

ANDROID BASED EDUCATIONAL APP FOR EASY LEARNING

BY

SYDUS NAYEEM PATHAN

ID: 153-15-6568

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

Supervised By

Ms. Samia Nawshin

Lecturer

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

DECEMBER 2019

APPROVAL

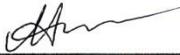
This Project/internship titled “**Android based educational app for easy learning**”, submitted by Sydus Nayeem Pathan, ID No: **153-15-6568** to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the 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 Saturday 07 December 2019.

BOARD OF EXAMINERS



Dr. Syed Akhter Hossain
Professor and Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Chairman



Nazmun Nessa Moon
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Gazi Zahirul Islam
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



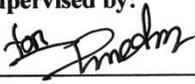
Dr. Mohammad Shorif Uddin
Professor
Department of Computer Science and Engineering
Jahangirnagar University

External Examiner

DECLARATION

I hereby declare that, this project has been done by us under the supervision of **Ms. Samia Nawshin, 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:



Ms. Samia Nawshin
Lecturer
Department of CSE
Daffodil International University

Submitted by:



Sydus Nayeem Pathan
ID: 153-15-6568
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First i express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.

We really grateful and wish our profound our indebtedness to **Ms. Samia Nawshin, Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Android app development*” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Prof. Dr. Syed Akhter Hossain, Head**, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

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

ABSTRACT

This report is based on the description of my project – “Android based educational app for easy learning”, These Android apps will be useful for those teachers and school students and it will give more use to those who are new learning children. With these apps, young children can learn early in the game. When a College and University student teach a school student that time they need to self-study then they need to a book but they have no ability to buying book so if they are using this app it's has a book all pdf. Now modern world are children also modern they always busy to mobile device so I can try to solve this problem because this apps have an option for kids they are study in a playing system and this app has an option we upload in our important pdf file easily.

TABLE OF CONTENTS

CONTENTS	PAGE NO
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
CHAPTER	
CHAPTER 1: INTRODUCTION	1-3
1.1 Introduction	1
1.2 Motivatio	1
1.3 Objectives	1
1.4 Expected Outcome	2
1.5 Report Layout	2
CHAPTER 2: BACKGROUND	4-5
2.1 Introduction	4
2.2 Related Works	4
2.3 Comparative Studies	4
2.4 Scope of Problems	4
2.5 Challenges	5
CHAPTER 3: REQUIRMENT SPECIFICATION	6-9
3.1. Business Process Modeling (App)	6
3.2 Requirement Collection and Analysis	6
3.3 Design Requirements	7
3.4 Use Case Modeling and Description	8
CHAPTER 4: DESIGN SPECIFICATION	10-15
4.1 Front-end Design (App)	10
4.2 Back-end Design	13
4.3 Implementation Requirements	14

CHAPTER 5: IMPLEMENTATION AND TESTING	16-20
5.1 Implementation of Database	16
5.2 Implementation of Front-end Design	17
5.3 Implementation of Interaction	18
5.4 Testing Implementation	19
5.5 Test Results and Reports	19
CHAPTER 6: CONCLUSION AND FUTURE SCOPE	21
6.1 Discussion and Conclusion	21
6.2 Scope for Future Development	21
APPENDICES	22
APPENDICES A: Project Reflection	22
REFERENCE	23

LIST OF FIGURES

FIGURES	PAGE NO
Figure 3.1: Business Process Modeling (App)	6
Figure 3.2: Use Case Diagram	8
Figure 4.1: Front Page	10
Figure 4.2: User Children	11
Figure 4.3: School class 1-10 all basic subject pdf	11
Figure 4.4: Upload PDF	12
Figure 4.5: View Upload PDF	12
Figure 4.6: Contact & about Project	13
Figure 4.7: Back- end overview	14
Figure 5.1: ER Diagram	16
Figure 5.2: User Front Page	17
Figure 5.3: View upload PDF file	18
Figure 5.4: Upload new PDF file	19

LIST OF TABLES

TABLES	PAGE NO
Table 3.1: Use case description of Learning for kids	8
Table 3.2: Use case description of Case Get all types of textbook	9
Table 3.3: Use case description of Case Upload books	9
Table 3.4: Use case description of Case View all book	9
Table 3.5: Use case description of Case Hear sounds of letters	9
Table 5.1: Test Results and Reports	20

CHAPTER 1

INTRODUCTION

1.1 Introduction

Now this is modern world & modern life. Now in modern life everyone can work very easily. Now many modern technologies have come out. So now people are busy in modern technologies, that's why I tried How to apply modern technologies in education. These Android apps will be useful for those teachers and school students and it will give more use to those who are new learning children. Here young children will be able to easily study. We can keep it here if we want our urgent files. Here are all the Basic Subject books from Class One to Ten. And these apps are suitable for everyone to use. Now this is modern world & modern life. The PDF documents, which in some cases could be highly confidential, are uploaded to a third party server [1].

