THE PRICE TELLING ANDROID APPLICATION DAMKOTO FOR BANGLADESH
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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project/internship titled "**The Price Telling Android Application Damkoto for Bangladesh**", submitted by Ferdaus Zaman Polok, Abida Khan Trisha and Sanzida Islam, ID No: 172-15-9924, 172-15-9696 and 172-15-9743 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on Thursday, September 9, 2021.

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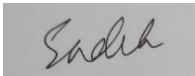**Chairman**

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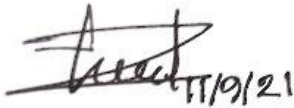Daffodil International University

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Jueal Mia, Sr. Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

TT/9/21

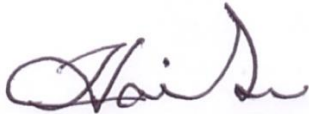**Md Jueal Mia**
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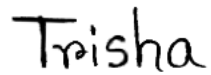Daffodil International University

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

With technology, people are becoming smart day by day. One main component that all of us do have is our Smartphones. On the other hand, the number of uses of some other smart gadgets like Drone, DSLR Camera, etc. is getting higher and higher. Some people buy these smartphones and another recently launched gadget as our collecting hobby and some buy them just in need. But this both types of people needs to search for the price before buying any gadget. Our system will help both types of the person about knowing the current market price in BDT along with various shop wise different prices. As a result, our system will help budget-friendly people in comparison and decision-making. Those who are looking for a value-for-money gadget/ device can save lots of time by using our application rather than googling for different device's prices.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This is an Android-based project and this report will contain all the methods, background study, procedure, planning, and all the structures we followed to develop our Android Application "DamKoto" which was our final goal. We tried and gave our best to reach the ultimate success.

It's hard to find a person who doesn't use a smartphone in this era. Day by day Science and Technology are growing higher and higher and with that flow, lots of modern gadgets are being manufactured by different brands from all over the world. Mobile Phones, Cameras, Drone & Smartwatches are the most common gadgets off them. There are so many gadgets from so many brands these days. As a result, people have lots of options to choose from. Especially people with a budget always want the best value for money gadget.

Whenever a person needs or wants to buy a gadget the very first thing that he/ she needs to know is the price of that gadget. Now let's take an example: Rahim is a Bangladeshi boy. He wants to buy an 'iPhone 12 Pro Max' which has recently been launched by the Apple brand. The first thing Rahim would do is to search for the price of that phone over the Internet. He may get the price after some period of research but initially what he may find is some mixed price of USD, INR, BDT, etc., and some of these BDT (taka) prices may be fake or backdated.

That's the point we had planned to work on. The price in Bangladeshi taka of different Gadgets. Therefore, our plan was to develop an Android application that will show the user different gadget prices in Bangladeshi taka (BDT). Initially, we are working with three main types of gadgets: Mobile, Came, and Drone. Users can browse and search to see the different shop-wise devices and their prices, they can also find information about the shop and the product's buying link!

1.2 Motivation

Buying new gadgets has become so much easier these days. Technology is growing and people are becoming tech enthusiasts day by day. To buy a new gadget people search for Its price over the internet and as a Bangladeshi, it takes time to find out the actual current market price of their desired gadgets in BDT (Bangladeshi taka) as most of the gadgets are imported from all over the world. Most of the time they get prices from other currencies. That is the reason we got motivated to work on this. We will be developing an Android application on which people can solve this problem in just seconds. They can know their desired gadget's price through our app in BDT (Bangladeshi Taka). Not only that, but users can also know the shop-wise prices and visit the buying link of different shops for each gadget.

1.3 Objective

Our objective is to collect data, analyze and develop a user-friendly Android app that will upload as well as retrieve all the necessary data from our database. Overall, our objective is to help Bangladeshi people by saving their time and money while buying a new Gadget.

1.4 Expected Outcome

A user-friendly Android application that:

    i.   Will show 3 types of gadgets (Mobile, Camera, Drone) price in Bangladeshi taka (BDT).

    ii.   Will show Shop-wise different prices of the same gadget.

    iii.   Will include purchase links of different shops with each of the gadgets.

    iv.   Will show Individual details of each shop as a list.

    v.   Will filter gadgets according to their brands.

1.5 Project Management and Finance

Our team (Team PTP) has managed the whole project. We tried all our best to get a beneficial output and hopefully we did.

We used Android Studio to develop our app and Firebase Realtime database, storage to store our String and Image data. Both of these platforms are free. Therefore, till now we

didn't need any financial support. But in the future to make this app even better or maybe to develop a web-app version of this project maybe we will need extra financial support.

1.6 Report Layout

This project report has seven chapters. In the first chapter named 'Introduction', we have written about the Introduction, Objective, Motivation, Expected Outcome, Project Management and Report Layout.

In our 2nd chapter 'Background Study' we will be writing about Project Terminologies, Related work, Comparative Analysis, Scope of Problems, Challenges of the project.
In the 3rd chapter named 'Requirement Specification' we will be writing about Requirement Collection and Analysis, Business Process Model, Logical Data Model, Use Case model and Design requirement of the project.

In the next chapter (4th) we will describe our complete app design which includes Front-end Design, Back-end Design, User Experience design and User Experience along with some details of every page of the application. This chapter will be called 'Design Specification'

Next comes the 5th chapter named 'Implementation and Testing', we will be writing about Implementation Requirements, App Implementation, Database Implementation and Test Reports.

Then comes the next chapter (6th) named 'Impact of Society' where we will be discussing our Project's Impact on Society and some Ethical Aspects.
 Our last chapter (7th) will be about 'Discussion and Conclusion' where we will be discussing our Project's Future Scopes, Further Development, Some more Challenges along with their solutions.

CHAPTER 2
BACKGROUND STUDY

2.1 Terminologies

The main target of our project is to make sure that general Bangladeshi people won't have the hassle of finding out their desired gadget's Bangladeshi price (in BDT). They will see the data within milliseconds using our app. Not only that but also, they will be able to see 'Shop wise price' which means different prices of the same product from a different shop. However, to achieve this we had to collect lots of data. Initially, we started with Mobile, Camera and Drone. So, our first target is to collect running market data of these three which includes their name, brand, current market price, image and most importantly BD Shopwise price. Then we will be storing them in a common database and from there, our application will be able to pass data in and out. We will design the application in such a way that anyone can operate the app and know their desired gadget's price in BDT very easily. This concept is available in other countries, even in our country there are some web applications based on this but right there is no mobile application in our country that can tell you desired gadget's price in BDT.

2.2 Related Works

'DamKoto' app mainly shows the current market price of gadgets. We found some similar Web Applications to our Android application:

Damjanun.com is a price comparison Bangladeshi site that helps users shop smartly by visualizing price and product specifications and reviews on various products like mobile phones, laptops, cameras & other electronic items. This is an e-commerce site owned by Japan Marketing & Consultancy Ltd. (JMC), a Japan-Bangladesh joint venture company incorporated in June 2017. Inspired by the latest technologies and services in the international market, JMC is operating several informative and helpful services. [1]

Mobiledokan.com is another Bangladeshi website that mainly shows smartphone specifications. They are serving an online database of carefully selected fine quality latest

mobile phones, their prices, full specifications, reviews etc. for the benefit of the consumers. [2]

GSMAarena is the worldwide most powerful website that offers comprehensive and up-to-date mobile phone information. They provide device specifications, information, news, blogs, review videos. They are popular for providing comparison services that enable its users to compare mobile phones, photos and videos, battery life tables, and many other features. It also helps amateurs catch up with technical terms by providing a mobile terms glossary page. [3]

PHONEAQUA is a website of Saad Media and makes it with the aim of providing the best and latest information about Mobile Price and full specification. Although there are 25 counties listed (Bangladesh is one of them). But their data works properly for some of them. Most of the county's smartphone data are backdated. [4] Figure 2.1 shows some of the related website logos
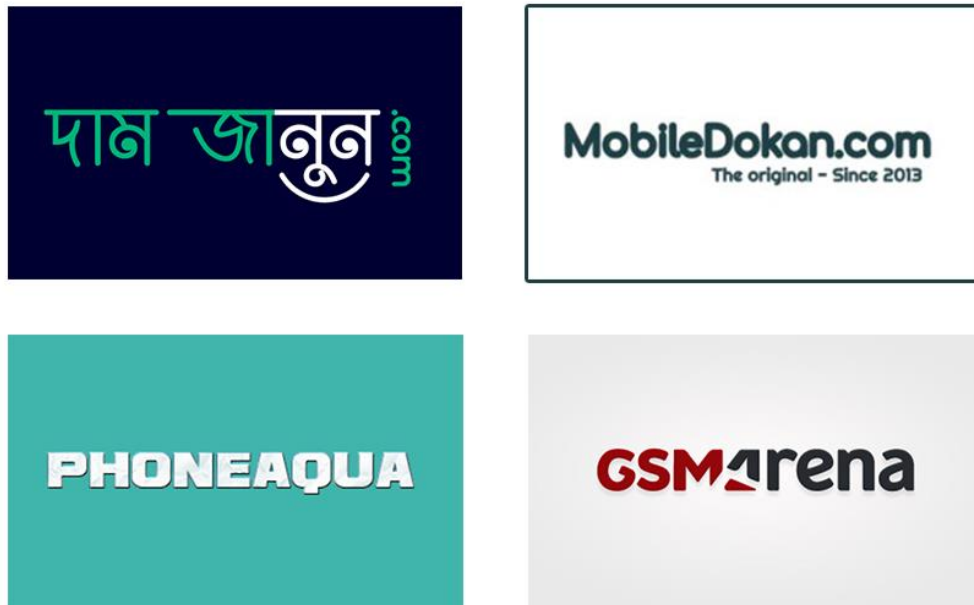

Figure 2.1: Related Web Applications

2.3 Comparative Analysis

The main motive of our application DamKoto is to show the price in BDT and in this sense, the applications shown in figure 2.1 are related to our application.

