

Development of Android Based Application: BOOK SHARING

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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

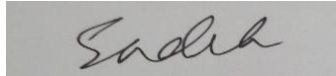
This Project titled “**Book Sharing– an android based mobile application**”, submitted by Md. Mostafizur Rahman ID: 162-15-8001, Ali Zahan Pranto ID: 162-15-8066 and Md. Ariful Araphin ID: 162-15-7943 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents.

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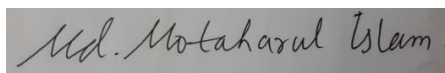
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We hereby declare that, this project has been done by us under the supervision of Md. **Jueal Mia**, **Senior Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has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

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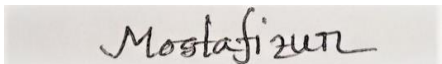


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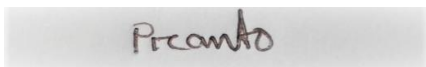


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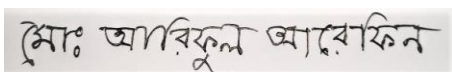


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ABSTRACT

When it comes to basic rights education is one of the most important one. Education is necessary regardless of where you born or where you grew up. In this era, when communication is developing rapidly, it is high time to ensure that education reaches to everyone's doorstep. There is a saying knowledge increase by sharing but not by saving. And to share knowledge book is the best thing to share. But sharing a book is not always convenient and sometimes annoying too as many of those people never return those books. This paper presents an online platform for sharing knowledge. More specifically to share and rent books and a platform to discuss books. The aim of the proposed model is to reduce the problem of sharing book and also to build a community of book readers. This system is a platform for anyone who has a book and is not using it right now and would like to share the books with someone who currently needs it. In this developing country buying books is costly and as people normally keep the book idle after reading. So, it is better to share or sell the book to someone who may need it. So, the main theme is, 'maximum use of the book, minimum use of money'. The proposed model uses the basis of regular social transactions and comprises them into a business model. It mainly focuses on the customer to the customer business model and creates a patronizing and adjuvant platform for both the user and providers. It depicts the challenges related to starting a new platform, identifying the right people, creating and interacting with people and developing a business model in a developing country. The proposed model is deployed on an android app by which the user will find each other. Some key features are unique login system, wallet system, my desk, location of a user, interactive chatting between users.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Students go through a very busy time every year to find textbooks we need for a semester. These books are very important for a student. There are few books that are very hard to find & there are few that are too expensive [1]. Many of us borrow those books from libraries, seniors and buy used books within outreach. This can get very hard sometimes. Many times we don't get what we need. As there are few libraries now a days & books are limited there is always shortage of books. Students need to wait for a time & we all know in student life time plays a very important role. The existing system of sharing or renting books is very outdated. This process is offline & if we want to use social media for this use it can't provide according to expectation. Social media is not designed for this task. So we can say there is no such platform for finding our desired book. As it is the era of internet, online shopping is very popular & helpful for people [2]. Online shopping is expensive due to extra fees. New books are not always cheap & sometimes we only need it for a little time. So collecting old books are the best option. As there is no such platform for book sharing, we proposed this model. So, anyone can get used books easily and cheaply. By using this platform users can share a book with anyone who may need it for free or the user can rent the book for a certain period in exchange for money. Renting is beneficial for both users and the provider. Some key features of this model are, unique login using users' mobile numbers, creating a profile for free, upload the book list the user wants to share. Chatting between the users can play a big role and make the platform useful for book lovers. They can discuss the pros and cons of books they are reading. Users may recommend some books to each other. The user can find the provider of the books from the map. So, the user can collect the book from any suitable location as they wish. Another key feature is, this platform will provide both textbooks and novel or fictional books. Some key features of this model are, unique login using users' mobile numbers, creating a profile for free, upload the book list the user wants to share [3]. Chatting between the users can play a big role and make the platform useful for book lovers. They can discuss the pros and cons of books they are reading. Users may recommend some books to each other. The user can find the provider of the books from the map. So, the user can collect the book from any suitable location as they wish. Another key feature is, this platform will provide both textbooks and novel or fictional books. As people nowadays reading a lot of books [4] beside textbooks, so this platform may play a vital role for those readers to find any book they cherish to read.

