

# **Building an Andriod based Automation System for Panta Para Union Parishad, Jhenaidah, Bangladesh**

**BY**

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This Report is presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering

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## APPROVAL

The Project Report on “**Building an Andriod based Automation System for Panta Para Union Parishad, Jinehdah, Bangladesh,**” submitted by **Md Abdulla Al Mamun** bearing ID: ECSE 120180320132 of the Department of Computer Science and Engineering, Northern University of Business Technology has been accepted as satisfactory for the partial requirement for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents.

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## DECLARATION

We hereby declare that the work presented in this project work in the outcome of the investigation performed by the under the supervisor of Md Rabiul Islam, Co-Advisor Department of Computer Science and Engineering, Northern University of Business Technology Khulna. We also declare that no part of this project has been or being submitted elsewhere for the award of any degree.

Signature

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## ACKNOWLEDGEMENT

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## **ABSTRACT**

Android is a platform that is easier to master for developers having varying skill levels. Mobile app development services can utilize Android with much greater ease than any other platform. Android uses Java which is a programming language that most developers are intimately familiar with. At a glance this apps we can find the list of items and many more.

Information Technology Foundation established at the Hon'ble Prime Minister's Union Union

Parishad under the Access to Information (A2I) project of the Prime Minister's Office on

11/11/2010 under the slogan 'Service at the Doorstep of the People' to build a digital Bangladesh in the vision of the Government of Bangladesh 'Vision 2021'. Inaugurated Information and Service Center (UISC). An information and service center was also set up at Union Parishad Office No. 3 Panta Para Union as per government instructions. As a result, the general public of the union can receive various information technology services in addition to their required citizenship certificate from this information and service center. The scope of services of this center is increasing day by day. This project will develop an automated information system using Android platform for the welfare of rural people specially my union Panta Para Union of Jinadeh district of Bangladesh.

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# **CHAPTER 1**

## **INTRODUCTION**

### **Introduction**

Pantapara Union and Fatehpur Union were one union but as the area of the union was wide, it was not possible for the chairman members to take care of it. The first chairman of which is Mr. Md. Abu Bakar Mia. Sundarpur Zamindar Bari, Maheshpur. Sundarpur belongs to the Panta Para union of Maheshpur Upazila of Jhenaidah district. An ancient growing village. Located on the north bank of the Kopotaksh River, the village is famous for its lush green surroundings and the heritage of the Chowdhury family. Left in this area. A paved road from Pantapara goes a little farther south, turns east, passes through the village of Sundarpur, and goes east through Chowdhury Bari. Chowdhury's house can be easily reached by following this road.

To the local people, the house is known as Zamindar Bari. The youth of Chowdhury's house is no more. There is only the impression of compulsion. The zamindar is gone, the zamindari is also gone. There are only a few buildings that are dilapidated and almost fragile. It is heard that in the beginning the area of the original house was 50 acres of land but now it has been divided into many parts as a result of the increase of partners. As a result, the main buildings are just memorable historical monuments and are neglected as usual.

The locals say that the village was named Pantapara under the influence of the Chowdhury dynasty. Now we live in Digital Bangladesh 2021. Everybody has an android phone. Usually we are not searching information of website via browser, it is difficult to find the desired information and it is also waste of time. The main problem is it needs internet connection. Therefore, if I develop an android apps by my union parishad all of information to gather it. It will be very easy for all to find all the information in offline search any data easily.

### **Motivation**

We believe that Panta Para Union Android Apps will be fastest and easiest android base mobile application for help us All of Union Peoples. Here we are attempting to approximate the shared and supportive environment of a real world class. But Panta Para Union Android Apps makes a huge difference in information about Union and learning. Offering an online solution to public to get connected with members to chairman will enable easy interactive, efficient communication from both end and it will develop the process of Communication. So it is a better getting information for all union parishad people

### **Aims and Objectives**

Pantapara Union Parishad Android Apps is a information and learning environment created in the virtual space. The objectives of Pantapara Union Parishad Android Apps are to improve advanced information experiences by allowing chairman and members to participate in remote learning communities by using personal mobile phones

### **Aims of the Project**

The main aims of this project are as follows

- Exposure to an online learning platform
- Make easy to use information technology
- Spread your knowledge with everyone
- Is willing to try new technology
- Is comfortable with his training skills
- Engaged in the learning process

