

E-Learn: Development of an Android Based Mobile Application

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
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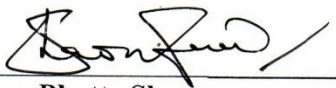
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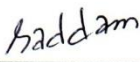
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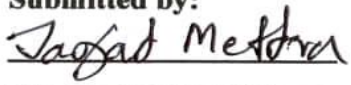
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ABSTRACT

This project is on An Android based Application for Child E-Learning. The purpose of this app is to develop and evaluate and mobile base educational system that supports fun learning for children. It aims to be a learning tool with an attracting design that would help children learn alphabets, mathematics, rimes, name of place, country, animals, and so own by using an interesting and fun-learning concept. Research methods include methods of data collection, design, and implementation. Data collection was done through research literature. Designing the learning application using database and implementation was the done using the waterfall model for the software development life cycle. By using this app children can learn, write as well as pronounce alphabets for making learning impactful on children memory there are many picture and related interesting sentence in this apps. Here also included many rimes to make it more interesting and to prevent monotones. There is no difficulty in using this app. In short, the app designed to promote, active, engaged, meaningful, and society interactive learning four pillars of learning.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The one of the basic need of people is education our apps is an android based child learning system and it operates through both online and offline in anywhere and anytime. The app is only for the child who played in mobile most of the time and try to teaching through mobile. The app easy to use. All things in the app like alphabets, rimes, mathematics are according to this age like up to the age of 5. They can also write and learn how to pronounce it the speaker volume is kept at this suitable range. The report will give the information about the project such as requirements, feasibility study, design, and development process.

1.2 Motivation

Behind building this system we are motivated by so many things. With advancing the modern era along with adult children also become more addicted to mobile phone. We saw many parents give the children to make the calm. But this hampers their learning system. The child waste their most of the time in playing game. This game is not only hamper their learning but also impair their mental growth, socially isolated and also many psychological problem in early age. But the app is designated in such way that they use mobile but learn through it. Here we included many interesting picture of alphabets rime, mathematics which easily draw the attention of the children. The can also use the apps as their notebook. They can write and remove if wrong to improve their listening we also add the actual pronunciation of the alphabets both English and Bengali. So, we hope the app will have a great positive, effect on children, family as well as on the society to make a bright future of nation [1].

1.3 Project goal/objective

Goal and objective form the most significant component of a project proposition and excellent attention should be paid to framing them. Setting the objective is often the first step towards proposition as it lays the basis for the project. The next step is to define goals that directors of the program should not ignore both these measures as well as well drafted goals and objective is the most component of a project proposal, and excellent attention should be given to framing them.

Each Child is different and of course the educational goals will be included. But we can apply the same outline for every kid to setting educational goals that they can achieve.

Goal One

To ensure that no family want to be her learn children.

Objectives:

- Make child learning app resources and information available to families.
- Conduct research about the need for, benefits and costs of child apps.

Goal Two

To ensure that high quality educational child apps is accessible to all children.

Objectives:

- Develop and provide information about accessible, high quality apps option for children.
- Conduct research on states of and factors that affect the accessibility of child learning apps locally, statewide and nationally.
- Develop and provide information about technical assistance, education and other supportive initiatives designed to improve the quality of child learning apps.

1.4 Who are the users of this application

There are two types of user of this system

- Children
- Parents

1.5 Expected Outcome

This project's outcome is very easy but significant. Some points have been mentioned Bellow-

In this project child or student can get and provide maximum feedback. So, in the expected outcome will be like an app where student/child can provide a feedback to teachers and another child/student.

1.6 Report Layout

We developed an application which name is **Child E-learn**. We ensure the completion of the project in time. Respect to our We design our project report in accordance with our workflow. Discus the Introduction, Related Works, Comparative Studies, Scope of the Problem, Challenges in chapter 2 named Background. The Business process modeling, Requirement Collection and Analysis Descriptions, Logical Data Model, Design Requirements are discussed in Chapter 3 named Requirement Specification. Back-end Design, Front-end Design, Interaction Design and Implementation Requirements discussed in chapter 4 named Design Specification. We address the implementation of the database, Implementation of front-end design, testing implementation, test results and reports in chapter 5 named Implementation and Testing.

CHAPTER 2

BACKGROUND

2.1 Introduction

Child Learning app is Android Based Application. It is also an online and offline based app. This chapter is having details work present, comparative analysis with our app. Details about Learn of the application is explained. Our target and challenges that we face are described here.