1.2 Motivation

Our generation is smartphone geeks now a days. The number of bookoholic people are decreasing day by day. Although we love to browse our phone more than the books. But some of us still read books to many of them scent of book pages are more addicting than any other thing but sometimes they can't find the book they want to read or sometimes can't afford it due to high price that is the motivation for our project. Our goal is to make a platform for who love read books and who to share.

1.3 Objective

The main objective of this project is to build an easier and faster platform between the book reader and book provider where they can connect with each other and share their books. A platform where users can

- User can search their required books.
- User can borrow any books if provider of the books receive his/her book request.
- Both user see the book owner location.
- User can chat with other book owner.
- Both readers and providers can give a rating to each other
- All user can see their previous transaction history
- The user can add/remove/modify as many as books to their 'my Desk' (library). 'my desk' defines those books the user wants to share with others.

1.4 Expected Outcome

The results of this project are very important. The following are some of the things mentioned.

- By using this app, any user can easily search any book from anywhere and they can request the book provider to get the books.
- The user can see the book provider location and he/she can also chat with the book provider.
- By using this app, user can save their money because the need not to buy the book, user can also save their time too.

1.5 Report Layout

We have created an Android application titled “Book Sharing”. We will ensure the project is completed on time. Respecting our work flow, we design project reports.

The second chapter names the Background, we have discussed the role, related work, comparative study, problem areas.

The third chapter names the Requirement Specification, we have discussed business process modeling, requirements collection and analysis, case modeling and use of details, logical data models, requirements.

The fourth chapter names the Design Specification, we talked about front-design, back-end design, connection design and UX and application requirements.

The fifth chapter names the Implementation and Testing, we talked about database implementation, front-end design implementation, test implementation, test results and reports.

The sixth chapter names the Discussion and Conclusion, we have discussed the future scope, coverage and outcome of the entire project.

CHAPTER 2

BACKGROUND

2.1 Introduction

Knowledge increase by sharing not by saving. The most we can learn or gain knowledge by reading books. Many of us love to read books, but sometimes the desired book we want to read is not available to us, to the market, to online also. But someone has the book and he already has done reading, and the book is just there in the corner of the self. So, if someone needs the book he/she might share the book. In this situation, a platform is much needed by which both who need that book or who want to share can interact with each other.

2.2 Related Works

There are some related works that has been done on this similar topic but none of them is totally similar to our project.

There are some application available named “Free Books”, “Book Share” etc. Those applications only work with online reading books. They offer physical books though but for selling. But our system offer physical book for free to share with others.

2.3 Comparative Studies

There are some system is currently available now by which we can read books online. They offer online books, buy or sell books online, and many more. We offer a platform which will allow you to share books that wanted by others and opportunity to find books which you want. By using this android application, users can get all kinds of help that can be fulfill by others. By using this android platform you can help others, and you can find your desired ones. Nowadays as the Internet reaches everywhere, we can easily communicate anytime, anywhere, no matter where our destination is.

2.4 Scope of the Problem

Our current sharing system is not a beta version. So, we can discuss some problems here;

- The user may not locate each other.
- This is a fully online based application but the user should perform this platform manually.
- Both who give and who receive the book should use the platform properly, the receiver should give back the book timely.
- This application needs location, so anyone can locate the user.
- Our application is just a newer version, we should update this platform according to users need.

According to these problems, our application offers solutions that will cover every need of sharing books.

2.5 Challenges

In every project, there are also some challenges for us. As our goal is to make a platform which will be android based. So, we also have to face some challenges too.

- Our platform is an android based mobile application, so if anyone has not an android phone then this platform is not for the person, the application will not be helpful.
- Collecting books from others is always tedious and time-consuming.
- Our application need an internet connection to access. So, if anyone does not have an internet connection then they will not be able to use this platform.

