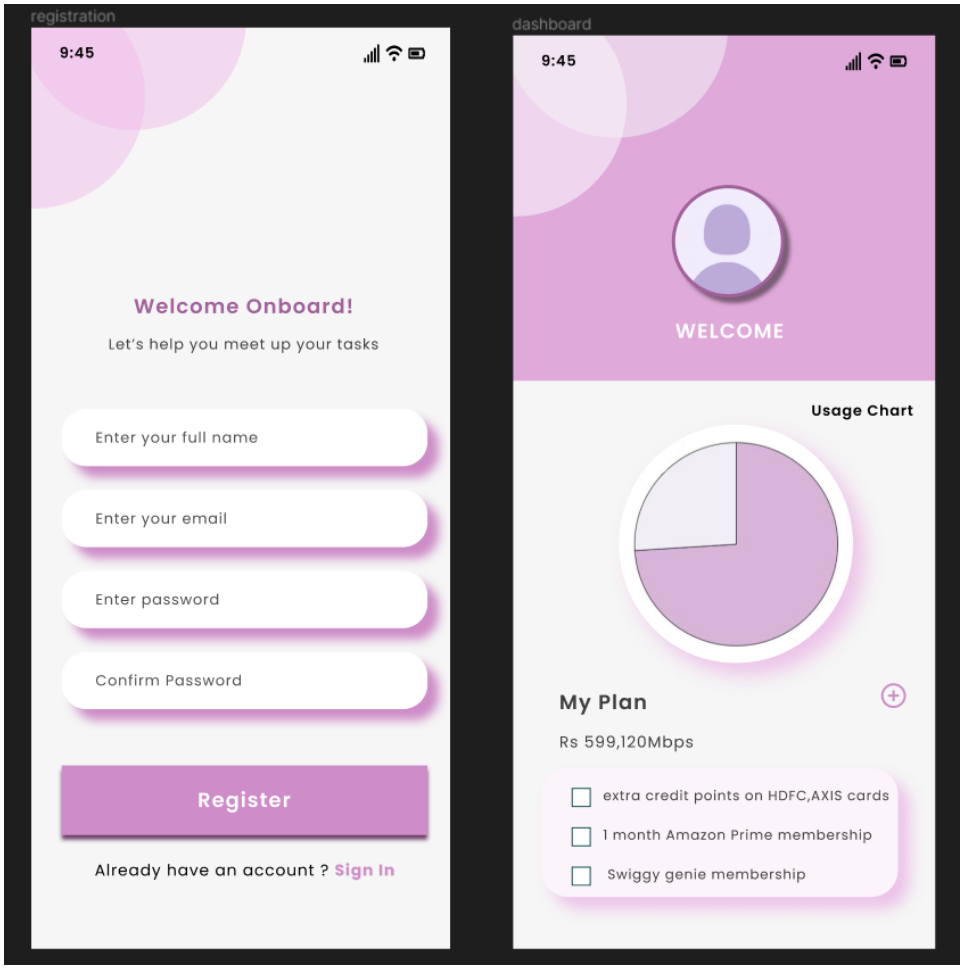

Fig. 7.1: Reg and Dashboard

7.2 WIREFRAME OF LOGN AND OFFER PAGE

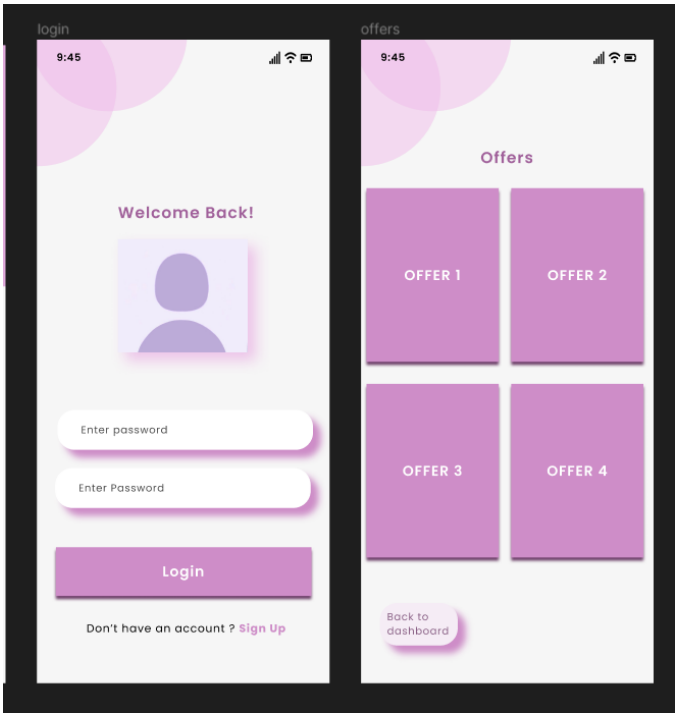

Fig. 7.2: login and offers

7.3 NAVIGATION BETWEEN THE PAGES

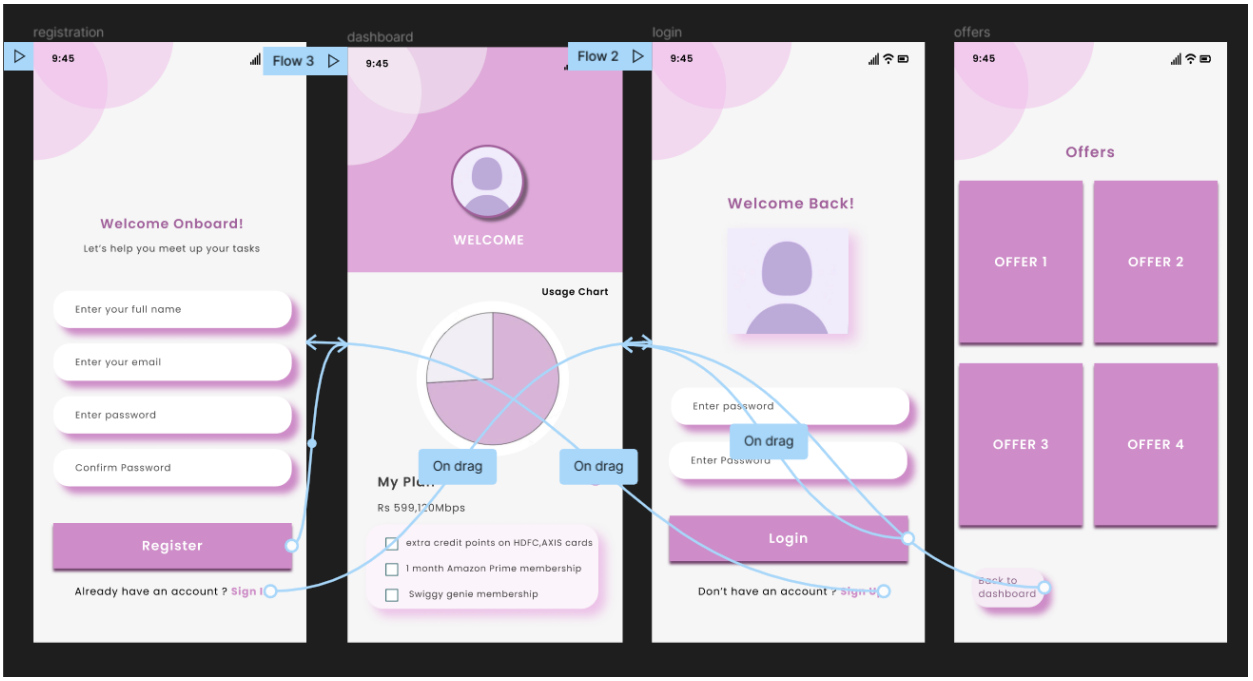

Fig. 7.3: Navigation

CHAPTER 8

PROJECT WIREFRAMES- DART

8.1 WIREFRAME OF PROFILE

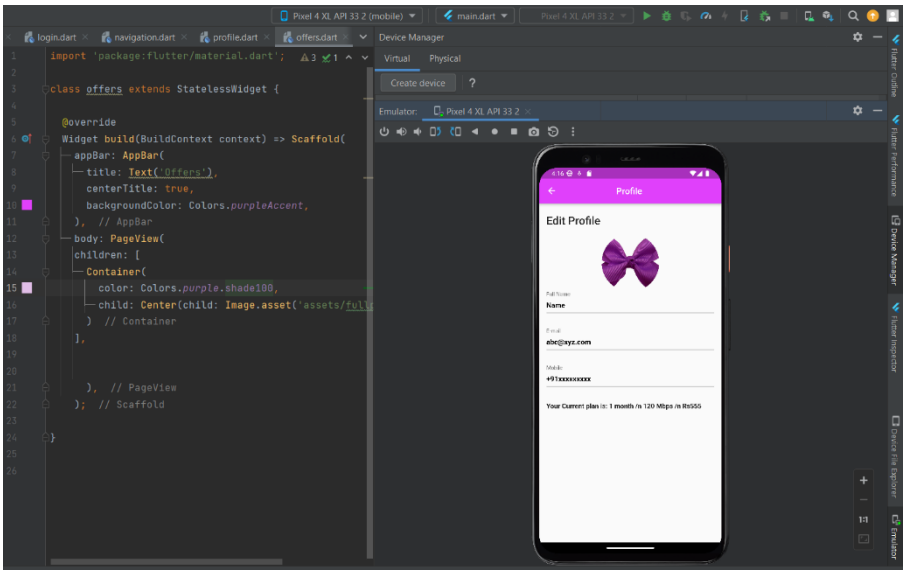

Fig. 8.1: Profile

8.2 WIREFRAME OF DASHBOARD

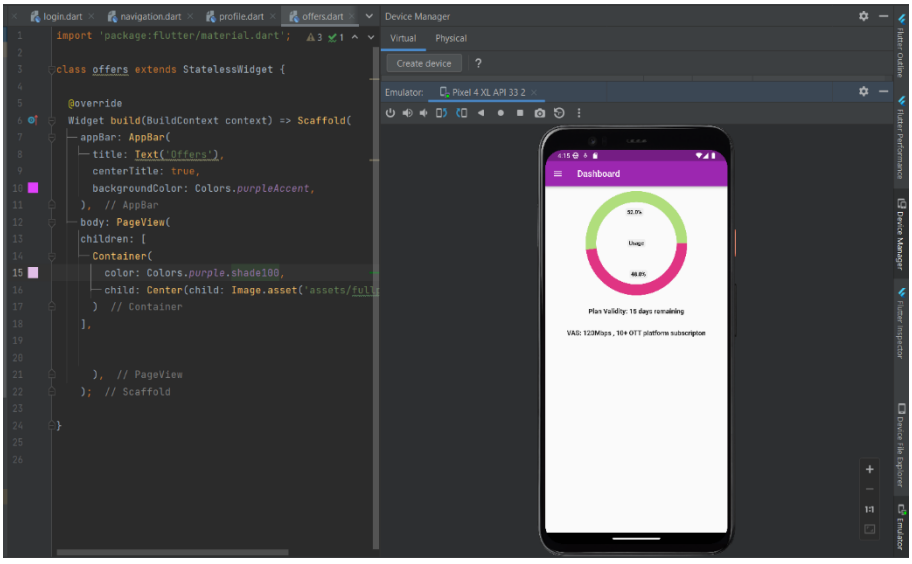

Fig. 8.2: Dashboard

8.3 WIREFRAME OF BURGER MENU

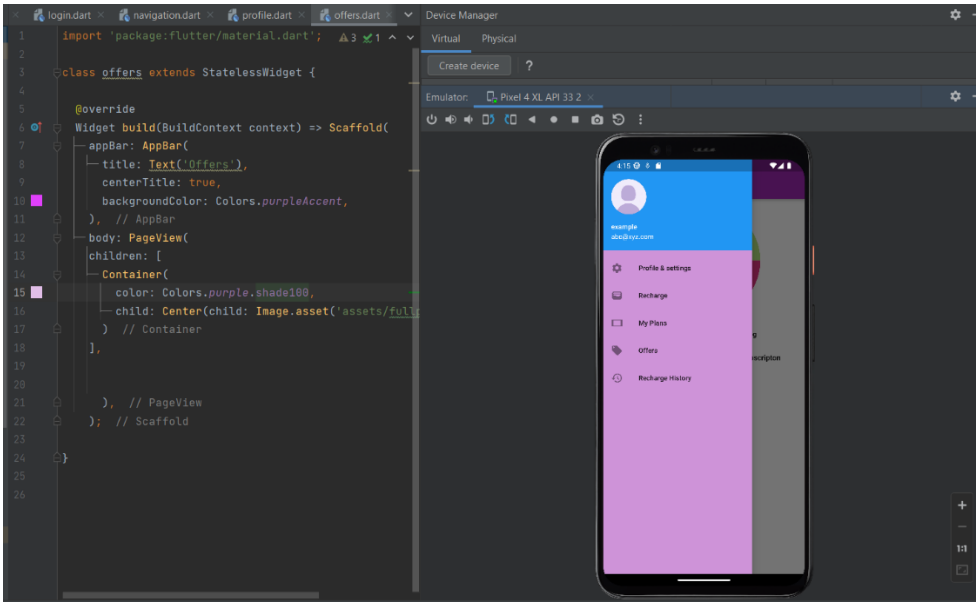

Fig. 8.3: Burger Menu

8.4 WIREFRAME OF TARIFF PLAN

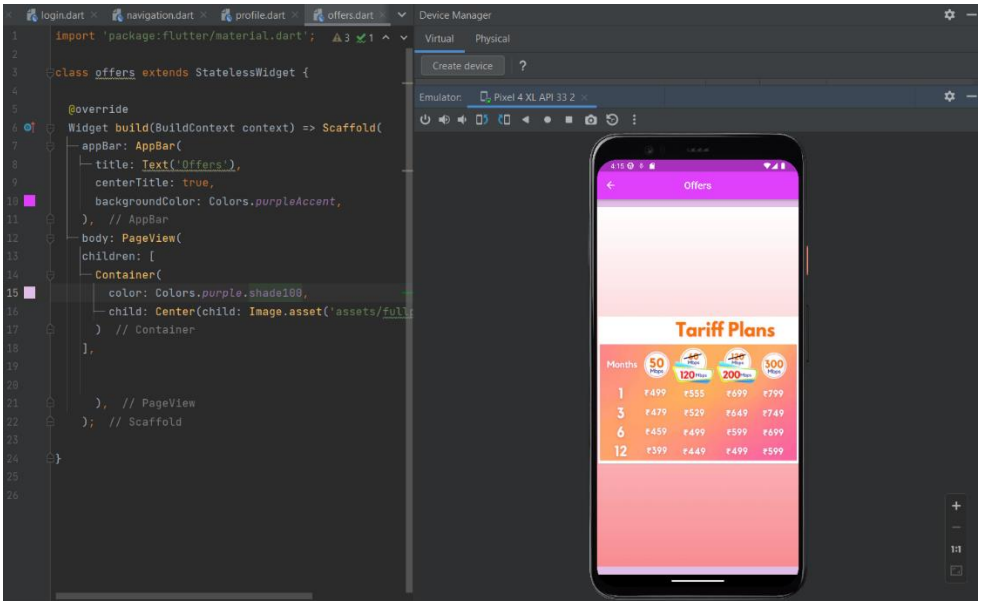

Fig. 8.4: Tariff plan

CHAPTER 9

TECHNICAL TAKEAWAYS

9.1. INTRODUCTION TO ANDROID STUDIO

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

The following features are provided in the current stable version:

- Gradle-based build support
- Android-specific refactoring and quick fixes
- Lint tools to catch performance, usability, version compatibility and other problems