One of the most common activities that youth perform online is education work. According to 2018-2019 study by Internet & Bangladesh Life project [1].

- Nearly every online kid (75%-80% using the Internet in childhood) has used the Internet for game and cartoon.

2.2 Related Works

We are using the canvas in our application for draw the alphabets. Children draw the alphabets, reset the alphabets and save picture which draw the children in canvas. This will be a completely unique solution for Child Learning Apps.

2.3 Comparative Studies

E-learn System is an android based Application. This application is based on E-Learn app development. There are some applications like this one but we found most of the system is online and offline base. Nowadays people feel comfortable in mobile apps. We also found some mobile apps for property management app but those apps are only for the E-learn. But in this app e-learn can reading and writing, draw canvas & save file. Here E-learn can reply the question asked by the child for learn.

2.4 Scope of the Problem

Time schedule of Android Based Application for Child Learning Apps is shown here. We divided the work into many parts. It is help us easily complete the work. The time schedule table Bellow-

2.4.1 Time Scheduling

Table 2.1: Time scheduling of our project plan

Planning	1 month
Design And Analysis	25 days
Coding	3.5 month
Data collection	10 days
Testing and Implementation	1 month
Total	6 month 20 days

This time we complete the full project

The Scope is Application Module. Android based Application for E-Learn System has 1 Module. The main module o this app is Education. Herein this module an E-learn can create a profile, can post their flat rental advertisement.

2.4.2 Module

- Education Module

User module an E-learn. They can perform the below operation in this application

- a) Here the children can learn in this app
- b) This app download in the Google sites
- c) Child can draw the canvas
- d) This app help as basic knowledge

- e) Child can learn bangle letter
 - 1. Sharoborno
 - 2. Bhangonbono
 - 3. English Alphabets

2.4.3 Target of our project:

The target of our project is proper education of childhood. This app will also the help reading, writing and listening. Using this app does not require the carrying of books. App will also help the Children in good education. When Children in childhood 80% grow up knowledge. If in this time child learn proper education and child become a brilliant student.

2.5 Challenges:

As it's an android based mobile application, so if a student doesn't have an android phone then this app will not help him.

CHAPTER 03

REQUIREMENT & SPECIFICATION

3.1 Business Process Model:

Modeling business processes map periodic business process and find methods to enhance them. The most part of a business model is how to make learn from the model. In our E-learn app, there is a learning option