## Report Layout

Report layout describes a summary of all the chapters. A brief summary of all chapters is given below:

- **Chapter 1:** Describes an introduction of the Panta Para Apps, Motivation, Aims and Objectives, Expected Outcome and the Report layout.
- **Chapter 2:** Describes the background, the related works, Union Parishad Description
- **Chapter 3:** Describes the Android Studio, System requirements, XAMPP, Sublime Text.
- **Chapter 4:** Describes the Block diagram, Description of application, Use case modeling and description, System architecture, E-R diagram and description.
- **Chapter 5:** Describes the Implementation of Front-end design, Back-end design, Data table name, Data type architecture, MySQL database, Database table structure, Testing methodology, Functional testing, Unit test, Compatibility test and result.
- **Chapter 6:** Describes the conclusion where the goal, limitation and future scope have been described.

## **CHAPTER 2**

### **BACKGROUND**

#### **Introduction**

Though few projects have been done to explore the effective way of virtual Details Of Union Parishad Apps, but very few of them have been conducted in the context of Bangladesh. There are several organizations which are trying to research and develop the virtual education system in Bangladesh, In third world countries like Bangladesh, Internet Bandwidth is still now costly. the people of pastoral area or villagers may not afford the bandwidth enough to to details to know the About Information. However, some questions have been raised for this project –

- How to explore the concept of a Union Apps where members and chariman can play their role interactively?
- How to make it more effective mostly in the context of Bangladesh?
- How to make it effectively running in the lower bandwidth?
- How can the modern education spread to the each district of Bangladesh and other countries?

## **Related works**

In this section we discussed the recent project and related works evolving this area.

**Amar UP:** One of my UP applications is Janakalyan core applications. Find out the details of your district, college, union soon.

**Nagarkanda Upazila:** Nagarkanda is an upazila in Faridpur district in the Dhaka division of Bangladesh. The total number of unions in this upazila is 9, besides, the upazila also has heritage, places of interest, rivers, markets, various trades. The Union Parishad of the upazila has various rules and regulations including chairman, vice-chairman and female chairman. There are Upazila Nirbahi Officers and officers and employees in the administration of this upazila, there are officers and employees engaged in various activities in the municipality along with the Mayor. Moreover, there are all kinds of government offices, educational institutions, religious institutions, private institutions.

**Gram Adalat:** Gram Adalat in Bangladesh provides support to the justice system by easy and quick settlement of disputes and conflicts in certain areas. This application is a complete guideline to understand and implement Gram Adalat. It also includes: - Frequently asked questions. -Gram Adalat law 2006. -Tofsil. -The Penal Code. - Affidavit. -Rules. -Related forms. -Related flow charts etc.

## **Challenges**

With new platforms, changing roles and evolving user's demands, maintaining an effective social learning across the internet is never easy

### **What are we thinking?**

The first challenge was faced after submitting the first wonder documentation of this project with our ideas about how we want to create a smart Virtual learning system about Union Parsishad. The receiving data from database and the interaction with database was challenging. The most critical part of this system was the assumptions that we choose for our system.

### **Young Researchers**

We believe that this process and the challenges we faced, we have become three young engineer that have learnt how to

- Have an idea
- Think about it
- Research around the concept
- Not to be afraid to confess about being wrong
- Do what it takes to finish the job

This process made us to go through android articles, discussing Mobile information systems and their development tools, and take part about the future of Application developing and opportunities. All these we have learnt so much about the mobile computing and the future of it from expert's point of view.

## **Time**

The last, but not least which can be even called our biggest challenge in this work has been the factor of time as all of us are working full time and studying beside it. To agree on appointments and meet up was one of the most challenging parts of the job, as the project itself was a very interesting subject and it was fun to get the job done, but we learnt quite a lot from this process to be well structured and well planned.



## CHAPTER 3

### REQUIREMENT SPECIFICATION

#### **Android Studio**

Android Studio is the official integrated development environment (IDE) for Google's Android working framework, built on JetBrains IntelliJ IDEA software and designed specifically for Android development. It is accessible for download on Windows, macOS and Linux based working frameworks. It is a substitution for the Eclipse Android Development Tools (ADT) as essential IDE for local Android application advancement.

Android Studio was declared on May 16, 2013 at the Google I/O conference. It was in early access see organize beginning from variant 0.1 in May 2013, at that point entered beta stage beginning from adaptation 0.8 which was discharged in June 2014. The principal stable form was discharged in December 2014, beginning from rendition 1.0. The present stable rendition is 3.0 discharged in October 2017.

