

**INTERACTIVE LEARNING FOR CHILDREN**

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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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**DAFFODIL INTERNATIONAL UNIVERSITY**

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## APPROVAL

This Project/internship titled “**INTERACTIVE LEARNING FOR CHILDREN**”, submitted by Mostak Ahmed, ID No:151-15-5111,Md.Shahidur Rahman Shah,ID No:152-15-5768,Aklima Akter Shila,ID No:152-15-6138 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 3<sup>rd</sup> May,2019.

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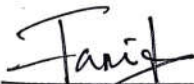


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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Abdus Sattar, Assistant Professor 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.

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

## **ABSTRACT**

Using electronic devices is not limited to adults or to specific time or place. They can easily access and enter to different kind of website. The platform is not specific to the children or adults. Children can easily know about the things which is not suitable for them. They use different types of mobile devices with no constrains. Guardians concern about the effect of the technical explosion on their children development. Controlling, monitoring, and managing approaches are needed to help in overcoming some of these worries.

This project gives insight in approaches to monitor and control children electronic devices. The project includes an overview of the related research efforts that allow children to get information in a different way. They feel bored by reading books and study material. Our main goal is to in the leisure time when they use mobile phone by our application they can get knowledge about their academic thing as like as Islamic things, the history of the war. By this it can helps to give up their monotony and achieved knowledge. The main challenge is to balance privacy and flexibility with the ease of use. The project also includes a website by which they can gain knowledge about which is appropriate for them.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

It is a new era of technology, everything is near to our hands guardians may worry about the effect of this very open world on their kids' development. They may worry about the detrimental effect of this technology on their educational, emotional and social developments. To help overcome some of these worries, guardians may need to have some controlling technology which is reliable to them.

Now a days children are using personal cell phone. As tablet devices, android phone are the most used technologies by children on our society. They only use this to play game and communication purpose. There are many content in the internet which is not educative but so harmful for the children. We know that bad thing can attract our child easily. To overcome this problem we need same quality content and application by which the children can learn something and pass their time. Monitoring and controlling by a guardian is not so easy. They cannot look after their child 24/7 hours. For this reason we need to do some innovative and interactive thing to build our child as a gentleman.

From our perspective we can see that internet is full off unsocial content .But the number of good thing is very little .Thus influence our child to addicted to unsocial work, pornography, and some other ruthless work.

We need to do something new which helps our child to learn the basic thing in a interesting way .It can remove their monotony and can keep distance from the unsocial site. Our main goal is leam the child about their academic study and some exceptional thing in a interactive way and keep them away from unsocial work.

## 1.2 Motivation

We can't control the internet using behavior of a child, More than 4.2 million pornographic website in the world and this is the number of 12% of all website. And search engine request of pornography more than 68 million per day which is 35% off all search engine request per day. Annually there are 72 million unique visitor. There are 100,000 website offer illegal child pornography. The average age at which a child seen porn is 11. But 70% of teens have accidentally stumbled across the pornographic website online. [2]

Different terrorist group now collect child solders by mistuning of social media and other media of online. Al Qaeda with its newly presented concept of "leaderless jihad". In this concept they motivated children at different region. And push them to attack. Now the point is children are easy target for motivating they don't question up like adult people. They don't demand salary like adult, they don't question up their order whether it's wrong or right. According to UNICEF report of 2013, in 25 countries thousands of children under the age of 16 have fought in wars. And 39% of them are used in car bombing. [1]

And different type of game addiction is a common problem nowadays so we have try to motivate the child to use their time in good way.

## 1.3 Objectives

Our main goal is to make an app by which a child learn their primary education. Like:

- To Know about English Alphabet.
- To know about Bangla Alphabet.
- Learning about Number system.
- Know the Month Name.
- Also about the Day Name.
- Different kinds of Animal Name.
- Different kinds of Flower name.

And other primary things which a parents always try to teach a child as a first lesson.