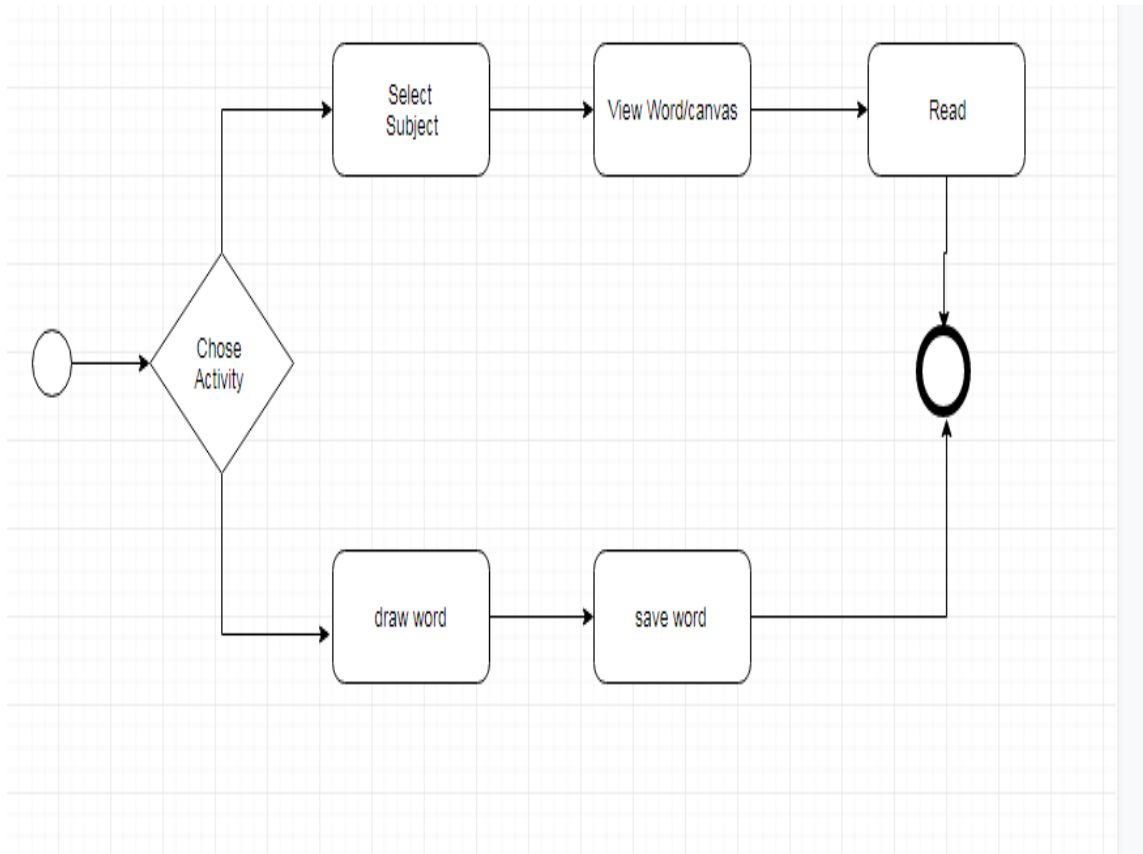


Figure 3.1: Business process model

3.2 Requirement and Specification:

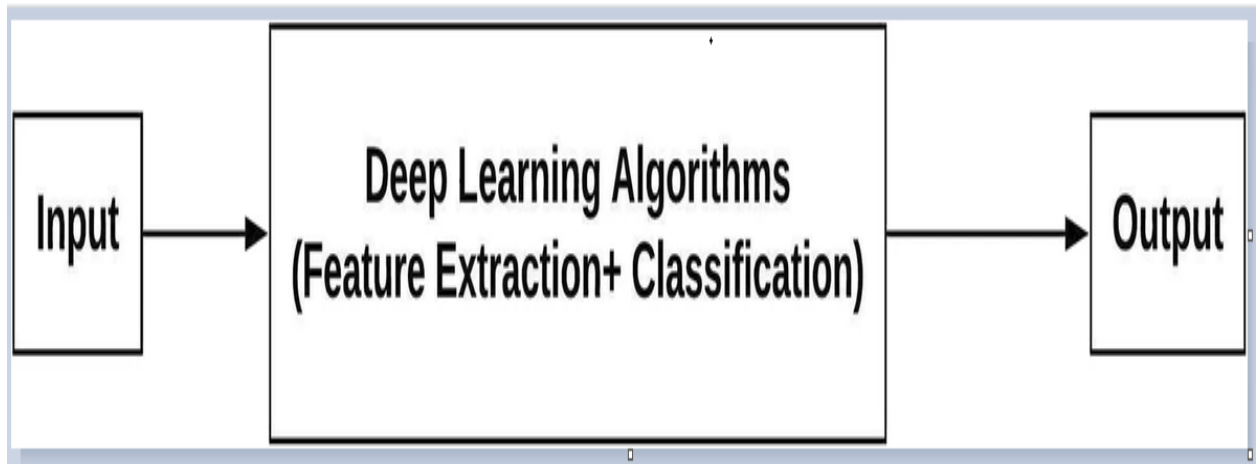


Fig. 3.2: Figure of Requirement and specification

Deep learning approach presents the object classifications deep learning strategy. Here the feature extraction and classification task are done simultaneously.

3.3 Requirement Collection & analysis Software Requirements:

To develop this application we used following Software & tools:

- a) Operating System: Windows 10.
- b) System Design: Photoshop
- c) Language: Java
- d) Database: Firebase Real-time database
- e) Tools: Android Studio[4]
- f) Technologies Used: Java, XML.
- g) Debugger: Android Debug Monitor service.

3.4 For running the application those following are the Software Requirements:

- Operating System: API 9 or update version
- Network: No need to internet collection
- Minimum space to execute: 30 MB

3.5 Hardware Requirements

To develop this application we need the following hardware requirement:

- Processor: Intel core I3
- RAM: 8GB
- Free space on disk: minimum 50GB

3.5.1 Functional Requirements

- Graphical User interface which the application user
- Give ease of understanding to the application through Wi-Fi or internet firebase real time database that stores the data or information to be displayed to the user.