1.2 Motivation

Bangladesh is modernizing with other countries a digital listing of everything is being done for the convenience of all. So my little effort to do something for the country. In fact, my idea came when i was the only student I needed some books but then I was not in a position to buy them and now it is seen that the students carry a lot of heavy books. Many times we do not find many of our required files. Then I thought it could be solved. So I have tried to solve all the problems I have with this project. It is seen that many have tried to solve the tasks but could not do it together.

1.3 Objectives

My goal is to get all the benefits of education together. Making the educational system easier than difficult. So that young children can learn through mobile apps. Anyone can upload their important pdf here and find it much easier later. In the future, these apps can be improved by modifying them and it will benefit many people in Bangladesh. An educational system can be made much easier. . Mobile learning is the next generation of

e-learning that serve attractive way of knowledge distribution especially used in teaching and learning process [2].

1.4 Expected Outcome

- Simplifying the educational system will play a big role
- Raise the attention of children's education
- Digitize education system
- Helps reduce internet costs
- Helps reduce time costs

1.5 Report Layout

I narrated my whole project step by step through 6 chapters.

Chapter 01: Introduction

The first chapter is about an overview of the project. All the discussions like introduction, motivation, objectives, expected outcomes go under this chapter.

Chapter 02: Background

This project related works, the scope of problems, challenges, comparative studies are being discussed in the Background chapter.

Chapter 03: Requirement Specification

Here is the technical narration such as requirement collection, analysis, business process model, use-case modeling and other technical task has been explained in the requirement specification section.

Chapter 04: Design Specification

The user platform of the project user interface design, front-end design, back-end design, and requirements for implementation are being discussed.

Chapter 05: Implementation and Testing

I have a brief discussion on the implementation of front-end design, implementation of interaction, testing implementation, database, network selection, and the results.

Chapter 06: Conclusion & Future Scope

As a result, the conclusion of the project and the scope for future improvement and feedback is the topic of discussion in this section.

CHAPTER 2

BACKGROUND

2.1 Introduction

I have developed a system that will help students and teachers easily. For example, inside it have a file creation option that allows us to open a new folder and upload our files there and then we can view the files. If anyone has trouble running this system, he can contact me later. Kids will learn English alphabet with the help of sound system entertainment. Here you can read PDFs of books from class 1 to 10 without downloading them.

2.2 Related Works

Related work on this topic very few had done before. PDF merging is currently active system related to this project [2]. The system is not fully operational in Bangladesh. Easy educational system process [3]. There was some similarity in voice processing system [4]. Other project have some point with same with me like alphabet talking sound some have a book pdf only.

2.3 Comparative Studies

I am research about some other project similar to me And I am find some resource. Some resemblance to my system was with some educational research projects. Basic learning for English alphabet for Children. Using Touchscreen Learning App for Children [5]. Other project have no any alphabet with sound & image any photo with this alphabet related , but my project it is have this & I have add with a spelling. & I have used in hear a Bangladesh school all class 1 to 10 PDF book its only have this project only, but other project have not this tips of thinks. But they are used you tube video tutor but this is not same with Bangladesh educational related, but my project is related with Bangladesh education.

2.4 Scope of Problems

- It works well in the latest version of Android

©Daffodil International University

- The size of Android is huge, which is 500mb
- No exams system in this app
- The PDF can be viewed without the updated version
- Solo works because the app is large
- There is no system to use the Internet

2.5 Challenges

Behind the developing our system, the main challenge was to identify problems of the current system. I had to research a lot more to make the system . How do I develop a system User convenience. How users use these apps and how the design will look there was a lot to worry about.

I have to learn voice editing work here. Matching my voice Image with the icon Image.

I've got to learn how Firebase works here [7]. Creating a new file and uploading a PDF to use my android-studio firebase for this purpose [6]. Some apps have to match in this project.

Technically there are challenges too. I have developed a system where a book and mobile app will perform together. Class 1 to 10 all basic subject books find out PDFs from.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling (App)

This model shows the process of the application all about the interaction with system and the flow of the model. This is the visual understanding model of the application.