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Android software development is the procedure by which new applications are made for the Android working framework. Applications are typically created in the Java programming dialect utilizing the Android Software Development Kit. ADT (Android Development Tools) is the product used to create android applications. It fundamentally encases Eclipse IDE, which is a multi-dialect Integrated advancement condition (IDE) containing a base workspace and an extensible module framework for tweaking the earth.

The most recent rendition accompanies ADT module preinstalled and packaged to the IDE. This is the manner by which the IDE looks like with the essential components checked.

Application programming interface (API) determines how some product segments ought to communicate with each other. In most of the cases an API is a library that as a rule incorporates particular for schedules, information structures, question classes, and factors. An API detail can take numerous structures, including an International Standard such as POSIX, seller documentation, the Microsoft Windows API, the libraries of a programming dialect, Standard Template Library in C++ or Java API.

Google APIs can be downloaded from Google Code, Google's website for engineer instruments, APIs and specialized assets. The Google Data API enable software engineers to make applications that read and compose information from Google administrations. Right now, these incorporate APIs for Google Apps, Google Analytics, Blogger, Google Base, Google Book Search, Google Calendar, Google Code, Search, Google Earth, Google Spreadsheets, Google Notebook, and Picasa Web Albums.

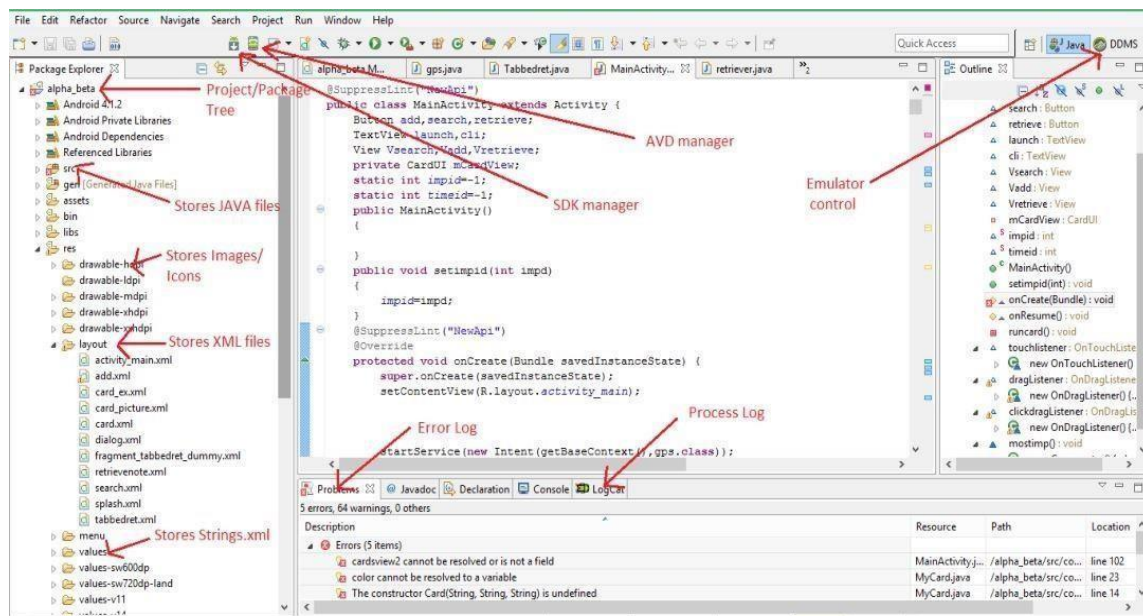


Figure 3.1: Interface of Android Studio

SDK (Software Development Kit or "Devkit") is normally an arrangement of programming improvement apparatuses that takes into account the production of uses for a specific programming bundle, programming structure, equipment stage, PC framework, computer game comfort, working framework, or comparable advancement stage.

It might be something as straight forward as an application programming interface (API) as a few records to interface to a specific programming dialect or incorporate modern equipment to speak with a specific inserted framework. Basic instruments incorporate investigating helps and different utilities frequently displayed in a coordinated advancement condition (IDE).

In the most recent variant of ADT, the android SDK includes to the IDE consequently when you unfasten and stack the IDE.

SDK Manager empowers us to download Google APIs and utilize them in our code.