3.6 Use Case Modeling and Description

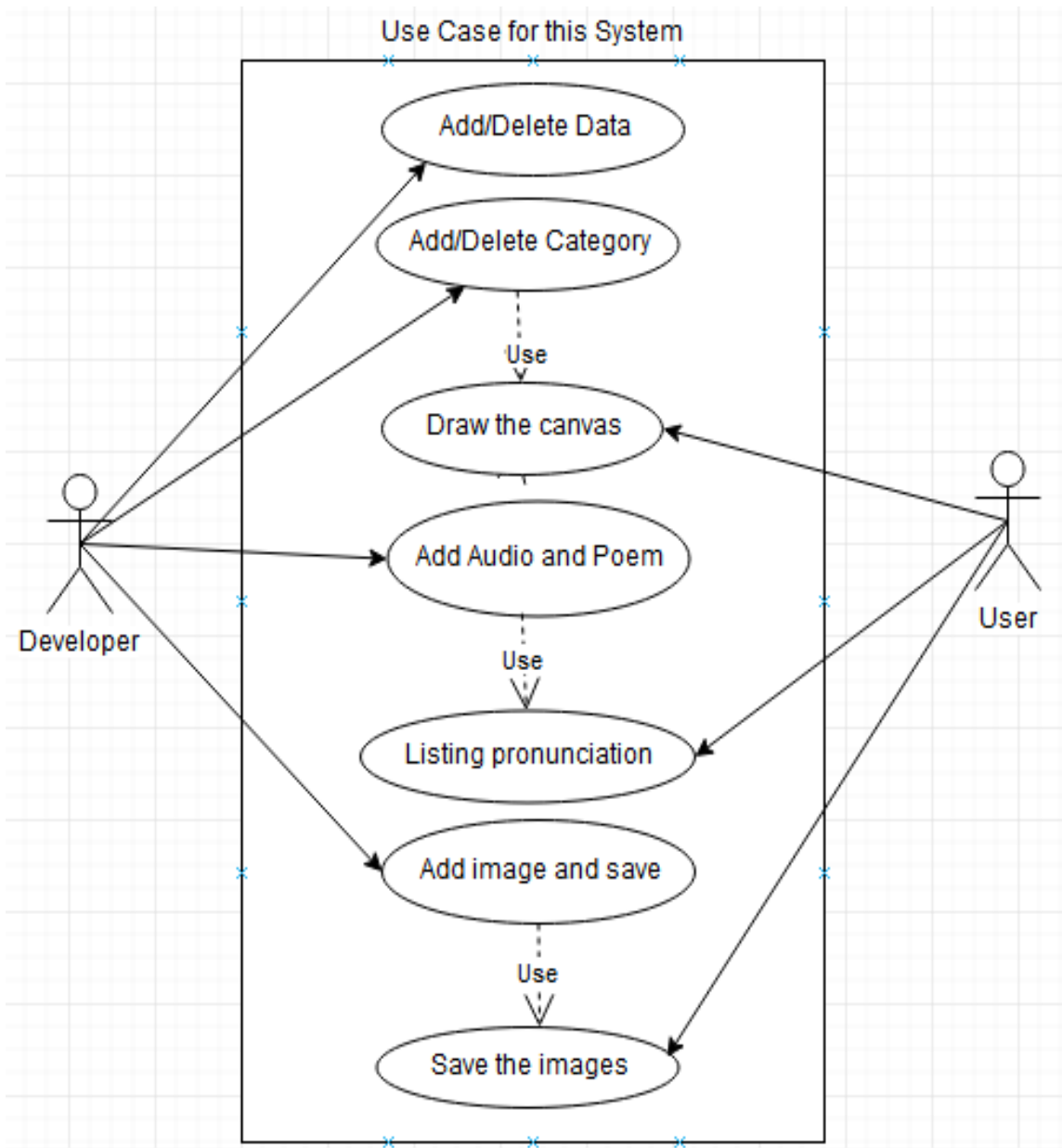


Figure. 3.6: Usecase diagram for this E-learn

Flow of steps:

- This steps start when the user first open the app. There will be one option is manual.
- Child has to select the category option.

Draw Rental Save:

Here the child can select their area draw and child can see image of other information. Listing alphabet in clear voice..

View all category, Update and Delete:

Flow of steps:

- After start the app can view all category
- Developer can Update the app
- Developer can be delete the category

3.7 Logical Data Model

The data processing modules are represented by the logical model. When used to analyze and process information readily. The Diagram/Model Entity-Relationship is the logical data model[2].