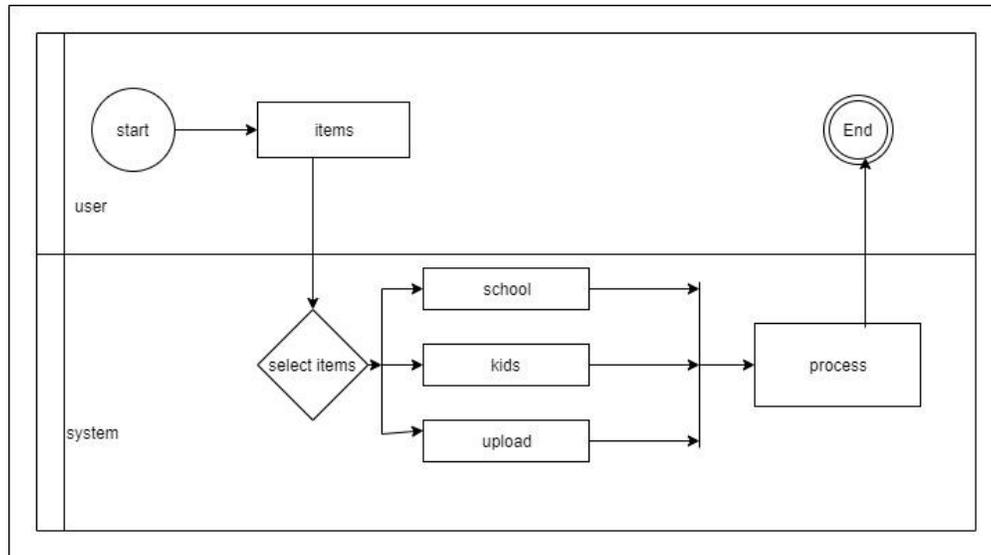


Figure 3.1: Business Process Modeling (App)

The application is only for user's to interact with system. The user can see his options here and by selecting that option he can determine his work. It can upload any new books you want there, the kids can use the options, he will be able to read books from Class One to Ten, he will be able to read newly uploaded books if he wants. Then he can move from one option to another option.

3.2 Requirement Collection and Analysis

The requirement of the system is most important part in order to understand its development process and the prerequisites. My system is involved with a major platform for android App. So, there are some relative and partial relative tools are being used in this system. I have completed a demo project that is less expensive & demandable

relative to implementation. The original implemented project will consume more data and need a huge server and manpower. The requirements are given below.

- It does not require a Google ID to access this system
- Here the user can store his emergency files
- User can query for case date mobile app too

Tools Requirement in development:

- Net Server
- Android Studio IDE for application
- Firebase Database
- Android Device for testing
- Voice Editor
- Icon.

3.3 Design Requirements

When designing a system, the requirements are must be in focus to achieve the goal. Our system is involved in app. The design requirements are given below.

- Accessibility in the system
- Recoverability of the system
- Serviceability of app
- Availability of real-time data from server
- Security of server
- Usability of the application
- Portability of application
- App Service of the system
- Changeability of its version

- Inter-communicable

3.4 Use Case Modeling and Description

A Use Case is a discrete unit of user (human or machine) interaction with the system. Use Cases are typically 'actors ' related. An actor is a human or machine entity to perform meaningful work interacting with the system. In Figure 3.2, Use Case Model

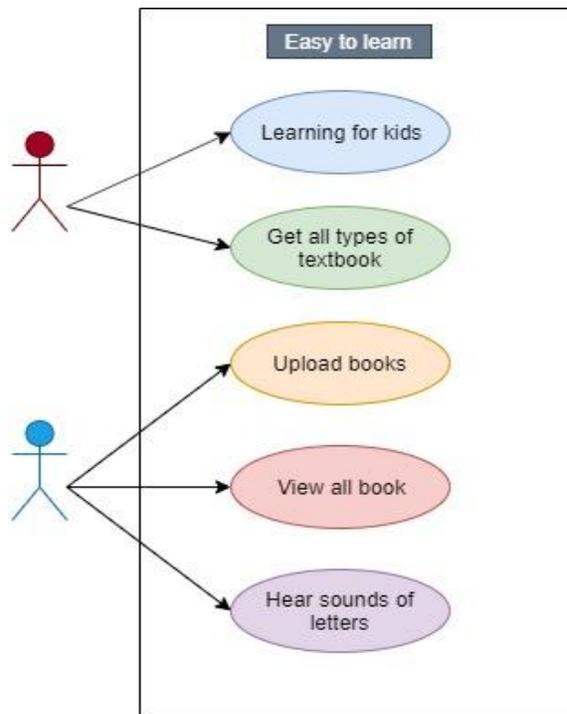


Figure 3.2: Use Case Diagram

Use Case Description

Table 3.1: Use case description of Learning for kids

Use Case :01	Learning for kids
Primary Actor	Admin
Post-Condition	Show Home Page

Table 3.2: Use case description of Case Get all types of textbook

Use Case :02	Get all types of textbook
Primary Actor	Admin
Post-Condition	Show Home Page