Chapter 3

REQUIREMENT SPECIFICATION

3.1 Requirement Collection and Analysis

The system that exists for sharing books depends on many things such as the location of the user, phone numbers, home address etc. If a person is not active in internet then it is very difficult to find fiction or novel for a person, if their friends don't read any book besides textbooks. Now there are a lot of book related group in social media but things are not as easy as we see. Collecting books from others is always painful and time consuming [5]. The whole world is a global village because of the internet. The world is now in the palm of people hand. Now a days we want to save time as time is the most valuable thing. That's why many of us shop online. Now, if they find a platform from where they can collect books they want to read for free of cost or in exchange for a small amount of money they will accept the platform warmly without a doubt. Our proposed model is that expected platform [6], which book overs and readers are seeking for a long time.

Software Requirements:

- Users
- Users login system
- Time advantage
- Easy to accept

Hardware and Software Requirements for our system:

Before purchasing any software or hardware for a digital platform you should make sure that the platform capable to supports the system requirement. Your computer has the specifications required to use this software and hardware efficiently; all computer software requires specific hardware components or other software resources to be present on one computer. During the development phase, all the tools and platforms on the system need to be described in order for the new system to move forward.

- XML
- JAVA
- Node.js
- Android Studio 3.5.0

3.2 System Flow Diagram

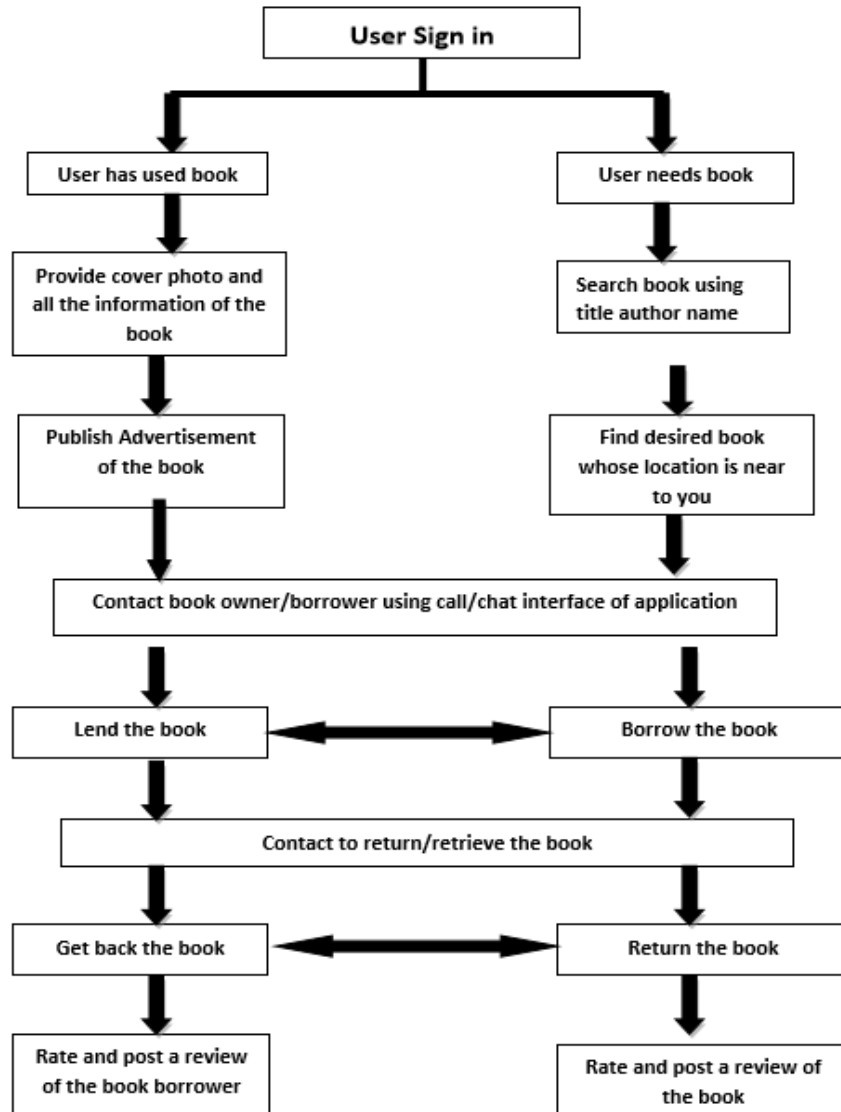


Figure: System Flow Diagram

3.3 Data Flow Diagram

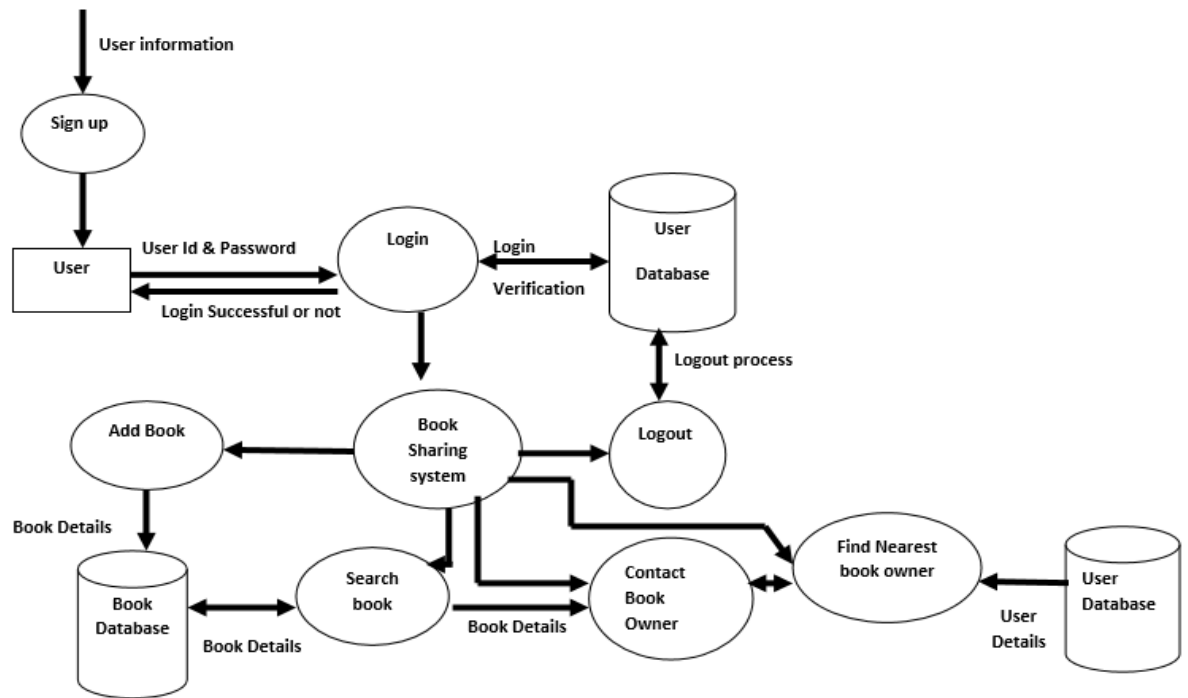


Figure: Data Flow Diagram

Use Case 1: Login

Primary Actor: All services provider, Patient.

Precondition: Must have registered Email and Password in the system.

Main Success Scenario:

- 1) The actor places the email id in the email section
- 2) The actor places the password id in the password section
- 3) Press the Login button

Exception Scenario:

- 1) The email id must be registered on the system
- 2) Incorrect password

Use Case 2: Messaging

Primary Actor: Service Provider, Patient

Precondition: Actor has logged in

Main Success Scenario:

- 1) Actor find expected service provider from his history
- 2) Actor writes message and send the message

Exception Scenario:

- 1) Message must contain characters other than Space and New line.

3.4 Design Requirements

When we design a software or system, we take into account some requirements to make the project efficient. It is almost mandatory to do the following requirements.