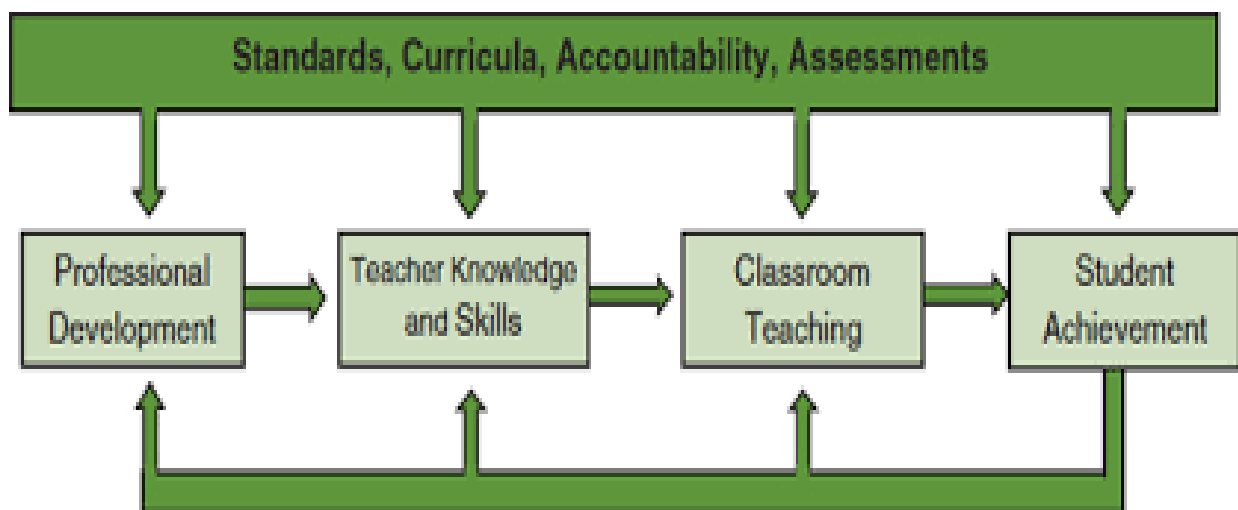


Figure 3.3 Database Diagram of E-learn system

3.8 Design Requirements

When designing system or software, follow issues must be considered that reproduce the overall design of the goals that the the system expected to achieve. The following goals have been mind when designing the system. Make system easy designing and flexible enemy users. System users can have good deal of control over their intent in attaining goals.