Table 3.3: Use case description of Case Upload books

Use Case :03	Upload book
Primary Actor	User
Pre-Condition	Upload book
post-Condition	Show view book

Table 3.4: Use case description of Case View all book

Use Case :04	View all book
Primary Actor	User
post-Condition	Show view book

Table 3.5: Use case description of Case Hear sounds of letters

Use Case :05	Hear sounds of letters
Primary Actor	User
post-Condition	Show view sounds

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design (app)

I have tried to make it look simple and easy to use. On this goal, I specified the crystal clear front-end design. Here in figure 4.1 has shown a demo of front page.

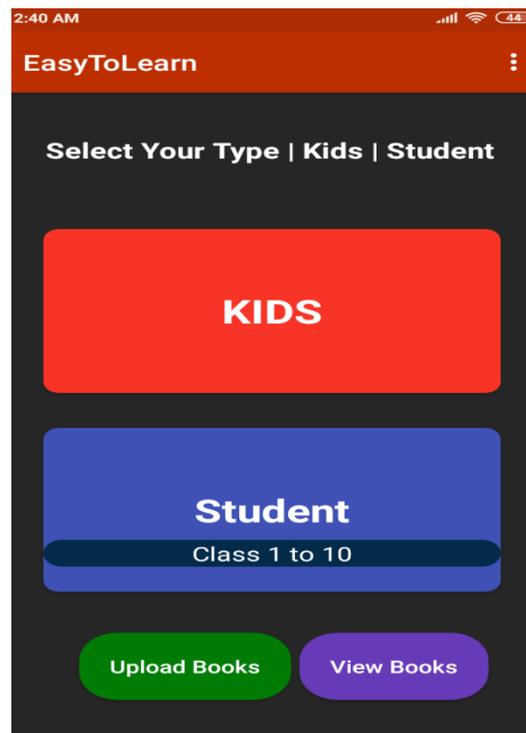


Figure 4.1: Front Page

Front page shows the simple user interface for users. Here are some options that the easily can access. If desired, he can upload a new book by clicking upload book and clicked on the view book to see it later. My work requires firebase and Android Studio java & Voice editing.



Figure 4.2: User Children

Here are all English alphabet and some images with it. After clicking on these pictures, you will specify the name of the picture with the name of the alphabet as well as the name of the picture. Children can easily identify and study alphabet.

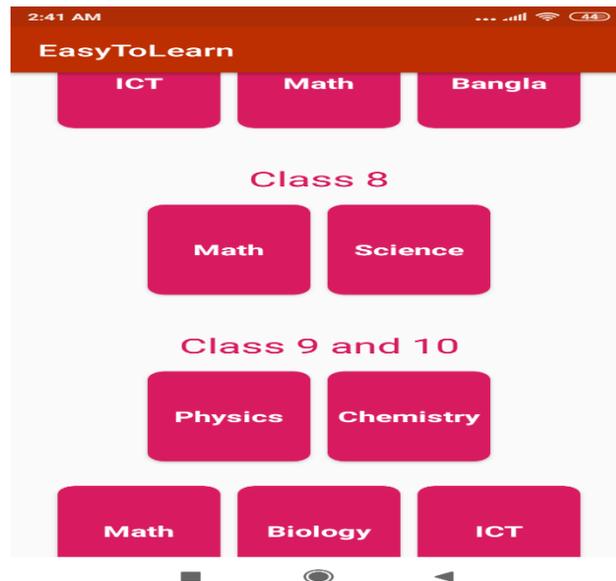


Figure 4.3: School class 1-10 all basic subject pdf

Here are all the PDF books from Class One to Class Ten. This will benefit the students and teachers so they can easily read the books. One click PDF will be open without download.