## **1.4 Expected Outcome**

Expected outcome given below:

1. Help a child to learn their first lesson.
2. Keep distance from unusual thing.
3. Generate useful time of childhood.
4. And protect the child from unusual disturbance of internet and technology.

## **1.5 Report Layout**

The project report contains six chapter and the summarization given below.

In chapter 1: Discussed about motivation, objects and expected outcome

In chapter 2: The background of our project with related work, the scope of problem and challenge of the system is discussed.

In chapter 3: Requirements details will be discussed.

In chapter 4: Contain design specification, front end design, back end design will be discussed

In chapter 5: We will discussed about Implementation and testing

In chapter 6: Conclusion and Future scope of our project is discussed

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

In this era of technology there is no lacking of bad content which is harmful for the children. In this perspective the number of quality contents is very rare .In this situation our target is to keep our child in proper track. Most of the time they spent their time by playing game.

We always try to serve a child very useful manner, so we research lot of application, try to find out the lack of other application, and where the children face problem. By researching them we build an app for our country children by which they can learn alphabet, and other primary education.

#### **2.2 Related Works**

##### **A. হাতে খড়ি (Bangla Alphabet):**

An application which is developed by the Bangladeshi developer, which actually help the kids to learn Bangla, English alphabet and numerical number easily.

##### **Positive Review:**

1. Somebody say the apps is very much helpful for the kids, they can learn easily by it.
2. Good initiative for the children of Bangladesh.

##### **Ratings:**

From the review and rating which is given by the user the apps rating is **4.6 out of 5**. Finally, from the review from the users we can say that the positive result is more the negative result, and educative for the children.

## Related images:



Figure 2.2.1 Hatekhori

## B. Foreign language for Children:

The app is interesting and useful for the children. The app contains more than thousands of word and thousands of number in 11 languages. All controls are very simple, just select the language and start learning. From this app children can learn a thing like a bird name in different languages.

## Positive Review:

1. The children can not only learn their mother language but also foreign language easily.
2. They can learn in their liking thing in their liking language.
3. It contains numbers, alphabet, nature, geography, sport, transport and colors etc. which are very much interesting.
4. Through it user can listen the pronunciation of the same thing in different languages.

## Ratings:

The app is given **4.2 out of 5** by the users.