- ProGuard integration and app-signing capabilities
- Template-based wizards to create common Android designs and components
- A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations
- Support for building Android Wear apps
- Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine.
- Android Virtual Device (Emulator) to run and debug apps in the Android studio.

9.2 INTRODUCTION TO FLUTTER

Flutter is an open-source UI software development kit created by Google. It is used to develop cross platform applications for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase.

Framework architecture

The major components of Flutter include:

- Dart platform
- Flutter engine
- Foundation library
- Design-specific widgets
- Flutter Development Tools (DevTools)

9.3 INTRODUCTION TO DART

Flutter apps are written in the Dart language and make use of many of the language's more advanced features.

While writing and debugging an application, Flutter runs in the Dart virtual machine, which features a just-in-time execution engine. This allows for fast compilation times as well as "hot reload", with which modifications to source files can be injected into a running application. Flutter extends this further with support for stateful hot reload, where in most cases changes to source code are reflected immediately in the running app without requiring a restart or any loss of state.

For better performance, release versions of Flutter apps on all platforms use ahead-of-time (AOT) compilation.

9.4 NUEROMORPHISM IN FIGMA

Neumorphism is a design style used in graphical user interfaces. It is commonly identified by a soft and light look, (for which it is sometimes referred to as soft UI) with elements that appear to protrude from or dent into the background rather than float on top of it. It is sometimes considered a medium between skeuomorphism and flat design.

Figma is a collaborative web application for interface design, with additional offline features enabled by desktop applications for macOS and Windows. The feature set of Figma focuses on user interface and user experience design, with an emphasis on real-time collaboration, utilising a variety of vector graphics editor and prototyping tools. The Figma mobile app for Android and iOS allows viewing and interacting with Figma prototypes in real-time on mobile and tablet devices. Neuromorphic designs I made were on the Figma application.

CHAPTER 10

CONCLUSION

Through this internship project I was able to learn all the basics of android application development. I have created application wireframes with all major features. I have created an application for Nuron Networks which helps user interface for the internet broadband services provided by Nuron.

This project and internship has been successfully completed as of October 9th 2022. From this internship I learnt a lot about the professional work environment, reinforcement learning and technical knowledge from my seniors and peers and have incorporated it in my workflow.

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