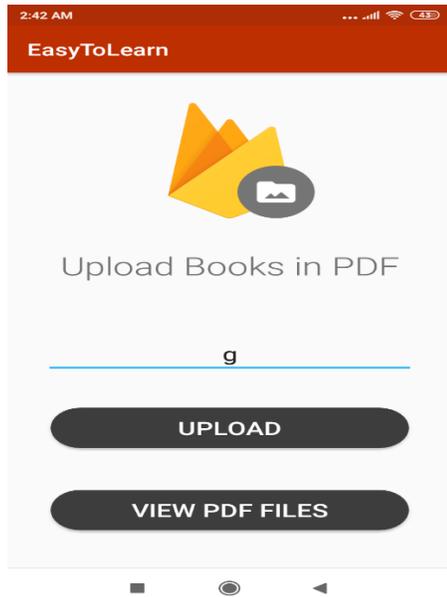


Figure 4.4: Upload PDF

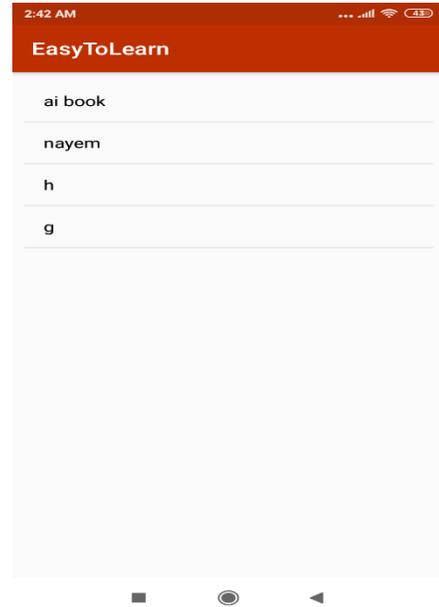


Figure 4.5: View Upload PDF

Here you can upload a book with a new folder with a new name. Here he can see his upload book



Figure 4.6: Contact & about Project

You can find out about the project here and then you can contact the developer if there is any problem.

4.2 Back-End Design

The languages are used in android development is java. The language is a simple, general purpose and most importantly object-oriented programming language. Another object-oriented language JAVA has been used to develop the android application.

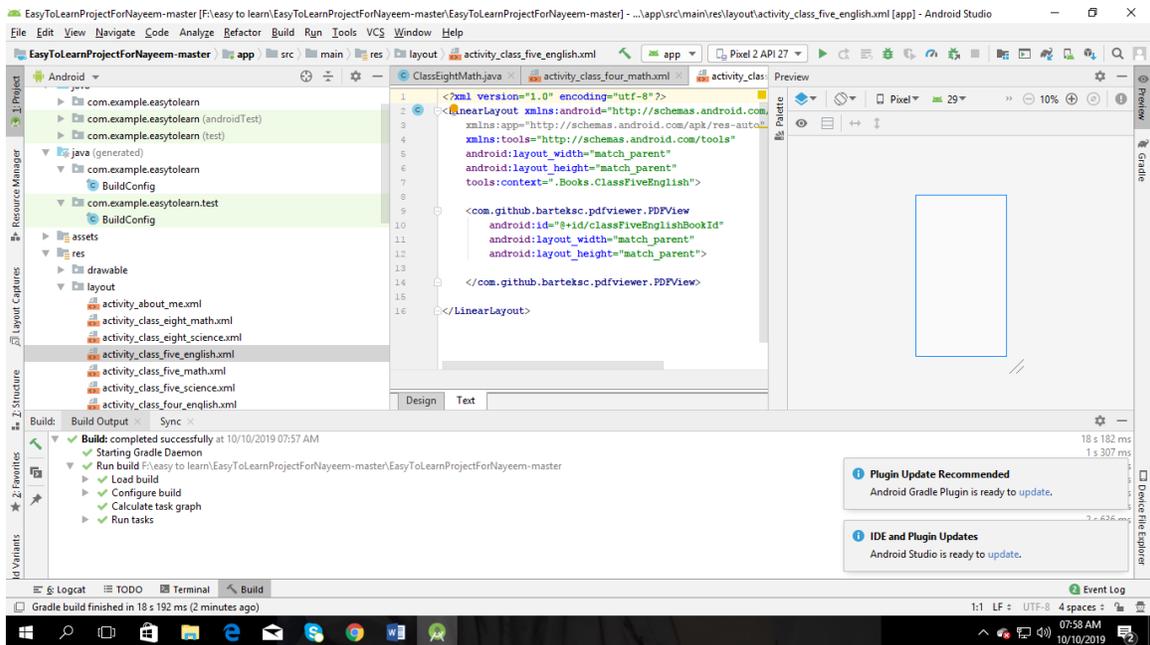


Figure 4.7: Back- end overview
(Android Studio framework)

In the back-end, I kept books inside class 1-10. My voice and icons.xml have been kept. All pages are connected with the first page for the convenience of the user. After uploading the new files, they have been neatly arranged & so that they can be seen later they are arranged in rows. Icon and voice are connected to the Alphabet button.