## Related images:

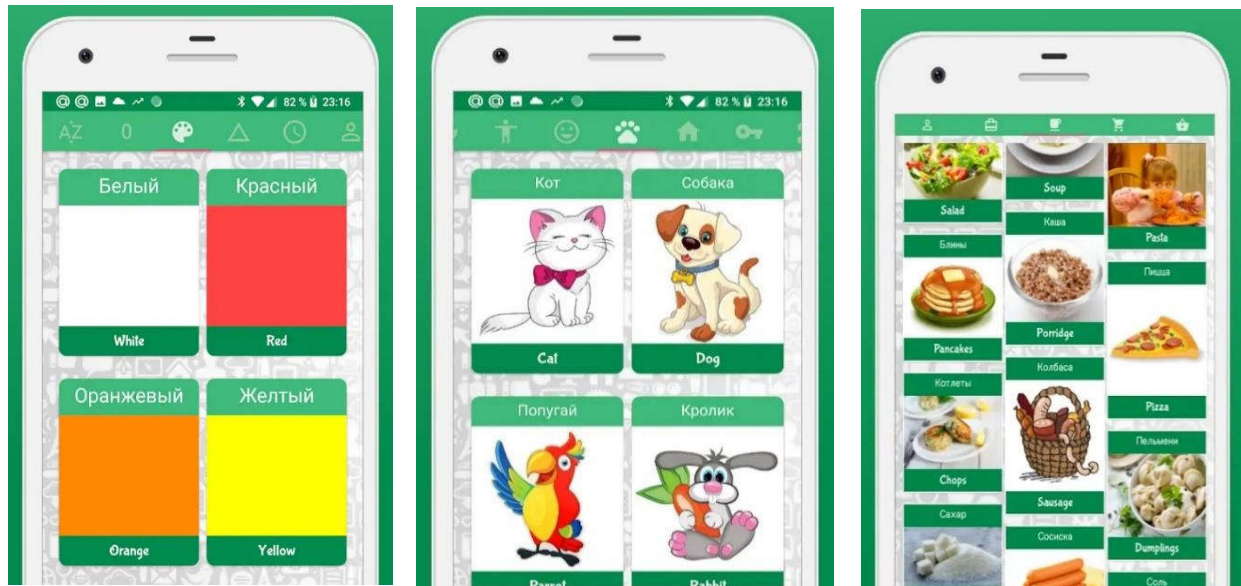


Figure 2.2.2 child app

### C. Human Body Parts-Preschool Kids learning:

From this app children can learn to identify body parts, organs and skeleton parts know where they are located .Learn how to spell and pronounce different human body parts with pictures and information about each part is a complete learning for kids.

#### Positive Review:

1. Children can easily know the body parts name with pictures.
2. It is helpful to learn the organ name without any complexity.
3. They can play game matching organ in human body.
4. Know the location of the organ where they situated in a human body etc.

#### Ratings:

The app is given 4.2 out of 5 by the users.

## Related Images:

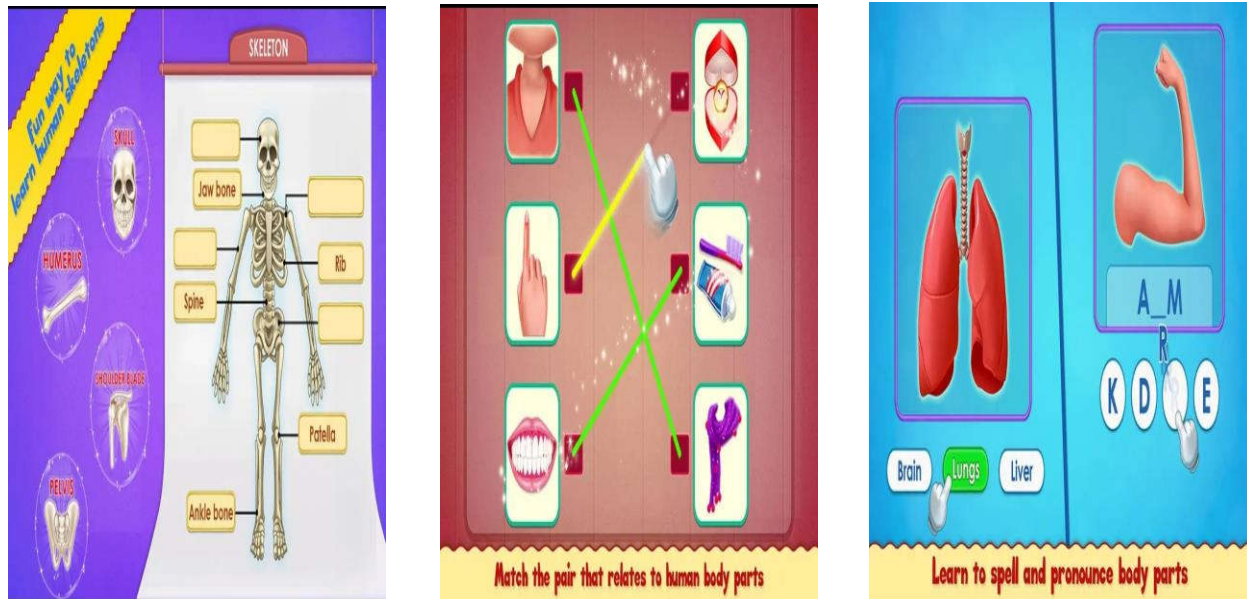


Figure 2.2.3 Human body apps

## 2.3 Comparative studies

We study some children usable app but these are not fulfill all requirement. Some are built for foreign children, all the contents are English version, some are missing sound effect. So here we try to fulfill all the necessity of children to learn their primary education.