But there are some differences as well. The main difference here is, these related works are based on Web Applications, there is no dedicated Mobile or Android Application in our country that can show prices of different vendors about various gadgets and this is the fact where our project is unique.

Another thing is BDT price and Shopwise price. From the above similar work projects, only Damjanun.com can show the price of gadgets in BDT and different shop prices. In that case, we have tried to add more shops than Damjanun.com has. And then again that is a web application and our DamKoto is an Android application.

We will keep our application as simple and light as possible so that people can use it easily and properly. Our application will have 4 key features which are shop-wise price, brand wise price, searching and admin panel for us (restricted for users).

2.4 Scope of problems

The only source of data for our app is our Firebase Database. We ourselves will collect data from various trusted BD E-commerce websites and will store them into our firebase database from our application itself. So, data manipulating/ changing can be the only problem we will be facing. Price changing is a common thing in business. Therefore, whenever a product's price changes, we will have to change it too. But the feature 'buy now' button will counter this problem somehow. As this will take the user into the relevant e-commerce site's product purchase page the user will be able to see the price if it got changed and we haven't noticed it. Other than this there will be some common problems like:

> ➢ The application requires an Internet connection.
> ➢ Users need to have an Android Device to use the app.

2.5 Challenges

The biggest challenge was to manage the Application Program Interface (API) of different E-commerce websites. Especially the price API of different websites that we will be in our application's shop-wise price section. But unfortunately, we have failed to manage that. From March 2020 the lockdown started. During that time, we could not meet physically with the E-commerce site's developers/ owners. We tried to communicate with them over the phone and shared the idea with them and asked for the Price API. Most of them refused our proposal and some of them (Apple Gadgets) told us to develop the app first. Once it's ready they will have a look and after that, they will think about the API.

As a result, we decided to implement the app in such a way that we ourselves can store necessary information into our database which will be inserted through our application. So, our next challenge came up, which is to maintain our data regularly.

We need to make sure that we collect proper and plenty of data regularly and update them into the database from the admin panel.

CHAPTER 3
REQUIREMENT SPECIFICATION

3.1 Requirement Collection and Analysis

There are three types of requirements we need to list for our project which is given below:

3.1.1 Software Requirements:

✓ Android Studio IDE: Android Studio is the official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. [5] This is one of the fastest developing tools for building market-leading apps and accelerating performance. It has an intelligent code editor, real-time profile, emulator, and flexible build system.

✓ Android Virtual Device: Android Virtual Device (AVD) is the emulator that runs in Android Studio. We need to install Android Virtual Device into our Android Studio in order to run our application. We can also use our smartphone by connecting it with our PC/ Laptop to run our app. To do that we will need to turn on Developer mode and USB debugging on and connect our Android Phone with pc using a USB cable.

✓ Firebase Database: We need to have a Database where our necessary data like text, images will be stored. For this we will be using Firebase Realtime Database. Firebase is a platform developed by Google for creating mobile and web applications. It is an original independent company founded in 2011. [6] And the Realtime Database of Firebase is a cloud-hosted NoSQL database that lets you store and sync data between your users in real-time.

✓ Adobe Illustrator, Photoshop: We will be using Adobe Illustrator and Photoshop to design our Logos, Icons, Banners etc. Before starting implementation of our design through xml code this is a great way to see how it will look like in Illustrator by

designing the section page one by one. Therefore, we will also do that before implementation.

3.1.2 Hardware Requirements:

Desktop/ Laptop that has

- ✓ 4 GB RAM at least, 8 GB recommended.
- ✓ 2 GB of available disk space at least, 4 GB Recommended.
- ✓ 1280 x 800 minimum screen resolution.
- ✓ Microsoft Windows 7/8/10 (32- or 64-bit). The Android Emulator supports 64-bit Windows only.

Android Smartphone that has:

- ✓ GB RAM at least
- ✓ 100 MB Hard Disk at least
- ✓ 1.0 GHz Processor at least

3.2 Business Process Model

Business process modeling is the analytical representation or put simply an illustration of an organization's business processes. In our app, there are two perspectives. One is for the users and another one is for use (Admin). We will be inserting data into the database using the same app by logging into the admin panel. And the user will use the app to search and find or scrolling and viewing their required data. Figure 3.1 show our business process model.
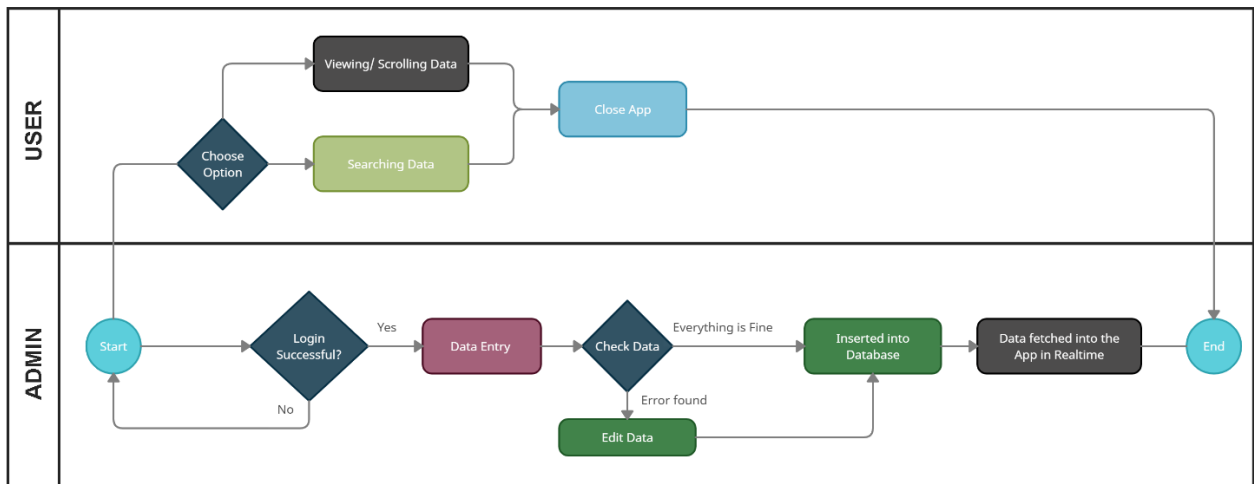

Figure 3.1: Business Process Model

3.3 Use Case model

A use case is a methodology to identify and organize system requirements. The use case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal. The method creates a document that describes all the steps taken by a user to complete an activity. [7]

The following figure 3.2 shows that in our app DamKoto there are two sectors for use case modeling which are the Admin and the User. The admin can add, update, and delete data. To add the data from the app, the admin needs to log in using an email password. On the other hand, users can View, Search and Filter data which includes Gadget data, Shop data, Shop wise data, and brand wise data.
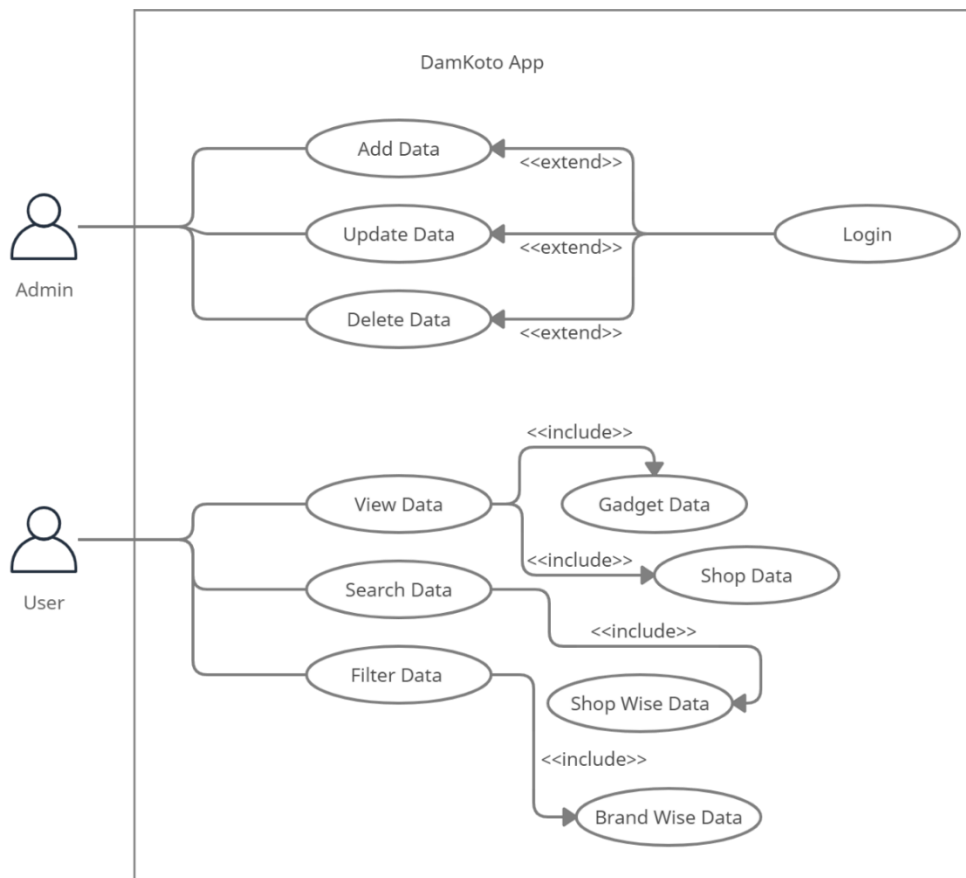
Figure 3.2: Use Case Mode