4.3 Implementation Requirements

Hardware Requirements

- RAM (8GB minimum)
- Processor core i3 1.7GHz
- Hard Disk (relative to data consumed, 50GB minimum recommended) □
- Dedicated GPU (recommended)

For Android Application

- Android Supported device
- Android Studio for Android App

- Android Virtual Device
- XML, Java Language
- Server access API
- Adobe Photoshop
- Voice Editor

CHAPTER 5 IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Database is the digital source where data are being arranged. It is capable of manipulation of data. In my project i have used firebase database to store upload book pdf. The same database has been used for mobile application. We have designed the database in such a way that User cannot manipulate the data, they can only view. Only Court authorized admin can edit and manipulate data in database.

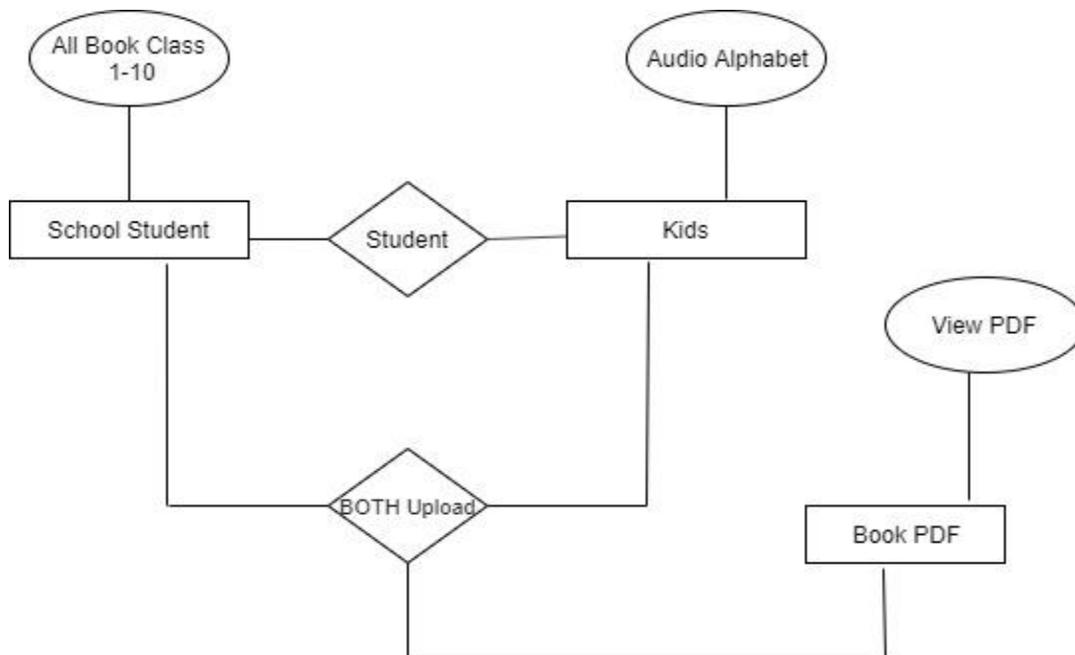


Figure 5.1: ER Diagram

Entity Relation diagram show's a graphical overview of the database design. Here we can see one to many, many to one and all other relation and attributes of entity. The database works through the map in this system.

5.2 Implementation of Front-end Design

Aiming a simple and good front view, we have designed the front part as user friendly. All the possible complex design has been avoided to get a crystal clear front view for application.