## 2.4 Scope of the problem

It is totally developed for child primary education, and we face some problem while making this project and these are shown below:

### 2.4.1 A simple and lite application

here we face some problem when we design our graphical content it take a lot of space an the application much space , and it became heavy weighted, so we need to convert all the graphical file into lower size to keep the app lite.



### **2.4.2 Self learn method**

Firstly we build app with only graphical contents but we see that if parent doesn't stay with the children while they play the app, how they can learn. Then we have decide to include voice for almost every button. By this child can learn himself/herself.

### **2.4.3 Privacy**

This application mainly used by the child so we need keep in mind the privacy, because they can do anything without understanding. So that we don't asked for any permission in this application.

## **2.5 Challenges**

In every sphere of life there will some problem but we try our best to overcome the problem.

The challenges we faced in our project given below:

### **2.5.1 Problem finding**

Firstly we try to detect how the child interact with modern technology, then we did some research and find some statistics about the children interaction with the internet and technology.

### **2.5.2 User friendly and lite UI**

For user friendly UI we need to create simple and lite graphical content, lower size voice file. And try to do so.

### **2.5.3 Time management**

It is the most difficult part to maintain, as a student we always make some mistake in time management. At the end we try our best to cover our project in time.

## **CHAPTER 3**

### **REQUIREMENT SPECIFICATION**

#### **3.1 Requirement collection & Analysis**

Requirement collection is one of the most important part of building application. It can decide how we serve the user by the application, specific problem need specific requirement. So our application requirement given bellow:

1. Each user can use the app without any login and registration.
2. Voice collection for the child who can't read.
3. Simple User interface and avoid complexity.
4. UI should be design like child usable.

##### **3.1.1 Hardware and software requirement for System**

So simple user interface, very light application we made for every type user. There some requirements for this application:

1. Android Marshmallow
2. 1gb Ram
3. About 15mb memory space

No special permission needed for this application, because user of this application mainly a child, so for security purpose we don't ask any permission.

##### **3.1.2 Analysis**

We have enough confident to make this project suitable for child. We studied lot of site, lot of application we use to learn some concept to give better experience, gather knowledge to complete this project. We designed it in android because most of the smartphone user in Bangladesh are android users. And most of have budget friendly smartphone which doesn't have strong hardware configuration so we make this app very light.

### 3.2 Use case & Description

Use-case diagram manifest the action of a user with the application. This application can operate only with the user view. The diagram are given below:

Table 3.2 Use case of user

<b>Use case ID</b>	1
<b>Use Case Name</b>	User
<b>Description</b>	User can inter act with all kind of activities
<b>Pre- conditions</b>	No condition apply
<b>Standard flow</b>	1. Firstly appeared in the home page. 2. Visit any kind of activities according to their choice.