TABLE 3.1: USE CASE FOR ADD, UPDATE, DELETE DATA

Use Case Name	Add, Update, Delete Data
Use Case Details	The actor can add image and text data of a particular gadget from the admin panel section.
Pre-condition	Log in
Actor	Admin

TABLE 3.1: USE CASE FOR VIEW, SEARCH, FILTER DATA

Use Case Name	View, Search, Filter data
Use Case Details	Can view, search scroll gadget and shop data which includes Shopwise price, brand wise price, specifications, and shop details.
Pre-condition	Launch the app
Actor	User

3.4 Data collection requirements

Since we are making a price-telling app, one of the vital tasks is to collect data. We need to collect category-wise data as well as shop data. There will be 3 main categories (Mobile, Camera, Drone) and 3 sections in each category. The first section is called the general information, in which there will be the name, current market price, brand, and image data of a gadget. The next one is the Shop-wise Price section where users can have at most 3 Shops' names, their offered price, and a buying link. Lastly, there will be a section where the user can have three general information about the gadget, this section will be called the Specifications section.

We will be rearranging these data into the Home, All Gadgets, and All Shops section of the app while fetching the data from the database. Each gadget of the home section will show all the data described above and there will be a brand-wise filtering option that includes only the image, name, and current market price of the gadget in all gadget section. All Shops section will simply hold the general data like name, location, contact number of all the shops. Figure 3.3 shows the simple flowchart of required data for the app.
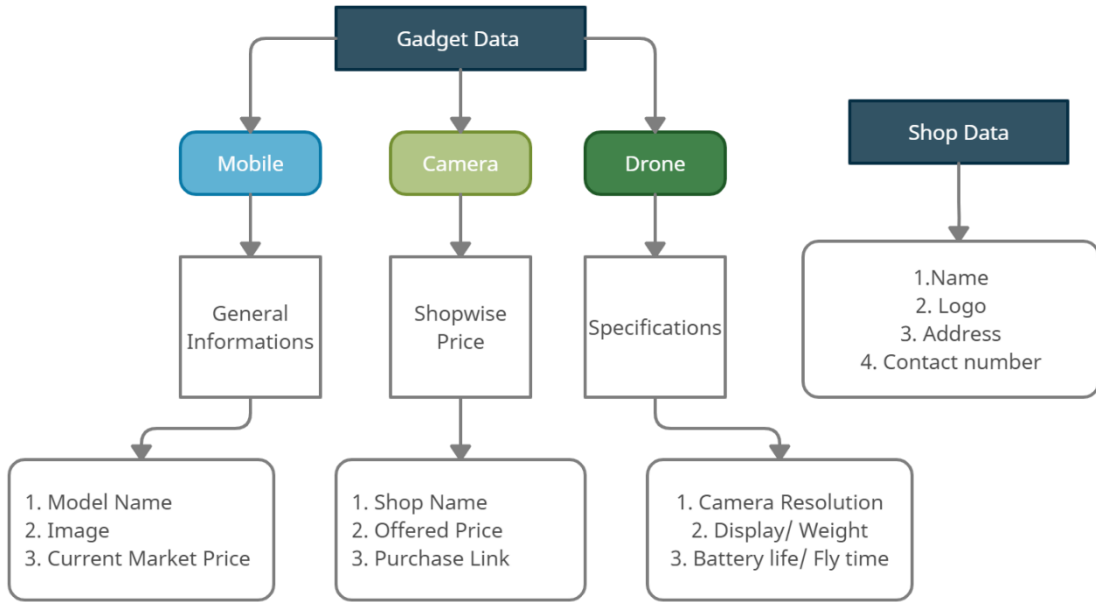
Figure 3.3: Required Data for the app

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

Front End is everything that the user sees on a mobile app including the design of the app. In another way, it can be said that the front end of the mobile app is what the user experiences. From there the term came up which is 'User experience' (UX). Now the front-end is where the user experiences and interacts with these things.

4.2 User Interface Design

Now for experiencing things as a user (UX) there should be a User Interface (UI) which we need to design in Illustrator first and then need to implement over our Android Studio. So, the User Interface which we had designed and developed for our App 'DamKoto' with a little bit of description is given below.

4.2.1 Launching Icon

The very first thing a user can see about an application is the launching icon. Figure 4.1 show our launching icon.
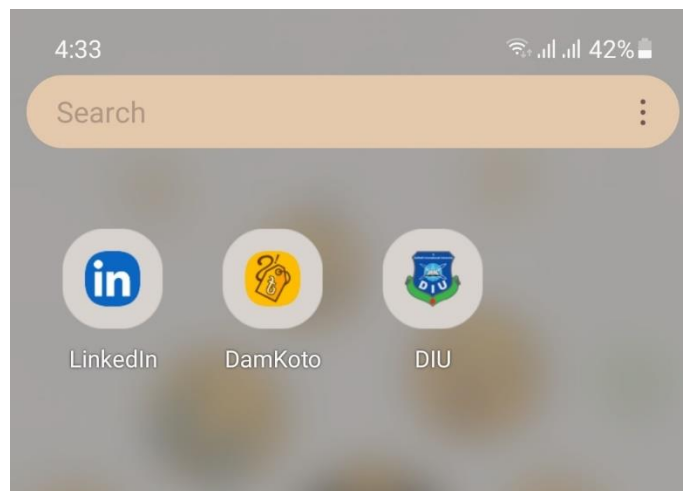
Figure 4.1: Launching icon

4.2.2 Splash Screen

A splash screen is the first screen of the app when it is opens. For our app, we have designed a Custom Splash Screen which lasts for about a second while launching. Figure 4.2 shows our splash screen.

Figure 4.2: Splash screen

4.2.3 Home Page

After the Splash Screen, the 1st page of the app shows up which is called the Home Page. On this page, there is a Search Bar, where users can search for their desired Gadget Price and details. Below the search bar there is a list view which provides all the gadget's model names from our database and shows up the filtered result upon the search. Figure 4.3 shows our home page.

Figure 4.3: Home page

4.2.4 Navigation Drawer

The Navigation drawer consists of a header and all the section buttons by which the user can visit every section of the app. Figure 4.4 shows our navigation drawer.
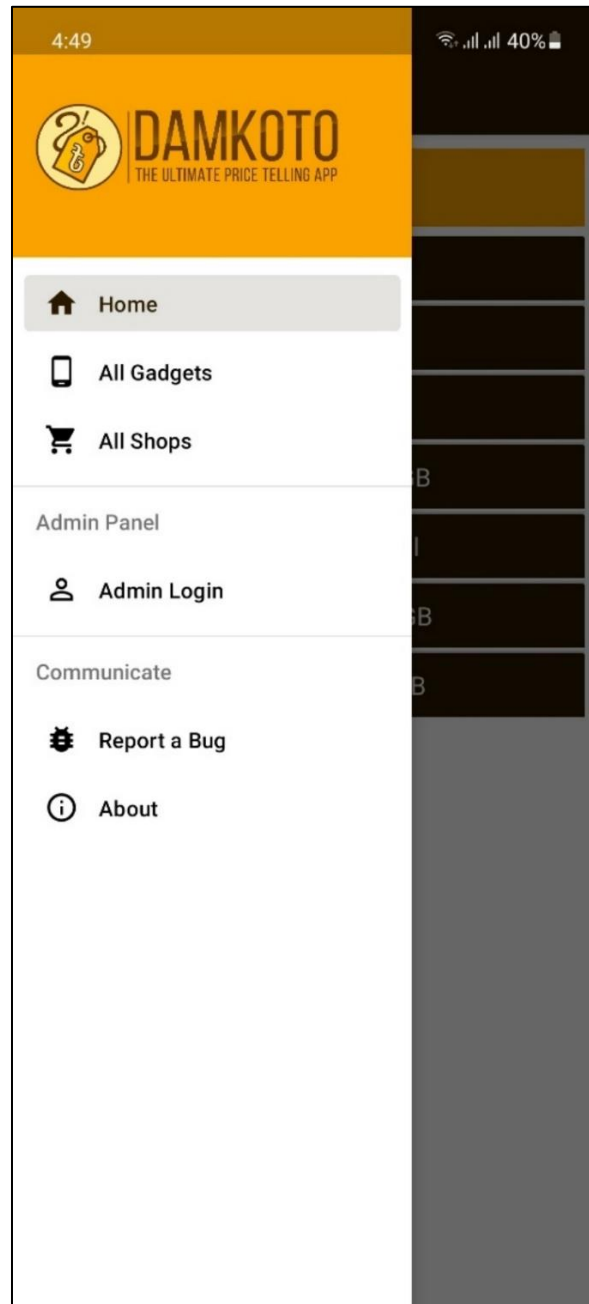
Figure 4.4: Navigation Drawer