In this project, the flow chart we used is given below-

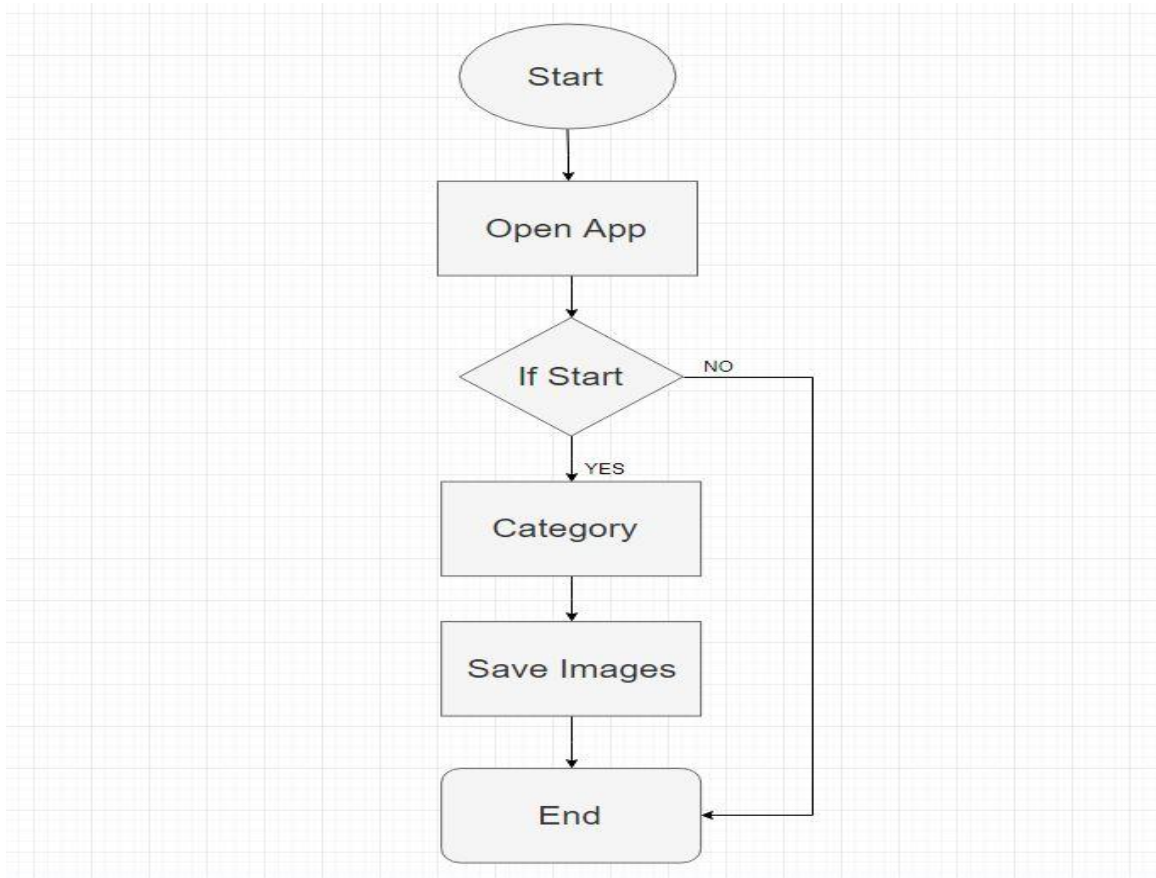


Figure 3.8: Flowchart of E-learn

CHAPTER 04

DESIGN SPECIFICATION

4.1 Front-end Design:

Front-end Design is the main fascination of an application. It also should be user friendly. Our application we designed an excellent front-end Design. We also try to design user friendly. Our Application has some activity screen in front-end Design.

4.2 Back-end Design:

Our application is dynamic feature that operations with Android Applications. Here we are using firebase real-time database. Firebase is a Backend-as-a-Service. Firebase frees developers to focus crafting spanning user experiences.

What feature I am using in this project:

- Firebase authentication
- Firebase real-time database
- Firebase real-time analytics
- Firebase storage

4.3 What is firebase real-time Database?

Store and synchronized data with our No SQL cloud database. Data is synchronized crosswise all clients in real time and remains obtainable when your app goes offline. The Firebase Real-time Database is a cloud-hosted database. Data is Collected as JSON and synchronized in real time to every connected client.

4.4 Interaction Design and UX

The most important part of User Experience design interaction design. An application success depends on User satisfaction. How an application is more interesting to a user is trust on interaction and Design part. In our application, we used a useful model of Interactive design. Android users contemplate your app to look and behave in a way that's

compatible with the platform. Not only should you follow element design guidelines for visual and navigation patterns, but you should also follow attribute guidelines for compatibility, performance, security, and more .Android provides a difference of pre-built UI components such as structured layout objects and UI controls that allow you to build the graphical user interface for your app. Android also bargain other UI modules for special interfaces such as dialogs, notifications, and menus.

4.5 Implementation Requirements

Implementation Requirement is given below:

- Android Studio
- Android Programming
- Java and Xml
- Firebase Real time database
- Firebase Authentication
- Firebase Storage

CHAPTER 05

IMPLEMENT & TESTING

5.1 Implementation of Database:

Implementation of a database is a difficult part of a project. Here in this project we used firebase real time database. Here data is saved as a No SQL pattern.

5.2 Implementation of Front End Design:

We implement our font-end design with some screen. The challenge was more when we design the screen of several users.

5.3 Implementation of E-Learn apps:



Figure 5.3: Home page

Modern learning methods and practices rely on technology. Child, students and parents use web and mobile apps to study, submit work and collaborate together. E-Learning platforms have made it possible for anyone with an offline or Smartphone to study anything, from anywhere in the Bangladesh.