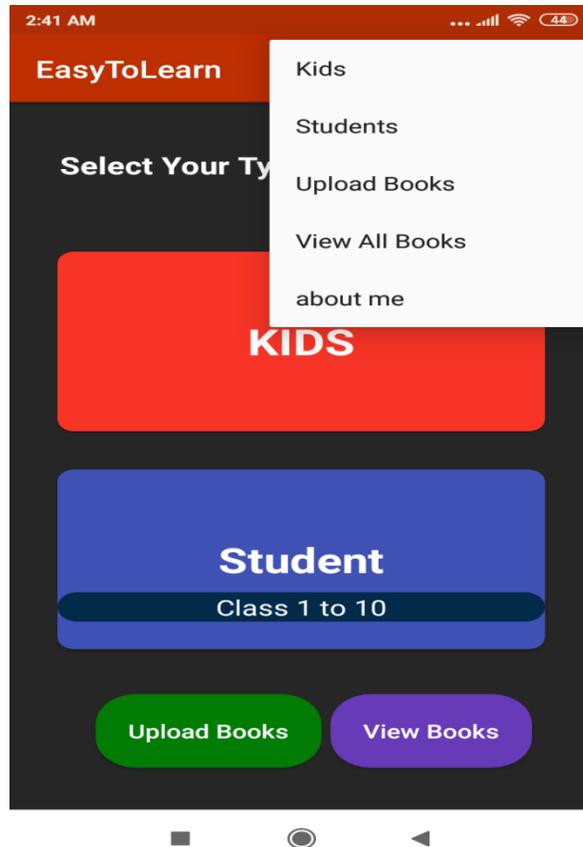


Figure 5.2: User Front Page

I have utilized the accompanying apparatus for actualizing the front-end design for mobile application. The user friendly interface has been considered to design the front-end. As well as for android application we have used XML, Java language on Android Studio. The application a simple and easy to use UI containing dual fragment as shown in Figure: 4.1. The app has not been designed for admin panel, instead it will work for users on a single interface.

5.3 Implementation of Interactions

Here the user can easily upload a PDF and later he can open it easily. Here PDFs can be sorted in different file names there. There will be many benefits to finding them later. He will save his time. There will be no problem finding the files later.

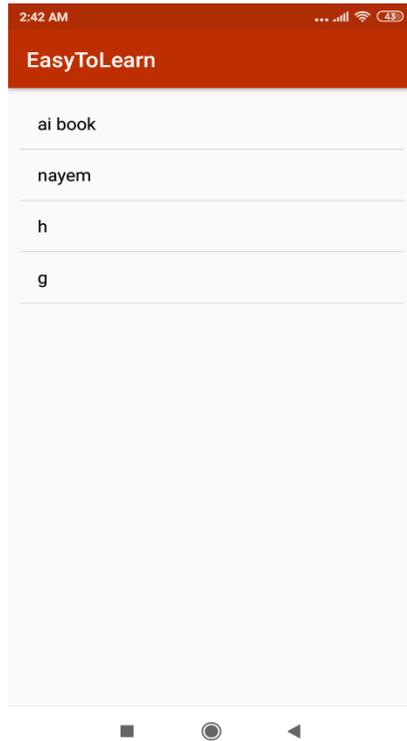


Figure 5.3: View upload PDF file

5.4 Testing Implementation

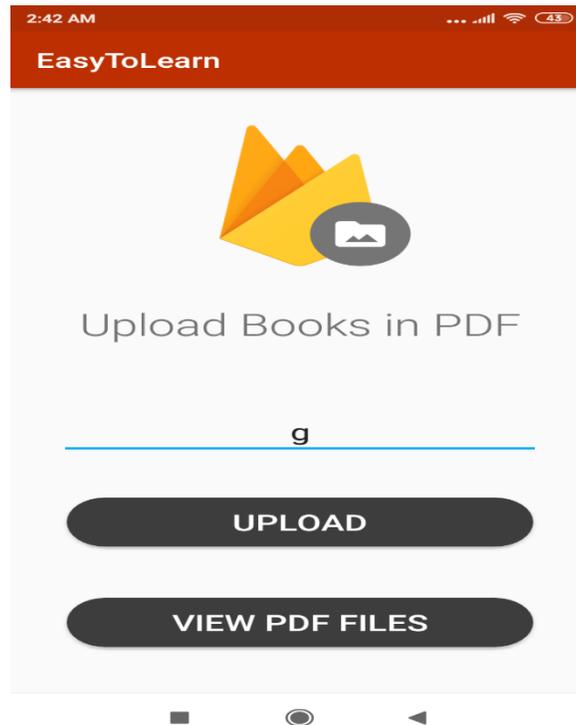


Figure 5.4: Upload new PDF file

Here you will first want a file's name & Clicking on the upload folder will go to its storage then Upload the PDF file of your choice. This is how to upload a PDF here Process.

5.5 Test Results and Reports

Test table consists of conditions. Following the conditions it will determine whether the system meets its goal or not. It is a helping hand to identify issues and problems of the system. Here we have test table report on Easy to learn for Educational Android Apps.