4.2.5 All Gadgets

Inside all gadgets section there is a Tab Layout which can hold 3 Different Tabs: Mobile, Camera, Drone. This tab is scrollable. Inside Each Tab, different Brands are listed according to their availability in Bangladesh. To do this we used a list consisting of a custom row that has a brand icon, a test view, and an arrow icon on it. Figure 4.5 shows all three tabs under the all gadgets section.
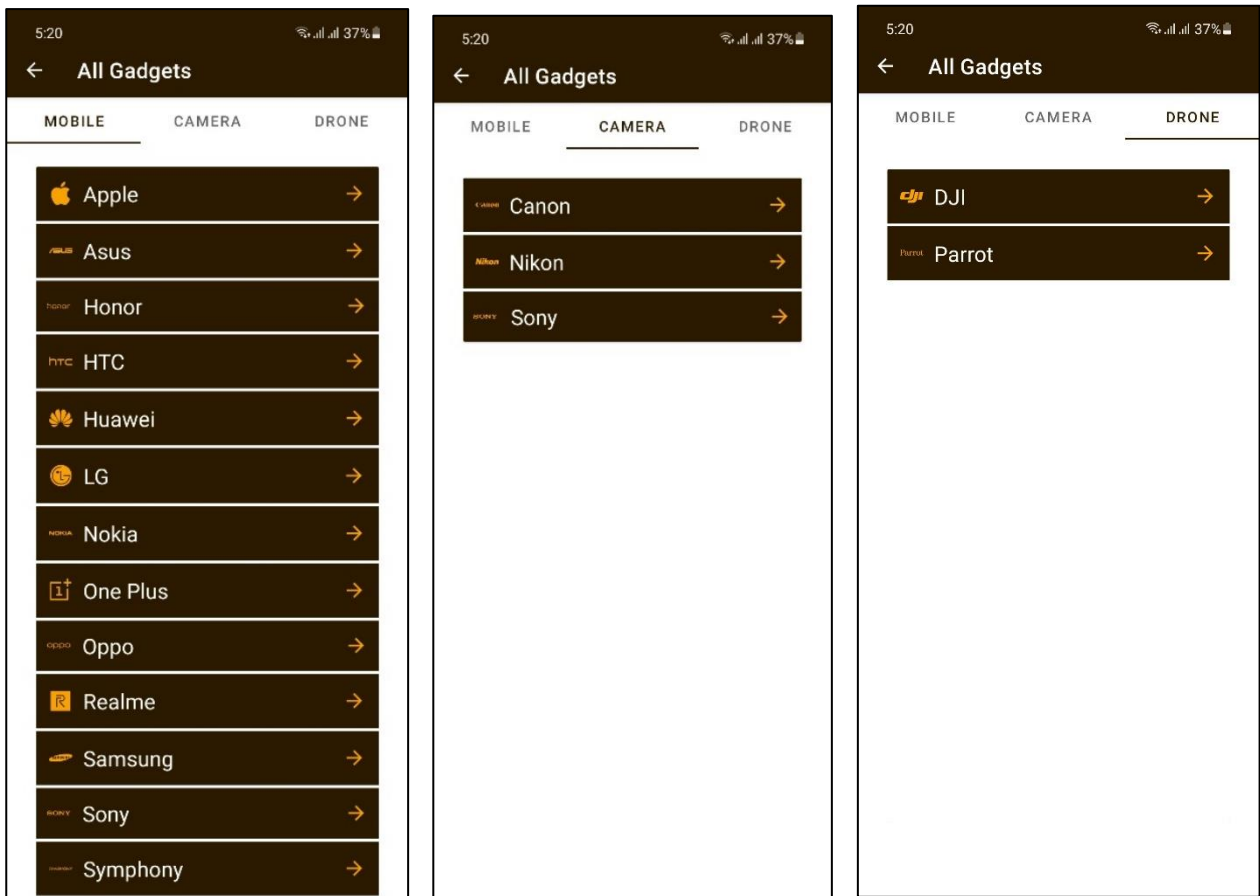
Figure 4.5: All gadgets

4.2.6 Brands inside all gadgets

All brands inside All Gadgets are clickable. Whenever users click on any brand, they will see an interface like this, which is scrollable and shows the selected brand's products image, name, and current market price, made of a custom list view holding rows made using an image view and two text views. Figure 4.6 shows a sample of having different devices of the same brand under all gadgets.
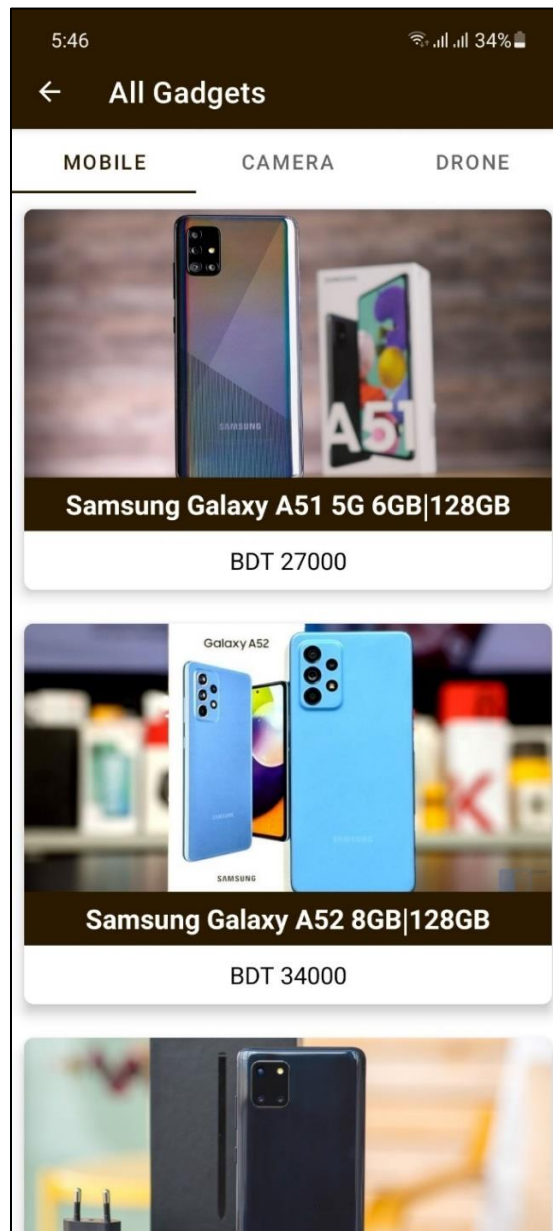
Figure 4.6: Brands inside all gadgets

4.2.7 All Shops

Inside All Shops there will be a scrollable list view which will hold all those shop information which prices will be listed in our shop wise price section. Users can easily take note of their fav shop from here. Figure 4.7 shows the all shops section of the app.
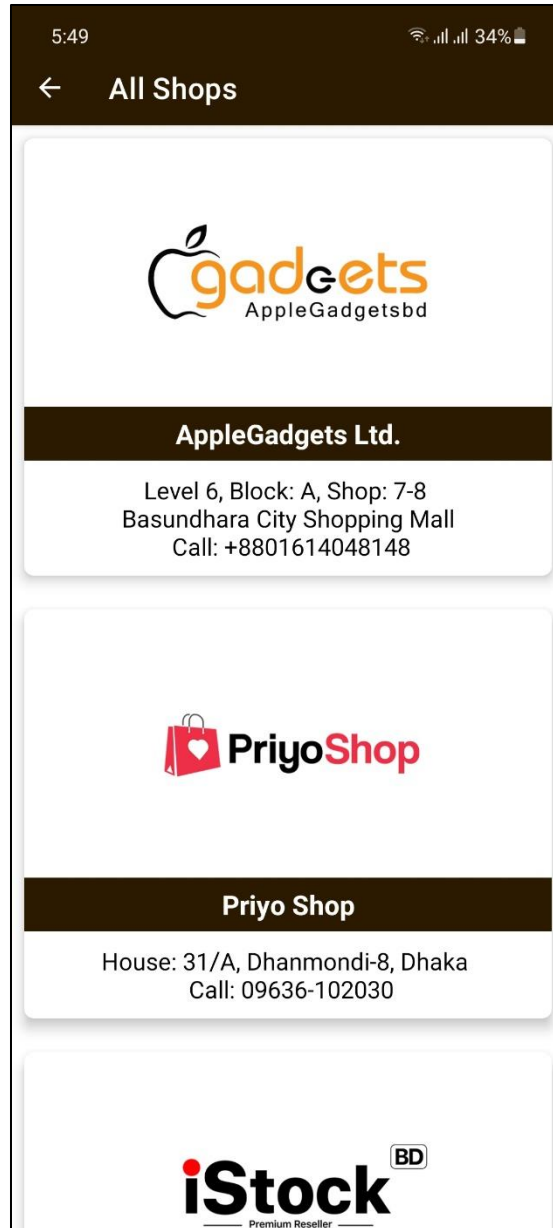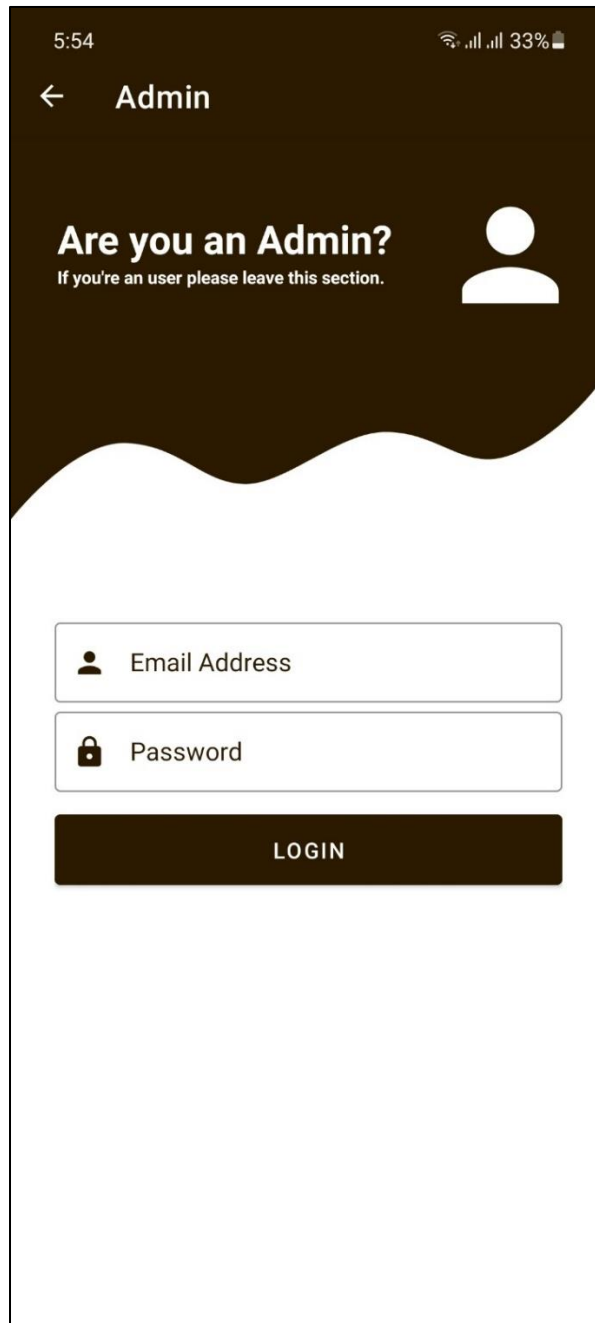
Figure 4.7: All shops