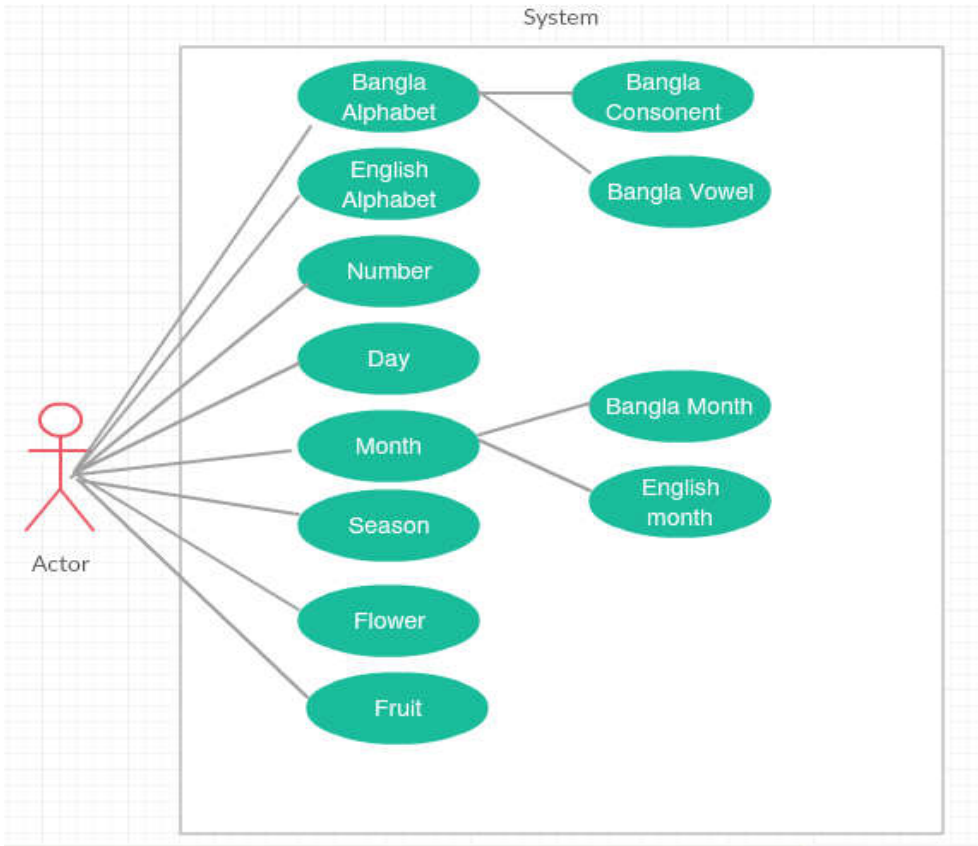


Figure 3.2.1 Use case of user

### 3.3 Activity Relation Diagram:

Activity relation diagram is the flow of activity its provide the relation between the activity , how one activity interact with other activity:

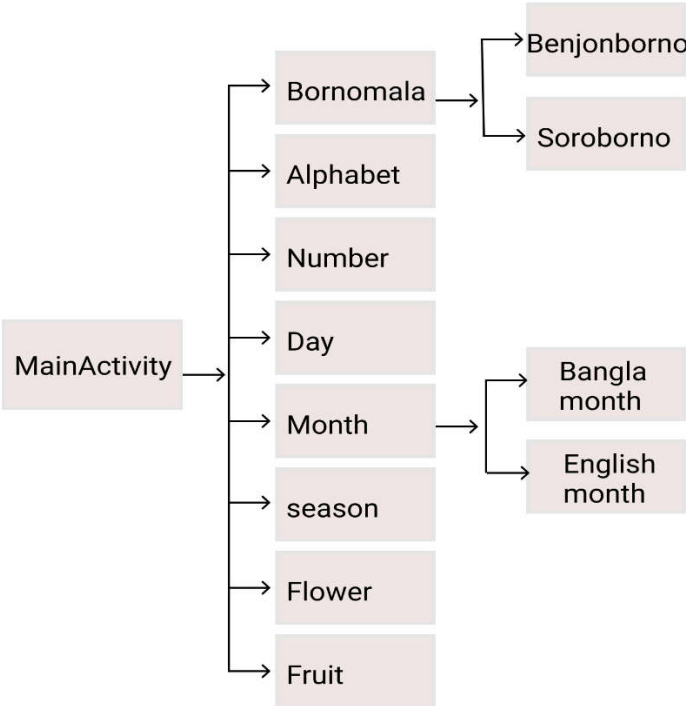


Figure 3.3 Activity Relation diagram

# CHAPTER 4

## DESIGN SPECIFICATION

### 4.1 Front-End Design

Front end design actually means the user interface design, design will play a important role in our application and remove complexity of user interface is our main target. User interface should be simple and easily understood by children, here we use figma , adobe Photoshop, xml for design user interface

#### 4.1.1 Figma

We use figma to design prototype of this application and lots of icon design in figma then export that icon into png, webp as requirement. How the app should be design, how it be so simple everything firstly tested in figma then we implemented it in android studio.