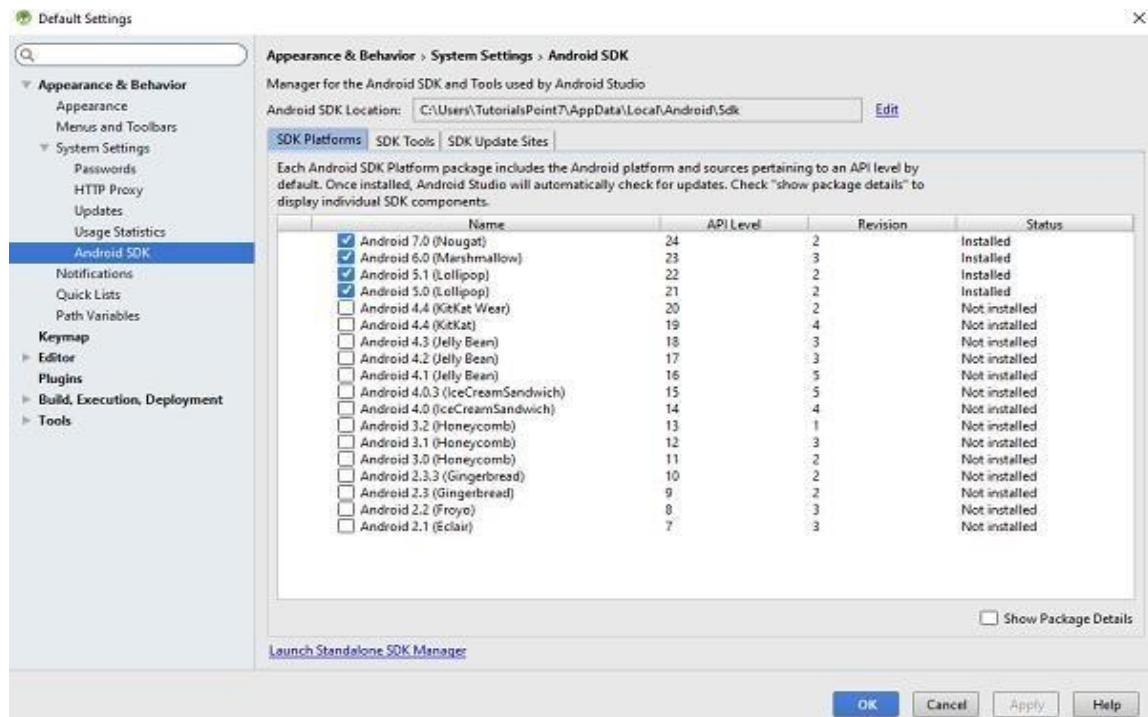


Figure 3.2: Android Studio SDK Manager

## System Requirements

**Table 3.1: Version 3.x**

Criterion	Description
OS version	Microsoft® Windows® 7/8/10 (32-bit or 64-bit) Mac® OS X® 10.10 (Yosemite) or higher, up to 10.13 (macOS High Sierra) GNOME or KDE desktop Linux (64 bit capable of running 32-bit applications)(GNU C Library (glibc) 2.19+)
RAM	3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
Disk space	2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
Java version	Java Development Kit (JDK) 8
Screen resolution	1280×800 minimum screen resolution

**Table 3.2: Version 2.x**

Criterion	Description
-----------	-------------

<b>OS version</b>	Windows 7 or later Mac OS X 10.9.5 or later GNOME or KDE desktop Linux
<b>RAM</b>	8 GB RAM recommended; plus 1 GB for the Android Emulator
<b>Disk space</b>	500 MB disk space for Android Studio, at least 1.5 GB for Android SDK, emulator system images, and caches
<b>Java version</b>	Java Development Kit (JDK) 8
<b>Screen resolution</b>	1280×800 minimum screen resolution.