4.2.8 Admin Login

This area is restricted for users and password protected for us (Admin). Using this login page, we admins can login for data entry. There are two Edit Texts and one Button here. The following figure 4.8 shows our admin login page.

Figure 4.8: Admin login

4.2.9 Data Entry Page

After a successful login admin can insert data from this page. These data will be stored into our Firebase Realtime database and Storage. There are lots of Edit Texts, Spinners, Text Views, and Buttons in this page.
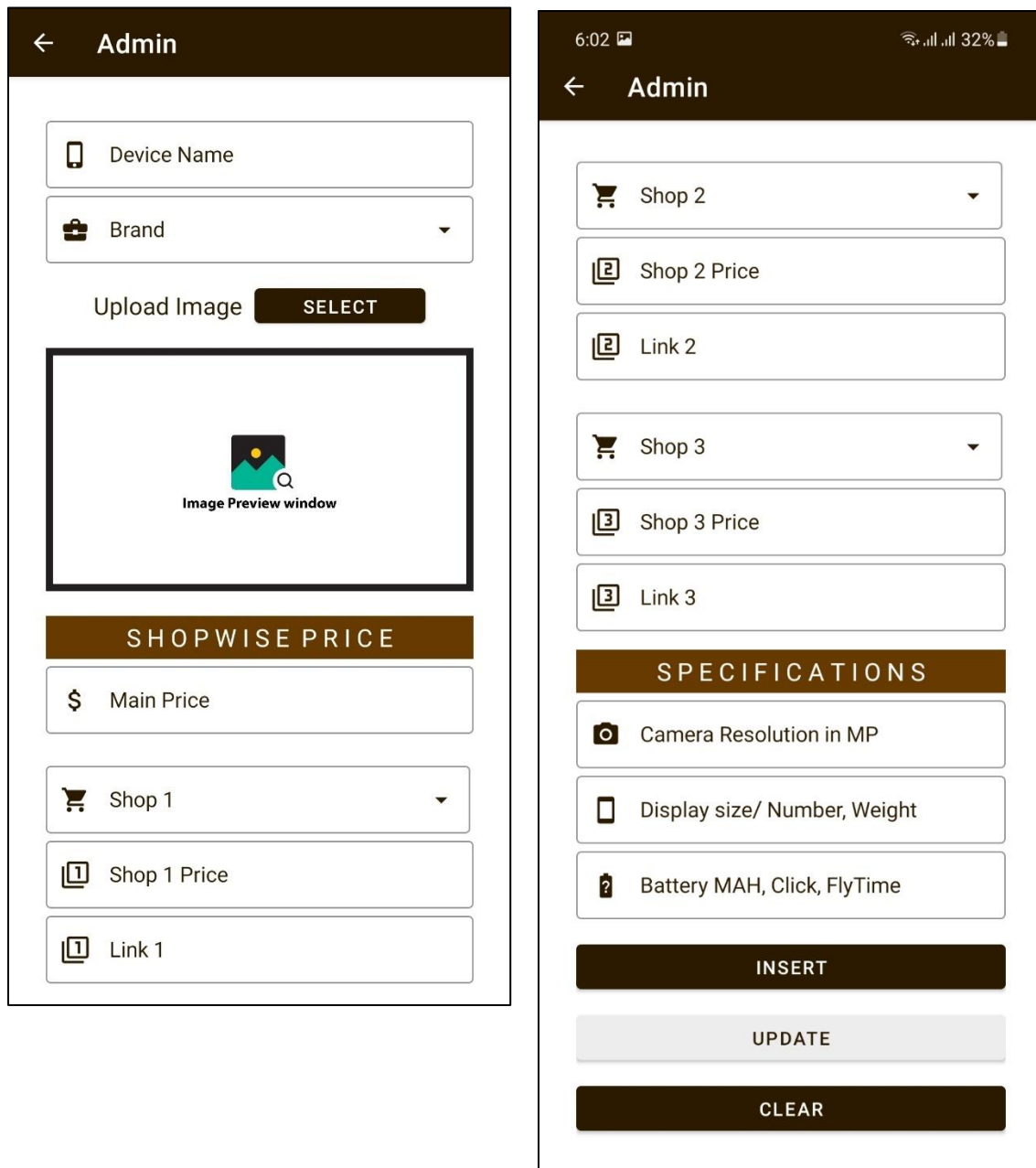

Figure 4.9: Data entry page

4.2.10 Report a Bug

Anyone from our users can share any bug they may find while operating our app from this page. There is a Send Email button in which they can simply click and write an email to us. Figure 4.10 shows our bug report page.
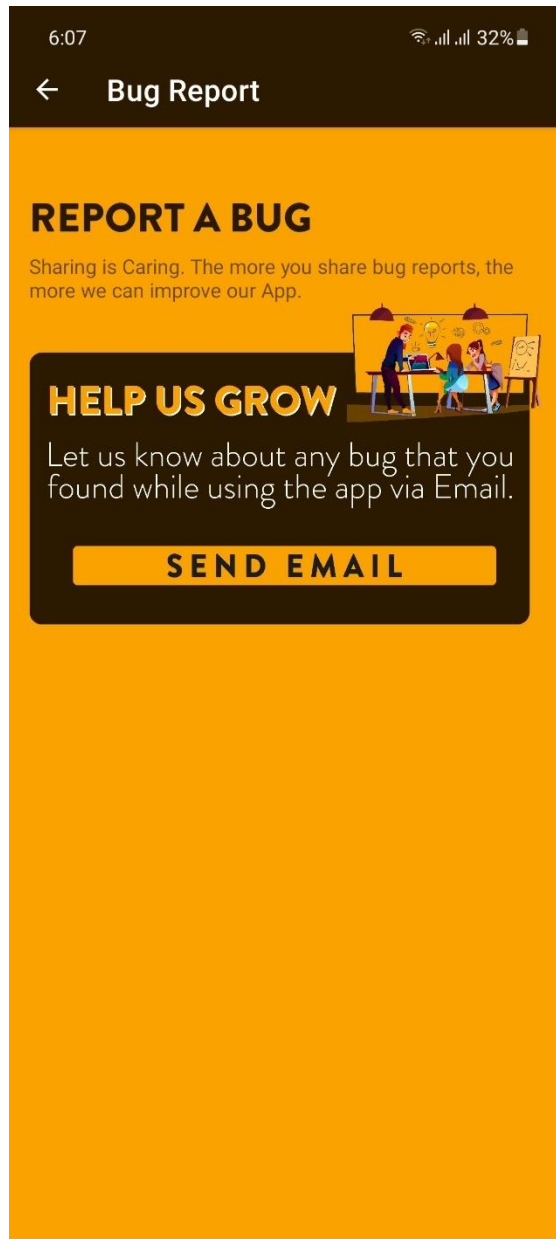

Figure 4.10: Report a bug

4.2.11 About

From this About page users can know about both application and developers. Like the Overview of the app, how it works, team behind the app everything. Some Text Views, Image Views, Icons, and Buttons are used to design and develop this page. Figure 4.12 shoes our about page.
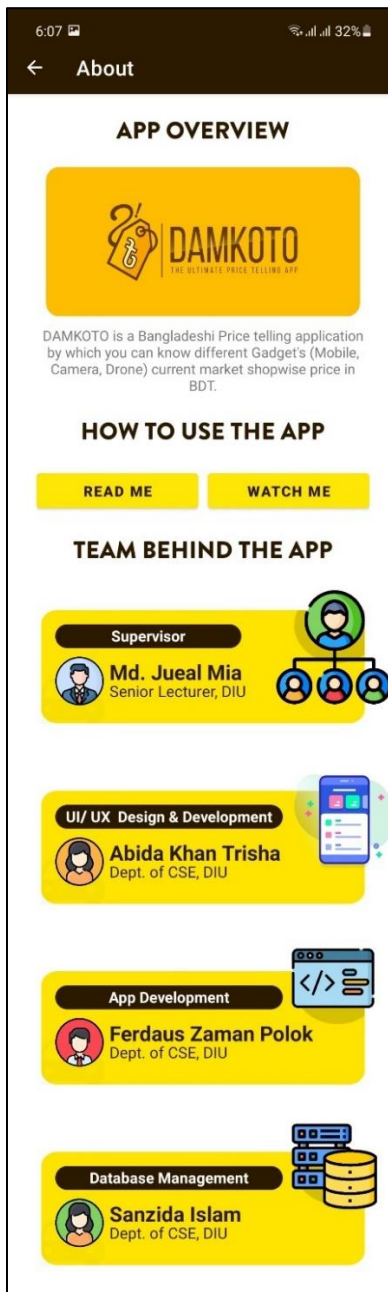

Figure 4.11: About page

4.2.12 ReadMe Documentation

Inside the about page, there is a button named Read Me. Inside this button there is a page designed that shows a pdf to the user (when it gets clicked) about how to use the app written in full Bangla Language so that anyone can easily read and understand how the app works or what to do to find gadget's price, shop-wise price, etc. Figure 4.12 shows a pdf under the read me option.