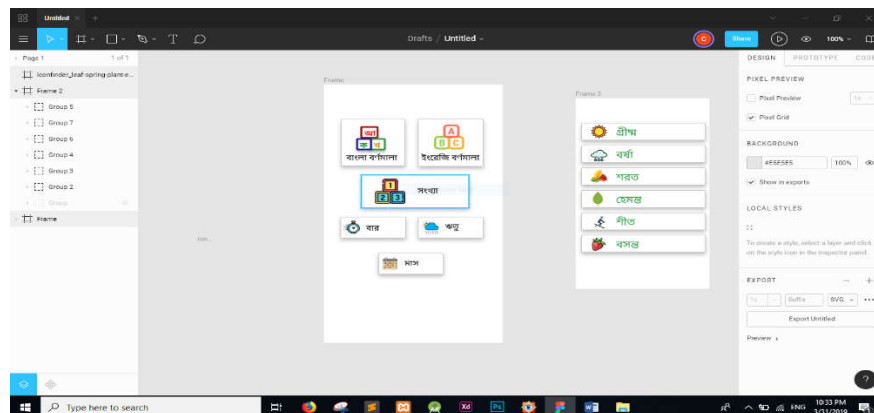


Figure 4.1.1 Figma

#### 4.1.2 Adobe Photoshop

We use adobe Photoshop to design all graphical content, we need lot of image to build this app, need lot of image on the basis of alphabet.

### 4.1.3 Xml

We use android studio to design and build this app and xml is the most important to design user interface, every activity design in this application contain xml.

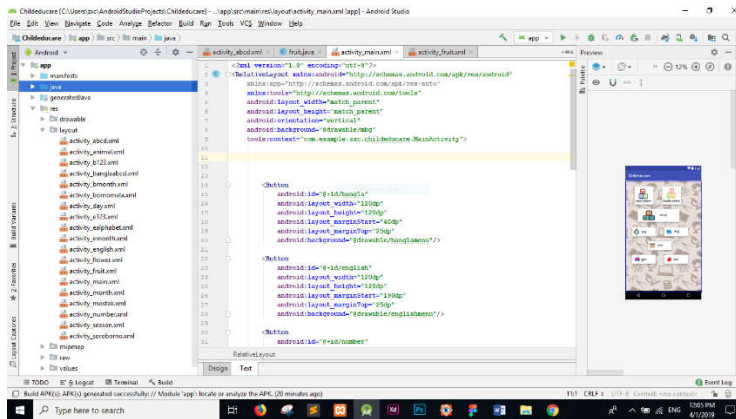


Figure 4.1.2 Xml

## 4.2 Back-End Design

Android application design by 2 language kotlin and java, but we have some knowledge about java more than kotlin so that we use java to develop this project. Java is mostly used and more popular to develop android application.

## 4.3 Interaction Design & UX

User interface mainly reference the design of the application but the UX interact differently with the user, it refer how comfort a user when use the application. So it's equally important for a application like user interface design.

## 4.4 Implementation Requirements

1. Java for logical operation
2. XML for design the childeducare app
3. Android Studio IDE for developing this
4. Android smartphone in debug mode

# CHAPTER 5

## IMPLEMENTATION & TESTING

### 5.1 Implementation of Database

We use lots of mp3,png,webp file and lots of layout so that proper management we need to store them as good way , in raw folder contain all the audio file, drawable folder contain different type of image, layout contain xml file.