**Table 3.3: Version 1.x**

<b>Criterion</b>	<b>Description</b>
<b>OS version</b>	Mac OS X 10.8.5 or later GNOME, KDE or Unity desktop on Ubuntu or Fedora or GNU/Linux Debian
<b>RAM</b>	3 GB RAM minimum, 4 GB RAM recommended

<b>Disk space</b>	500 MB disk space
<b>Space for Android SDK</b>	At least 1 GB for Android SDK, emulator system images, and caches
<b>JDK version</b>	Java Development Kit (JDK) 7 or higher
<b>Screen resolution</b>	1280×800 minimum screen resolution

### **Features:**

The following is a list of features of Sublime Text:

- "Goto Anything" speedy route to records, symbols, or lines
- "Command palette" utilizes versatile coordinating for speedy console summon of self-assertive charges
- Simultaneous altering: at the same time roll out the same intuitive improvements to numerous chose territories
- Project-particular inclinations
- Extensive adaptability by means of JSON settings documents, including venture particular and stage particular settings
- Cross-stage (Windows, macOS, and Linux) and Supportive Plugins for cross-stage.
- Compatible with numerous dialect sentence structures from TextMate.
- Auto save, macros and repeat the last action.

## CHAPTER 4

### PROPOSED MODEL AND DESIGN

#### Block Diagram

The block diagram provides a top level listing of and basic interaction of applications. Here is the block diagram. The figure is given bellow:

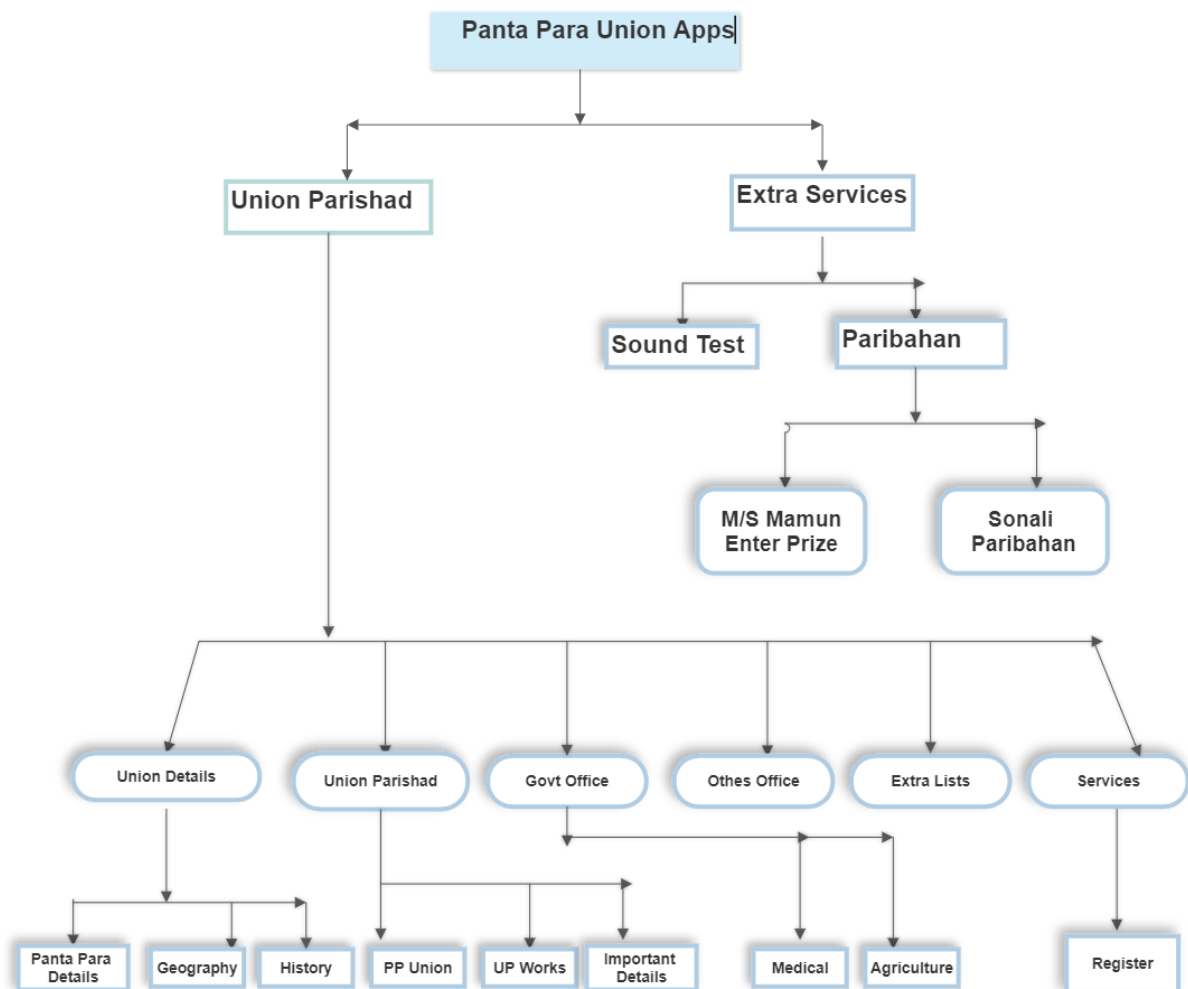


Figure 4.1: Block Diagram

## **Description of Application**

**Union Details:** Details of Panta para UP and Also Given information of Geography, Maps, Population, Commination and History