Figure 4.12: Read me

4.2.13 Other Designs

      I.   Logo: Figure 4.13 shows our app logo.

Figure 4.13: App logo

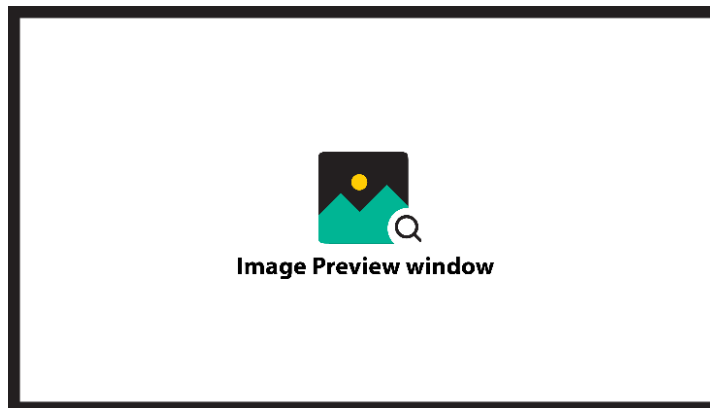   II.   Image Upload Preview: Figure 4.14 shows the image upload preview design.

Figure 4.14: Image upload preview

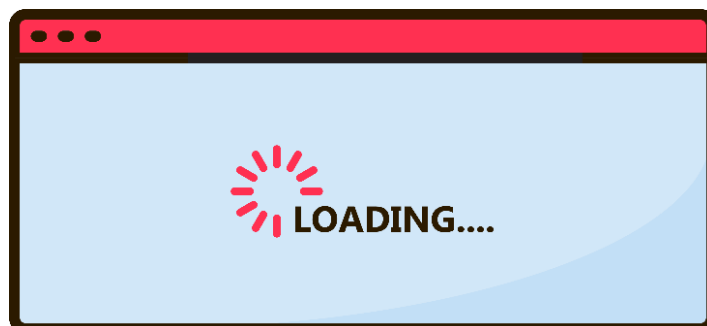   III.   Image Loading Preview: Figure 4.15 shows the image loading preview.

Figure 4.15: Image loading preview

4.3 Back-end Design

In an android app, the back-end is the important part that is responsible for data storage, security, and business logic. An app backend is much like a server for mobile apps, as it stores and sorts the important information that the end user does not see. [8]

Our App data is stored in the firebase database. Figure 4.16 shows the Authentication Page of our firebase project. Here, all admin emails and passwords are saved here.
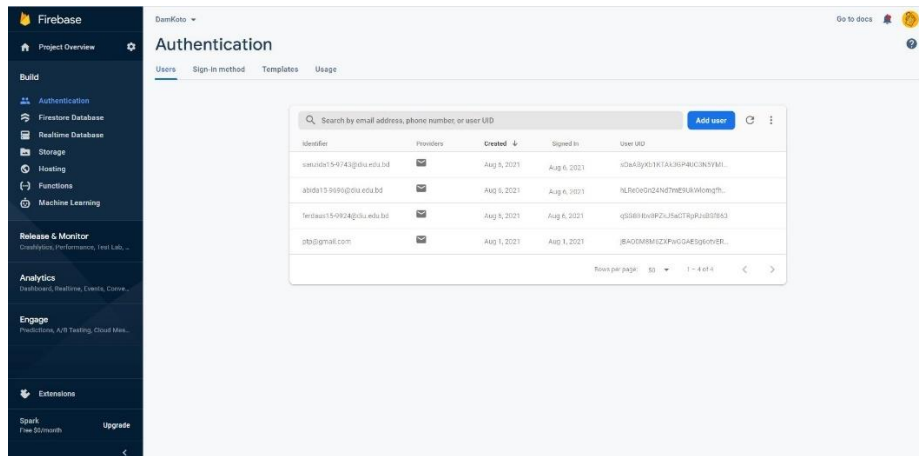

Figure 4.16: Firebase authentication page

We know that firebase is a cloud hosted NoSQL database. As a result, we need to set the tree of the real-time database so that we can easily pursue them by calling the parent and child. Therefore, we separated our main tree into two sections, which are the home (For home section data), AllGadgets (For All Gadgets section data), shown in figure 4.17
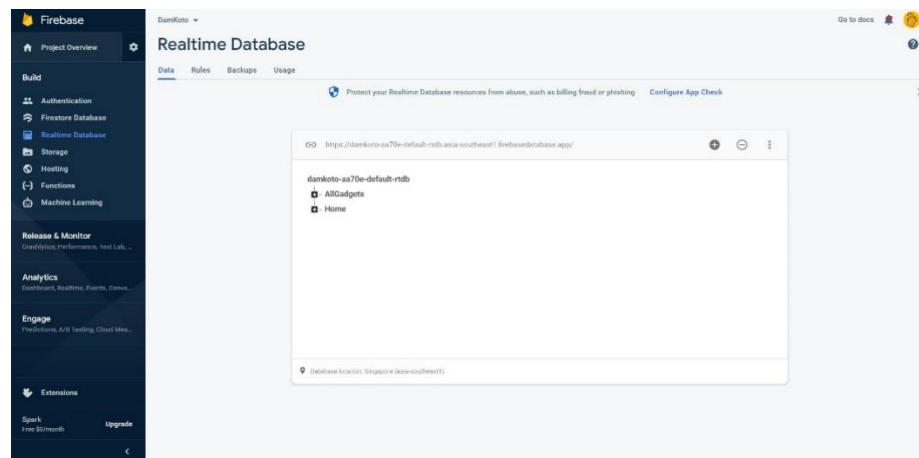

Figure 4.17: Two main child of the tree

Inside All Gadgets we stored all the brands as it's child (Figure: 4.18) and inside each brand there are device model name as it's child (Figure: 4.19) And inside each device we stored device name, image, and price as it's child (Figure: 4.20)
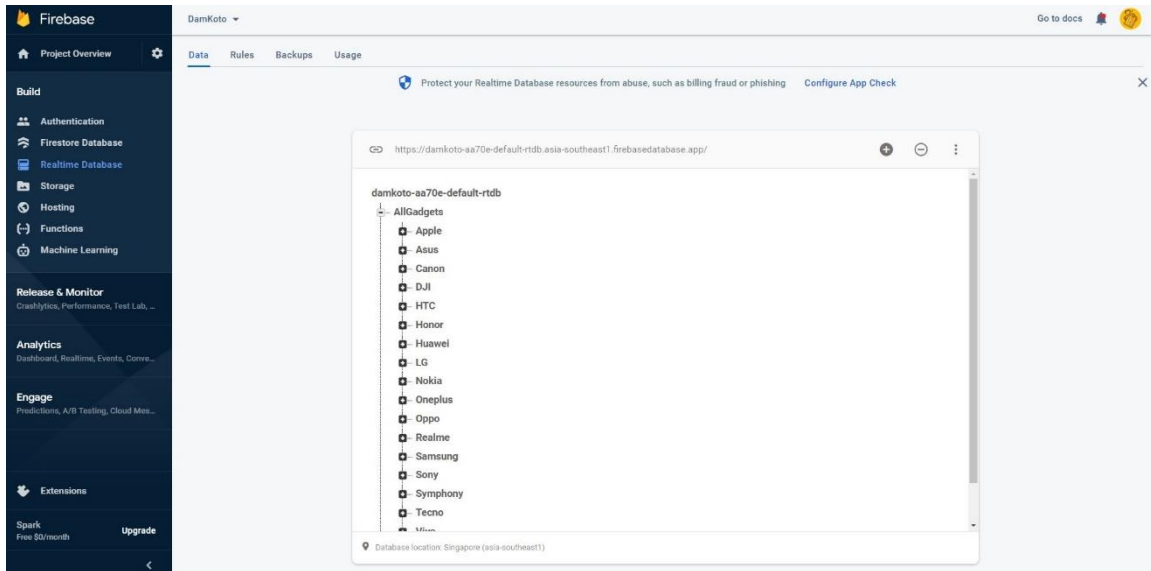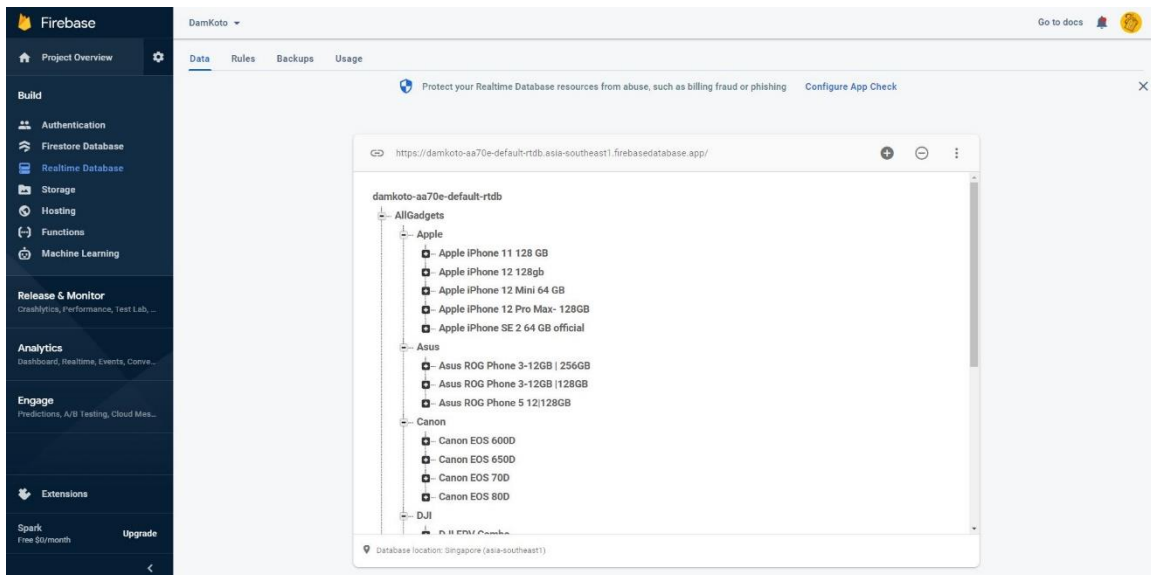