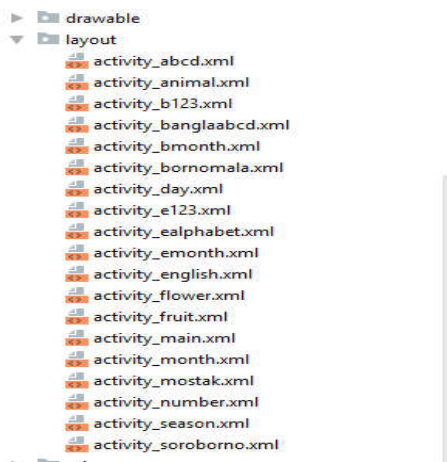


Figure 5.1.1: Layer

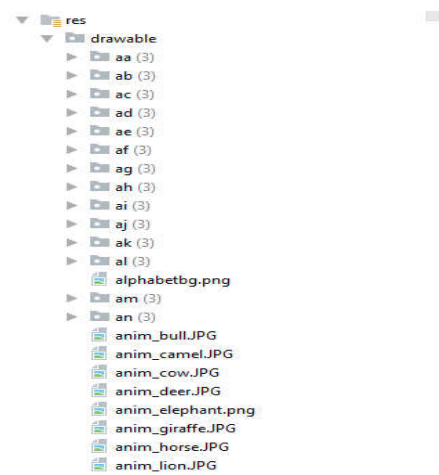


Figure 5.1.2: Drawable

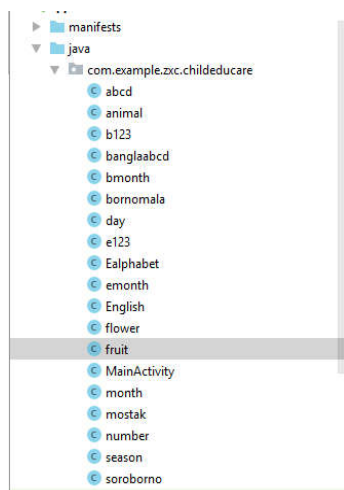


Figure 5.1.3: Java Activity

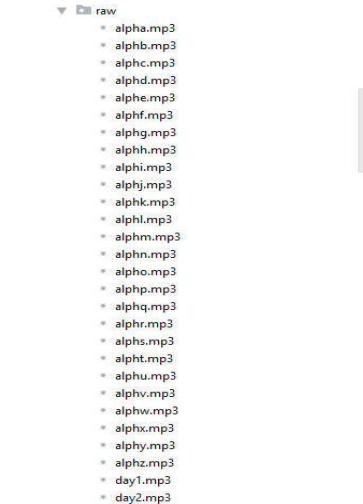


Figure 5.1.4: Raw File

## 5.2 Implementation of front end design

The implementation of the front end design are given below:

### 5.2.1 English Alphabet:

When the student click on the English alphabet button it will show a image with a word of that alphabet and a sound will appear.