**Union Parishad:** At a glance of Panta Para Up, Important Information, Service Of UP

**Govt Office:** There are 4 items in this section are Medical Services, Agriculture, Land, Social Work

**Other Institute:** Is this items of All Education Institute, School, Private Institute, Religion And Club

**List Of Others:** BRDB, Department Of Women Affairs.Etc

**Services:** Register Of Union Parsishad

**Extra Services:** Sound System of Typing. If you can poor in pronouncing in English Don't worry Enter your word here and Click

Submit

**Bus Services:** There are Two service in this union Parishad, M/S Mamun Enterprize, Sonali Paribhan

**FAQ:** Frequently Asked Questions (FAQ) or Questions and Answers (Q&A) about our Panta Para Union Parishad



## System Architecture

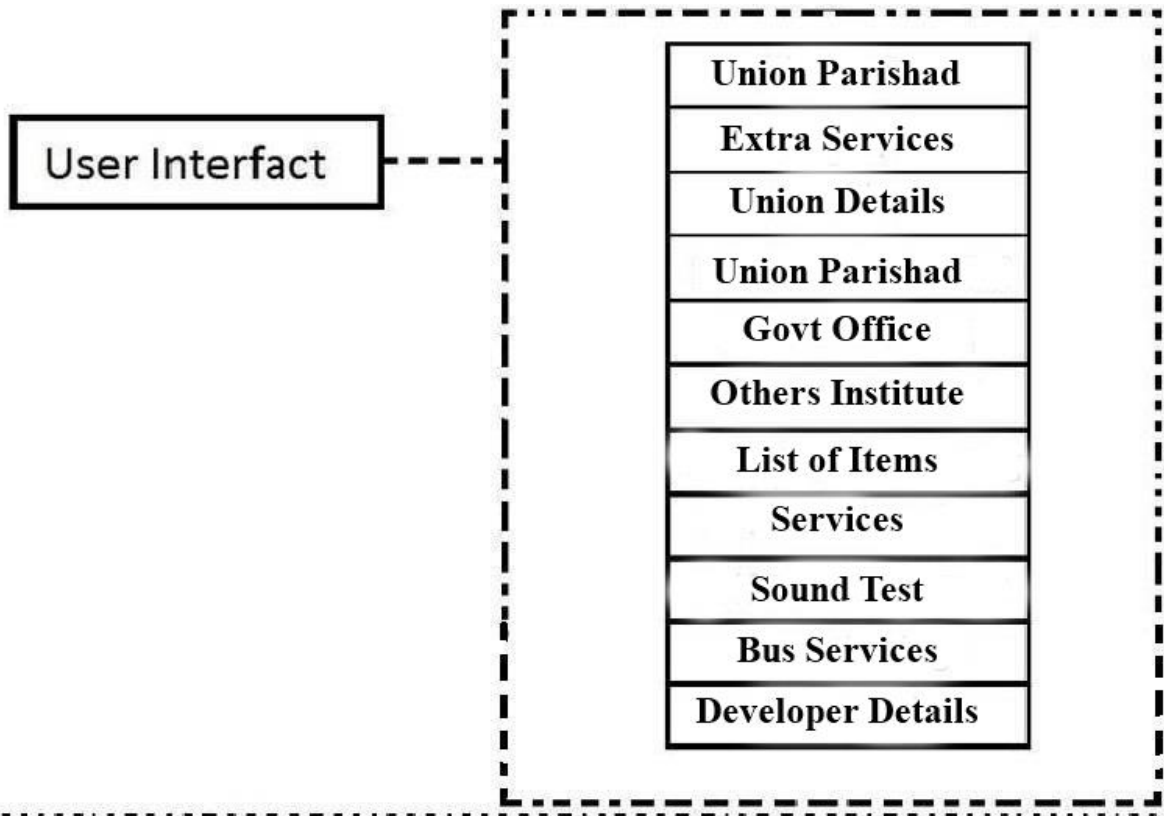


Figure 4.3: System Architecture

## CHAPTER 5

### IMPLEMENTATION AND TESTING

It is necessary to make it clear that this project was designed and developed entirely based on collecting information from existing systems, concepts and imaginary scenarios. To remind the readers of this report, there are many developers who are still arguing about the core concept of different components of the android based education system. Their opinion is that we are trying to implement the new system

#### Implementation of Front-End Design

The screenshots below show the main project view. Capture an image of what you see on your mobile screen and how use it.