Figure 4.18: All Gadgets child
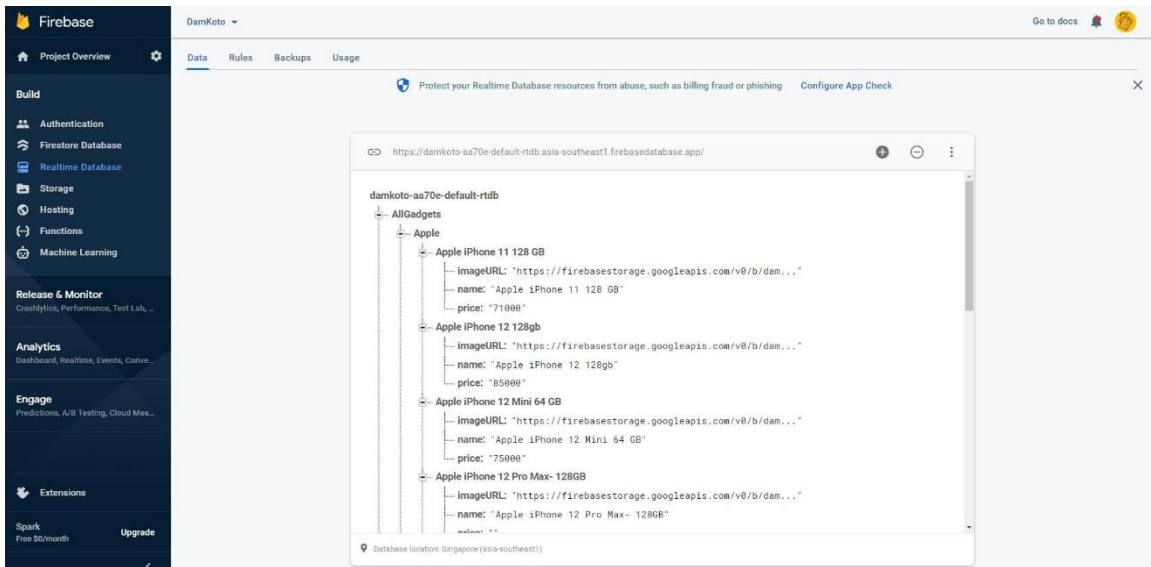

Figure 4.19: Brand child

Figure 4.20: Device child

After that, inside Home we stored the device name as it's child. (Figure: 4.21) and inside each device we stored all necessary data for the shop-wise price page. Which are: device name, image access token, current market price, brand, different shop's name, price, purchase link and specification (Camera resolution, Display size/ Weight, Battery size/ Fly time). (Figure: 4.22)
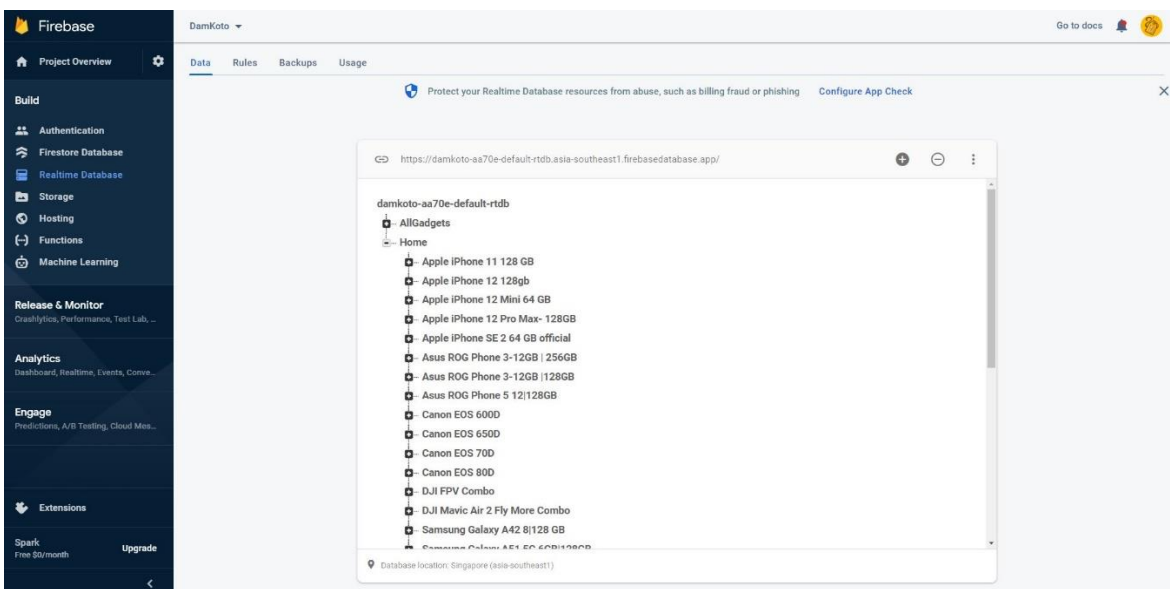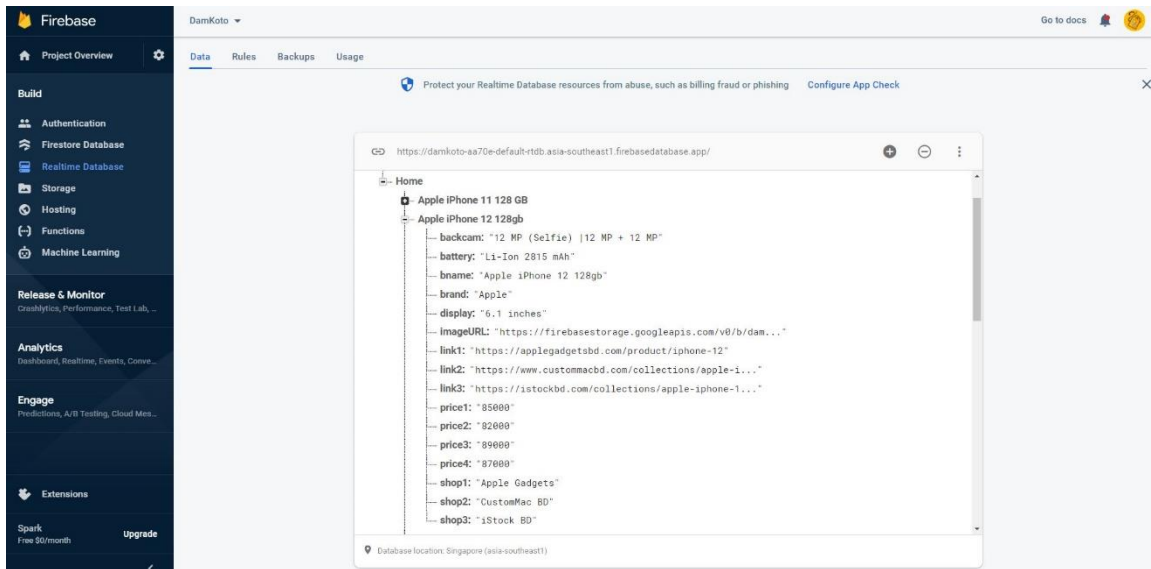