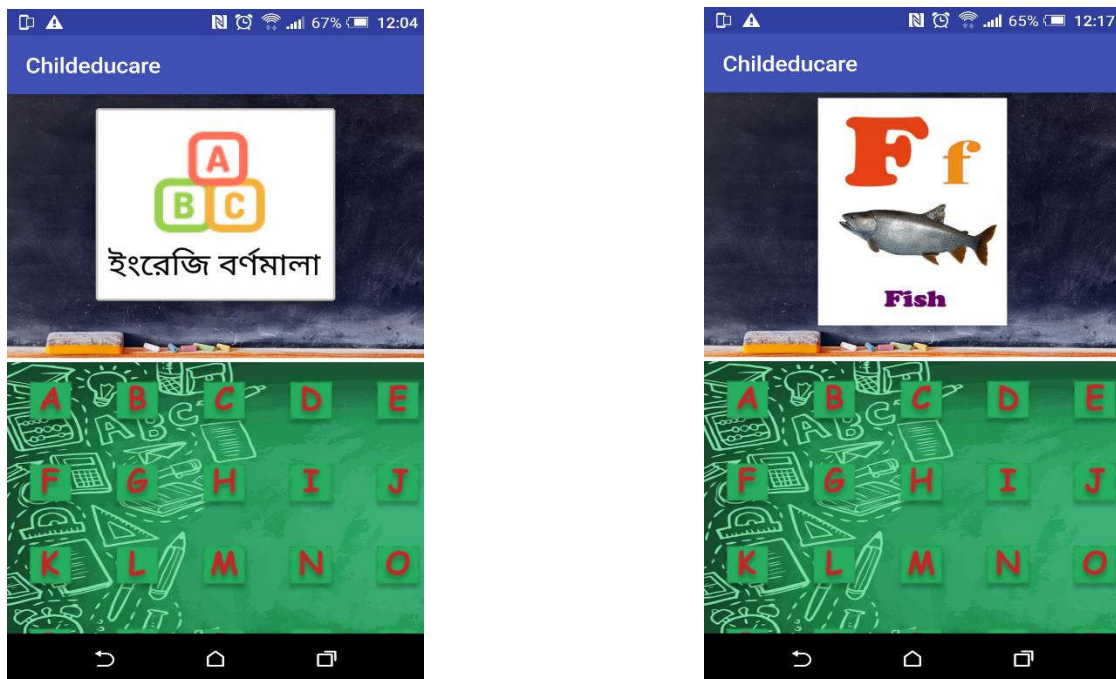


Figure 5.2.1 English Alphabet

### 5.2.2 Bengali Alphabet

When they click on the Bengali alphabet button it will do the same function as English alphabet. But here is one different section for Bengali vowel and consonant. Firstly a activity come which contain vowel and consonant menu, then by clicking a user can view that activity





Figure 5.2.2 Bengali vowel



Figure 5.2.3 Bengali Consonant

## **5.3 Tests Results and Reports**

We do same testing procedures for testing the entire application whether it works correctly or not. Some tests are given below to check that system is fully ready to run.

Every single activity check after develop, around 100+ testing since developing.

### **5.3.1 System Test**

Each and every activity has been checked whether it works correctly or not.

## CHAPTER 6

### CONCLUSION & FUTURE SCOPE

#### 6.1 Conclusion & Discussion:

In this application, our main focus is to give our children proper knowledge through internet.

This apps will ensure to free monotony, erase tension and hazard of parents.

It will also provide academic study with Arabic study and some other important things .When the children spend their leisure time into our app they can learn something and this is our goal. Hence, it will also achieve reliability of the parents.

This project is made for easy learning for the children. we hope this application can increase children concentration to study.

First of all we made a plan for making this project .We do our job according to our plan. And finally we are succeed to made this plan though we face some difficulties but we overcome all hinder to our work.

#### 6.2 Scope for further future work:

As though the project is fully completed there are some which can be added to this project. It feature can be increased by adding more features such as Islamic studies, poem, fairy tale, quiz system, word puzzle etc. By adding these feature our project will be more attractive to see and use.

We will make a website so that the children can easily know about the use and abuse of internet and technology. INTERNET is full of unsocial content, there are mane site which are harmful fora human being such as we can see that there are many porn website but there is no anti-porn website. For this we will make a website which gives information about merits and demerits of internet and there will be some useful content also.

## **APPENDIX**

### **APPENDIX A: Project Reflection**

The goal of appendix is to give an introduction to the reflection of the project. We have learned a lot while doing the project. It has been wonderful journey with Android development. Without co-operation of each other's we cannot make this project,

We shared our ideas and work together to overcome the difficulties.

## References:

- [1] Anita Persian, “Al-Qaeda Online Radicalization and The Creation of Children Terrorists”
- [2] Visited date, December, 2018 <http://www.techaddiction.ca/files/porn-addiction-statistics.jpg>
- [3] Visited date, March, 2019 <https://creatly.com/>
- [4] Visited date, December, 2018 [www.play.google.com](http://www.play.google.com)
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- [6] Visited date, March, 2019 <http://flatcon.com>
- [7] Visited date, March, 2019 <http://shutterstock.com>

# INTERACTIVE LEARNING FOR CHILDREN

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