**Home Activity:** In the Panta Para Union Apps home activity there are Two option available

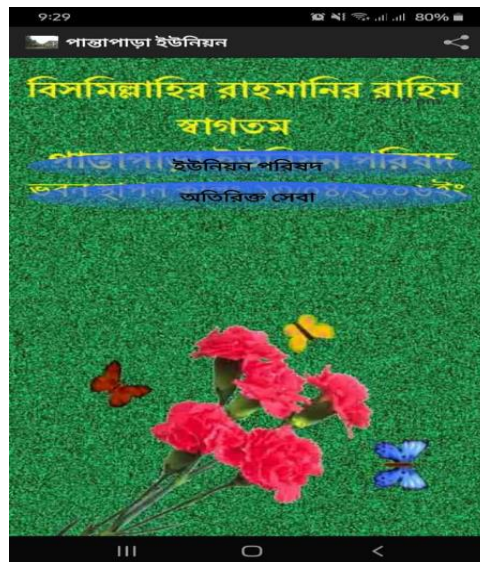


Figure 5.1: Panta Para UP Home Activity

**Union Parishad:** There are six items in the interface are Union Somporkito, Union Parishad, Govt Office, Govt Office, Others Institute, List Of Others Institute, Services.

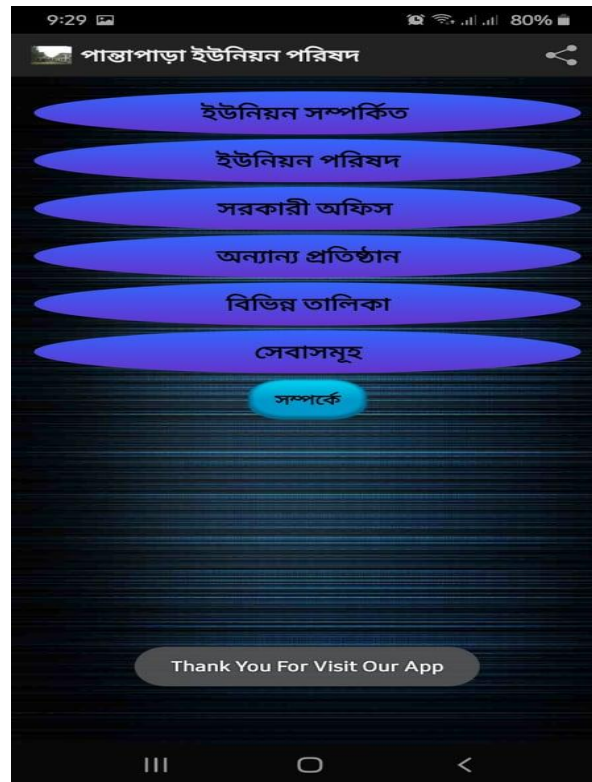


Figure 5.2: List of Second Interface

**Institute:** There are Govt and Private Institute are included here



Figure 5.3: Govt and Private Institute

**Sound Test:** Most of all Village peoples are illiterate so they should be try to English pronunciation through the sound system option.

**Noticeboard:** If any people go to Village to Dhaka , they select to be Paribahan Option.



Figure 5.4: Sound Test And Paribahan

## **Testing Implementation**

This project was judged on the following set of criteria:

**Satisfying requirement specifications:** The project is said to be successful if it satisfies all the requirements such as functional and non-functional requirements. In other words, it should be capable of ensuring the requirement specifications.

**Correctness:** It is one of the critical requirements of software development. Perfectness is the basic demand for service oriented software. Each and every part of the application should work properly and accurately.

**Real time management:** The application is about Panta Para Union Apps. So, it is necessary to maintain the real time scenario. The users of this system should have the ability to maintain this.