Figure 4.21: Home child

Figure 4.22: Device name child

Lastly, we have stored all images in Firebase's Storage section. We have created a folder named images. (Figure: 4.23)
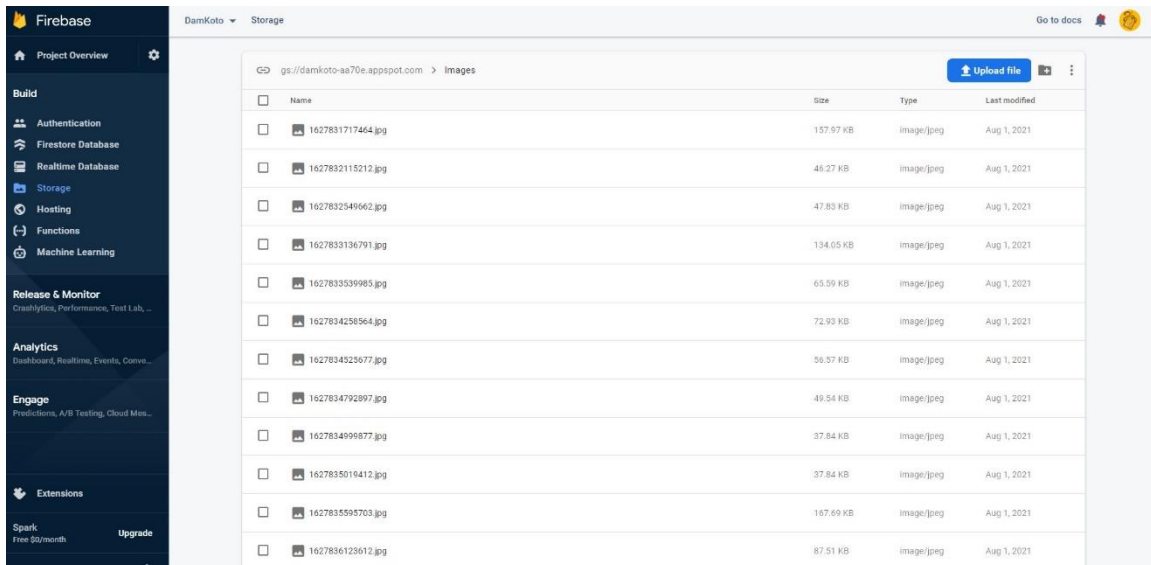

Figure 4.23: Firebase storage section images folder

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation Technology

We have used:

- ✓ Android Studio Version: 3.5.3
- ✓ Programming Language: Java
- ✓ Markup Language for design: XML

5.2 App Implementation

We followed a few steps while implementing. We have already written about some of them. The summarized steps are given below with previously written reference:

- ✓ We started a project in Android studio and started creating our Navigation drawer first, we did it manually so that we can customize everything as we want. We made the navigation drawer based on Fragments not activity. We tried to keep our application as light as possible. We have finished the whole development only using two activities, the rest are all fragments.

- ✓ Then we started writing code on each Fragments layout resource .xml file. We have used Material design in most of the parts. We finished writing code and making the design alive on our android studio for all the pages described in Chapter four (4.2.3 to 4.2.12).

- ✓ After that, we started our Java coding. We started with the admin panel first. Written all necessary code to make that page alive because at first, we need to add data to our Firebase so that the other section of the app can pull data from firebase and show them. For making this happen we created a project in Firebase, connected our Android Studio project with that by following Firebase documentation. [9]

- ✓ Then we figured out how database structure should be! So that, we can pull data easily into a different section of the app like the home page, all gadgets page and shop-wise price page. And finally done coding for that. This structure is described along with images in Chapter four (4.3 Back-end Design)

- ✓ Then we implemented our home page along with the search option. We have the necessary code for this test with some general test data.
- ✓ After that we started writing code for all the sections one by one. We created all necessary fragments and set connections between them, we designed all necessary tab views, recycler views, card views, rows, etc. Then, we made all necessary model classes, adapter classes, view holder classes. We added all the necessary images, .pdf, .xml and other resources into our res folder. We have written all necessary strings, set all colors and themes, added all necessary libraries into build.gradle and all.
- ✓ Then we made sure that our app is successfully pulling the data from our firebase and everything is working properly by putting some test data.
- ✓ After that we started collecting our data as per requirement which format is written on Chapter Three (3.4 Data collection requirements)
- ✓ And finally added a splash screen and moved forward to our next stage which is to load data and test the app.

5.3 App testing

Software testing is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. [10] Well, from our implementation period we started the testing period as well. Whenever we finished implementing a page, we tested it with necessary data that is working properly or not. Then again, after the whole implementation we first loaded some real data that we collected and started testing our app. We tested in every possible way that a user can use our app. We checked with all nodes on the database to make sure there is no gap. In the meantime, use checked all text fields, edit text fields, buttons, spinners to make sure they work properly.

5.4 Bug Fixing

While testing the app we find lots of bugs in our app. Bug in text, bug in design, bug in handler, bug in database codes, etc. We fixed those properly and handled all possible errors with different error handler techniques. One most common error we faced is the null pointer exception. Null Pointer Exception is a Runtime Exception. In Java, a special null value can be assigned to an object reference. Null Pointer Exception is thrown when a program attempts to use an object reference that has the null value. [11]

5.4 Test Report

After two weeks of testing the app with various test data and fixing all the bugs are app is now running properly. All the sections are responding properly, the connection between all fragments and activities are 100% okay and there is no more error in data handling. Data are inserting properly as well as fetching. Login authentication, Data searching, Purchase link, etc. everything is working properly. (Figure 5.1 to Figure 5.5)
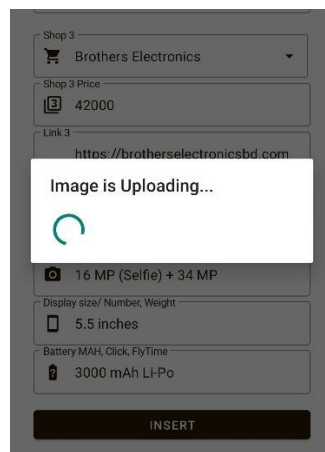

Figure 5.1: Image uploading progress bar

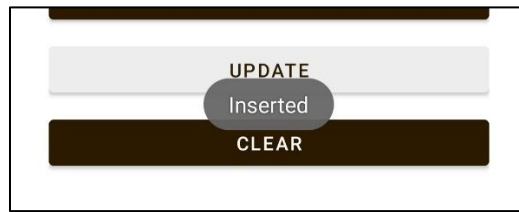Figure 5.2: Image upload success toast
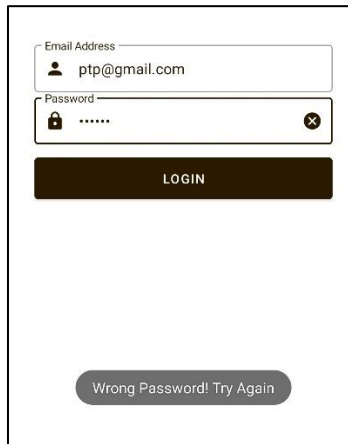
Figure 5.3: Data insertion success toast
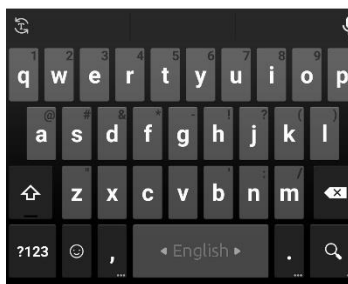

Figure 5.4: Authentication working properly

Figure 5.5: Searching working properly

CHAPTER 6

SOCIAL ASPECTS

6.1 Impact on Society

Time and tide wait for none. Time is the most precious thing in our life. The biggest advantage of our application is that, by using our app people can save their time. They don't need to search over the internet for BDT prices or visit different websites anymore. Our app is an 'all in one package' for all gadget lovers who want to know their desired gadget's price. Therefore, we can say that there is no negative impact of our project on society. If someone uses our app to find prices they can save some time, get some ideas but there is nothing harmful here.

6.2 Ethical Aspect

All the data here will be uploaded through the admins which are basically us. Therefore, there is no chance of having fake data or any privacy issues. All the shops we have listed have already been authenticity tested and they are trusted.

6.3 Risk factor

Initially there is no risk factor in our project app. We added authentic website's data. And we are just showing people the path. We are not preparing any decision for anyone. We just show the user the price, spec, shop-wise price, give them the purchase link but the user will decide what to do next. Therefore, we can say that there is no risk from our side.

CHAPTER 7
CONCLUSION & FUTURE OF THIS PROJECT

7.1 Conclusion

We tried to make our app as user friendly as possible. We also tried not to make the app heavy so that people can easily install and use our app. If we can maintain the app regularly, hope people will be beneficial by using our application.

7.2 Future Scopes

This is an era of science and era of technology. Day by day people are getting used to all new technologies as well as new electronic devices. Therefore, there are lots of future scope of this project. If we get proper support, we can make this project even bigger and help people even more.

New technologies are coming day by day. So, surely if we think more and more, we can contribute something new into the project.

7.3 Further Development

The main future development of this project can be adding API from different Bangladeshi websites. The more API we can manage and add to our app the more updated our app will be in terms of price and products.

Then we can add more categories into the app like: Tab, smartwatch, Laptop, etc.

7.3 Future Challenges

The more we are going to make things bigger, the more we need to face challenges. The most challenging part of this project is to collect API. So, this will also be one of the vital challenges for this project's future work. People nowadays don't like to share things. Moreover, some owners don't even know about the concept of API. Maybe, they think that, with API we can manipulate data which is not true. On the other hand, It is really hard to reach a developer of the site who can at-least understand and maybe explain it to the owner or give the API himself. Therefore, it can be said that we need more support to manage API or we can make awareness, create some campaigns about it so that they can know the benefits of it and are willing to share their API

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