Table 5.1: Test Results and Reports

Number	Test Case	Test Input	Expected Outcome	Actual Outcome	Result
1	Display the front user Query page	Android application	Display the page successfully	Displayed successfully	Passed
2	User	Check school book	Display the page successfully	Displayed successfully	Passed
3	Another User	Kids options	Display the page successfully	Registration successful	Passed
4	User add pdf	Upload Book PDF	Pdf Added	Display the page successfully	Passed
5	View pdf	View pdf	Display the page successfully	Displayed successfully	Passed
6	User see admin	Check admin	Successfully see admin	Created successfully	Passed

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

Education system is very difficult in Bangladesh compared to other countries. With my system I am trying to minimize the difficulty. School teachers and students can easily find their main books here. Kids will be able to learn English alphabet very easily and you can learn a lot more here. Then we can upload any new books we want any time. If user have any problems with running apps user can contact with developer. There are some more future thoughts that will be added later.

6.2 Scope for Future Development

Something new will be added to Future and they will benefit many of our students in Bangladesh and benefit the teachers. Here are some of the new systems that will be online and they will be of great benefit to the education system. In Future Online Exam will be keeping some more scientific books related to science. Some videos of educational will be kept in the school student's area. The system will be put in place to subtract the birth of young children & by doing this, they will learn about some flowers and birds. Firebase real-time time database will be added in future in order to increase efficiency [10]. Will be associated with online classrooms for school students & teacher. They will all benefit. We will have IOS application for apple device near future. This will modernize Bangladesh's education system.

APPENDICES

APPENDICES A: Project Reflection

In my project, efforts have been made to modernize Bangladesh's education system. I have learned many things from practical experience. I had huge learning about app development with some of the required programming such as java & Voice editing, photo editing. I were constantly developing and refining one another's ideas to gain better effective performance. I realize the importance of valid information to the people and tried to implement our knowledge in the project. I have learned more about java. I have understood current systems lagging and people demand, gain my new idea and tried to implement it. I believe that it will be very helpful for all those people who need easy educational system. My system will help people to interact with educational system.

REFERENCE

- [1] Neha Sharma, Priyanka Singh and Pradeep K. Atrey,” SecureCMerge: Secure PDF Merging Over Untrusted Servers”, IEEE Conference on Multimedia Information Processing and Retrieval, 201
- [2] Rakesh Sangadikar and Monika Kokate,” Recent Trends in Android Application for Academic Tracking”, Proceedings of the 2nd International Conference on Communication and Electronics Systems (ICCES 2017).
- [3] M. Sharmila Begum, P. Aruna and Dr. N. Vetrivelan,” STEP - A Career Zone Android APP for Higher Secondary Education”, IEEE Xplore: 24 October 2016.
- [4] Shilpi Taneja,” Mobile Applications in Educational Institutions”, IEEE International Conference on Computational Intelligence & Communication Technology, 2015
- [5] Nishith A. Kotak and Anil K. Roy,” An Accelerometer Based Handwriting Recognition of English Alphabets Using Basic Strokes”, IEEE Region 10 Conference (TENCON), Malaysia, November 5-8, 2017.
- [6] Park Byoungchul Kim, Kyeonghwan, Seong-Je Cho, And Minkyu,” RomaDroid: A Robust and Efficient Technique for Detecting Android App Clones Using a Tree Structure and Components of EachApp’s Manifest File”, IEEE current version June 13, 2019.
- [7] Firebase real-time time database | Documentation Available at:
<<https://firebase.google.com/docs/database/?gclid=Cj0KCQjwhJrqBRDZARIsALhp1WRvYQ7NNNo527zEQZkJc3e44EAeZ0UwQnLbp5_OMw7wOmCnBhN9J9GYaAvTWEALw_wcB>>, last accessed on 10-10-2019 at 11:00 pm.

Android based educational apps for learning

ORIGINALITY REPORT

7%

SIMILARITY INDEX

3%

INTERNET SOURCES

1%

PUBLICATIONS

6%

STUDENT PAPERS

PRIMARY SOURCES

Submitted to Daffodil International University

1

Student Paper

3%

2

dspace.daffodilvarsity.edu.bd:8080

Internet Source

1%

Rakesh Sangadikar, Nikesh Aote, Monika Kokate, Shreya Patil, Ashwin Waghmare. "Recent trends in Android Application for Academic Tracking", 2017 2nd International

3

Conference on Communication and
Electronics
Systems (ICCES), 2017

Publication

4

Neha Sharma, Priyanka Singh, Pradeep K. **1**%

Atrey. "SecureCMerge: Secure PDF
Merging over Untrusted Servers",
2018 IEEE Conference on
Multimedia Information Processing
and
Retrieval (MIPR), 2018

Publication

5

Submitted to CollegeAmerica Services, Inc.

Student Paper

<1%

Submitted to Midlands State University

6

Student Paper

<1%