We design and develop custom E-Learning solutions tailored to our needs, users and objectives [3]

Open Activity:



Figure 5.3: Select option

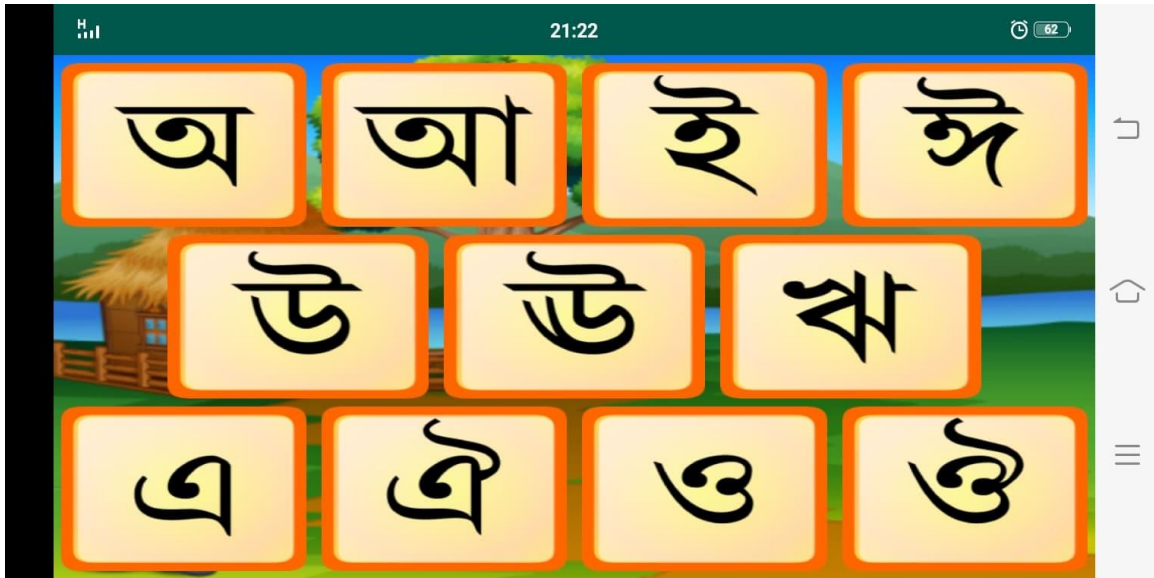


Figure: Read option

Draw Canvas Activity:



Figure 5.3: Read, Write and Draw Canvas

When child open an apps select the activity Bangle, English & Mathematics chose the activity he can read, write and listening. They can write and eliminate if wrong to recover their listening we also add the genuine pronunciation of the alphabets both English, Bangle & math.

5.4 Implementation of Interactions

Implementation of interaction is most responsible part of a system. Interaction means when we are in a specific function and go to another function that we want those time. We separate the function for a variant of a user. We design every user part very obligingly that user what he wants is indeed here. We design very carefully that the design attractive to users. An application sequence where a user is satisfied using the application. The Satisfaction level of our system is high.

5.5 Testing Implementation

When a system is implemented and tested some specific function is called test implementation. We have tested our system several times. Open apps, Read Alphabet, draw canvas, save file, View save file his draw file for the selected word save and delete a word, answering the question etc.

5.6 Test Result & Reports:

In order to improve the systems performance of all trials and integration, it is possible to complete each mistake by software means. We will be shown bellow screenshots of our systems test outcomes.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

For the grace of God, we have successfully completed our project and documentation. After the long-term of thinking, Discussion, Implementation we are in the last session and happy of completion. Parents are expectation her child well teach & good behavior. Our software given that natural education environment. We are try to give general knowledge and world affairs. Can learn any place because mobile phone is portable. Herewith are app children can learn to proper education, children can know how to write, save the image in internal store, children can learn correct alphabet pronunciation. We try to best the development in app.

6.2 Scope for Further Developments

We have a future plan for the application. Some of the planes are:

- Add Real time user interface
- We are try to using artificial intelligence in this app
- Add feature feedback system
- IOT system uses.

6.3 Significant Content

- Content Standards
- Significant Academic Relevance

APPENDIX

Appendix A: Project Reflection

This Appendix is intended to provide an introduction to the reflection of the project. It is a challenging and enjoyable experience for us. The purpose of this project is to allow how many children using the mobile wasting time in playing game in this app provide virtual educational environment. Every child want to new entertainment way. They are always find out new feature in the mobile or tablet. Therefore our application help both them (child and mother/father). Our app is a child learning tool. Everybody know up to 70% kid addicted Smartphone and tablet which belong in the city and near city. They are playing game, watching video & cartoon like tom & jerry, ban-tan, motu-patlu, meena. There for our app. There are can learn alphabet, word, dialogue. There are can be introduced with animal, flower, fish, country name, fruits etc. Hopefully our app given that every child good educational experience and environment. Hope our app are help all the parents.

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