**Reliability and security management:** The security is one of the important factors in any service oriented systems. For this reason, the evaluating criteria on the security features that had been taken under account when the system was developed.

**User friendliness:** Friendliness in any applications is also a special criterion to judge the systems. For instance, the users of this solution should feel contented when they are using the system. In essence, a system should have the quality measures properties, such as efficiency, portability, reusability, flexibility, cohesion and loose coupling among different components of the designed software.

## **Testing Methodology**

Testing in general, software testing is used to find out system errors. A software test can be carried out by examining codes, design and execution of the whole system. Testing is inevitable to improve the quality of the system. Reviewing and testing code is another basic of software engineering that is often overlooked in project development. Testing is an integral part of the system development process. The main Standard for software Testing is contained in the ANSI/IEEE standard 829/1983- Standard for software testing Documentation. Some software testing may also be performed by CAST (Computer Aided Software Testing).

## **Functional Testing**

In functional testing tester has to validate the application to see that all specified requirements of the user's whatever we have said in supplemental restraint system have been incorporated or not.

- There are two categories of functional testing:
- Positive functional testing: testing the application's functions with valid input and also verifying that the outputs are correct.
- Negative functional testing: IT involves exercising application functionality using a combination of invalid inputs some unexpected operating conditions and by some other "out-of-bounds" scenarios.

## **Unit Test**

Unit testing is generally used in a detailed designing and implementing phase of this project. The rationale of unit test was to find out the defects in this project.

### Compatibility Test

Compatibility Testing, part of software non-functional tests, is testing conducted on the application to evaluate the application's with the computing environment. Software compatibility testing can be more appropriately referred to as user experience environment. This project is tested on different types of android mobile to ensure the following-

**Table 5.1: Compatibility Test Result**

Android Device Name	Screen Size	Test	Result
Samsung Galaxy Core Prime	4.5 inch (480p)	Yes	Okay
Samsung Galaxy S II	4.3 inch (720p)	Yes	Okay
Walton Primo GM	5.0 inch (480p)	Yes	Okay
Symphony Xplorer T8 Pro	8.0 inch (WXVGA)	Yes	Okay
Xiaomi Redmi 4x	5.0 inch (720p)	Yes	Okay
Xiaomi Redmi Note 3 Pro	5.5 inch (720p)	Yes	Okay



## **CHAPTER 6**

### **CONCLUSION AND FUTURE SCOPE**

#### **Conclusion**

Great service to the country. It comes down to man from God. I will try my best to fulfill the responsibility that has been given to me. On 23/06/2014, the National Web Portal was inaugurated under the Access to Information (A2I) project of the Prime Minister's Office. Which is a landmark step in building a digital Bangladesh?

As part of this information window, No. 3 Panta Para 'Union Information Window' (Union Web Portal) has been opened. Through this information window, people from any part of the world will now be able to know about the history and heritage of the No. 3 Panta Para, geographical location, language and culture, education, health, agriculture, transportation, development activities, social service activities, etc. In the current age of information technology, I can present the No. 3 Panta Para Union to the people of the world. And this has been possible only through the creation of this information window.

#### **Goal**

The main goal is to create an android application where both Chairman and members and votar can learn and teach at the same time. To build a good community and good relationship between Votar and members is one of the important goals of our application.

#### **Scope for Further Developments**

- Interface design will be updated
- More features and functionalities will be added
- Reliability of the application should be increased

## REFERENCES

- 5 Years Development Project of 2013 <https://bit.ly/3nfLEMf>
- My UP apps are a public welfare apps. Updated June 2, 2020 Size 12M Installs 5,000+  
Current Version 5.0.1 Requires Android 4.4 and up. <https://cutt.ly/nvCf5pR>
- Nagarkanda is an upazila in Faridpur district in the Dhaka division of Bangladesh.  
Updated June 12, 2019 Size 3.9M Installs 10+ Current Version 1.0 Requires Android 4.0.3  
and up. <https://cutt.ly/SvChpsu>
- (Gram Adalat) Gram Adalat in Bangladesh provides support to the justice system by  
easy and quick settlement of disputes and conflicts in certain areas. Updated February 26,  
2017 Size 7.4M Installs 5,000+ Current Version 1.0.03 Requires Android 4.0.3 and up.  
<https://cutt.ly/fvChkd0>
- Dawn Griffith and David Griffiths Head First Android Development: A Brain-Friendly  
Guide 2nd Edition