- Login activity
- Registration activity
- Home activity
- Navigation drawer
- Profile activity
- Location Activity
- Chat Activity
- My Desk Activity
- Book Request Activity
- Notification

3.5 System analysis

Principle components of the system are:

- Registration
- Login
- Search books
- Request book
- Transaction

As this is an android platform, an android phone user can get access to those books anytime they wish. If any user needs a book, the user has to search for that book. If the book exists in our platform user will see it. Users can choose any of the books after searching for a book, regarding the location. After choosing the book user can see the owner's profile, rating by which the user can judge whether the owner is malicious or not. Although there is no chance of counterfeit people as the registration process requires a unique mobile number.

By using the systems native chatting option users and providers can interact between them. The chatting option makes the platform more convenient and secure. After chatting with the provider if they agree the user can ask for books. The provider can agree to the user's request by accepting a smart notification option.

Only if the provider accepts the request then both user and provider can share those books among themselves and after use, they can give a rating to each other. These ratings will indicate the behaviors, responsibility of both the user and the provider.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

The front-end design is basically divided into two parts. The UIX design and the UIX development. At present, it has been made clear that there is a difference between Photoshop designed and XML design in mobile application development. Everything that we can see is a XML. These include things like fonts, drop-down menus, buttons, transitions, sliders, contact forms, etc. For android application we need XML to create user interface [7].

4.2 Back-end Design

The technologies mainly used in development are mainly java and different android libraries. Java is an open-source programming language maintained by Oracle and by a community [8] of individual developers and corporations to address many of the challenges encountered in developing any application, program or software. As the system will be deployed in android, java is one of the main languages for building android applications. It aims to simplify both the development and testing process of any programmable software. The database is the most important thing of any application, software or platform. The whole platforms data will be maintained by using Google cloud-based database platform 'Firebase'. Firebase is free to use [11-12] and used for storing images, data from users, etc.

The most important feature nowadays for any application is the location [13]. For providing location, google map and google location is best. But nowadays Google doesn't offer free map services [14], so we had to use this service by accessing another 3rd party system. The 3rd party system is an android library known as the Leku android library. Google location is used for showing both user and provider location [15].

4.3 Interaction Design and UX

Interaction with user experience (UX) design is the most important part of design. The result of an application depends on user satisfaction. As an application there is more User-friendly depends on interaction and Design part. In our application we have used a useful model of interactive design

4.4 Implementation Requirements

We were given a very good idea of the implementation requirements. The main task of this part is to make all the things easier, user friendly. The following is a list of implementation requirements;

- Easy to create
- Easy to manage
- Easier to analyses
- Easier to interact
- Dynamic pages
- User-friendly

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

We are using Firebase as the database for this project. As Firebase stores all the data as JSON tree format, the whole database of our project is stored as JSON. The whole database is a JSON object and the entities of the database is the children of the object. The entities have their own child JSON objects which are the instances of individual entity. These JSON objects have unique ids. In these objects the attributes are stored as key value pairs. There are also JSON arrays for multi-valued attributes. Firebase is easily traceable but there is some problem too. As this is a non-SQL database, the queries are not like regular SQL queries. There is no concept of Primary Key or Foreign Key. But this can be obtained by the design of the JSON tree. As this is a new concept in database, this seemed a little confusing but this can be a great way to store data in a large scale in near future.



Figure 5.1: Database Implementation Model

5.2 Implementation of Front-end Design

The figure displays two distinct user interface forms for account management. The left form, titled "Create an account", is a vertical stack of input fields. It begins with a phone number field containing "01723063565", followed by a name field with "Mkstafizur Rahman", an email field with "mostafizur15-8001@diu.edu.bd", a profession field with "Student", and a location field with "DOHS Baridhara, Dhaka, Bangladesh, Dhaka". A password field with a lock icon and dots is at the bottom, followed by a grey "REGISTER" button. The right form, titled "Login", also features a phone number field with "01723063565" and a password field with a lock icon and dots. Below the password field is a "Remember me" checkbox. At the bottom of the form are two grey buttons: "LOGIN" and "SIGN UP NOW".

Figure 5.2: User login and registration

In figure 5.2 the first picture is user registration activity, user can register themselves by fill up some particular fields such as their phone number, name, email address, profession, location, and password after then the user click the register button to register themselves. After completing their registration user need to login by filling up their unique phone number and password. If the user are not registered they need to register first.

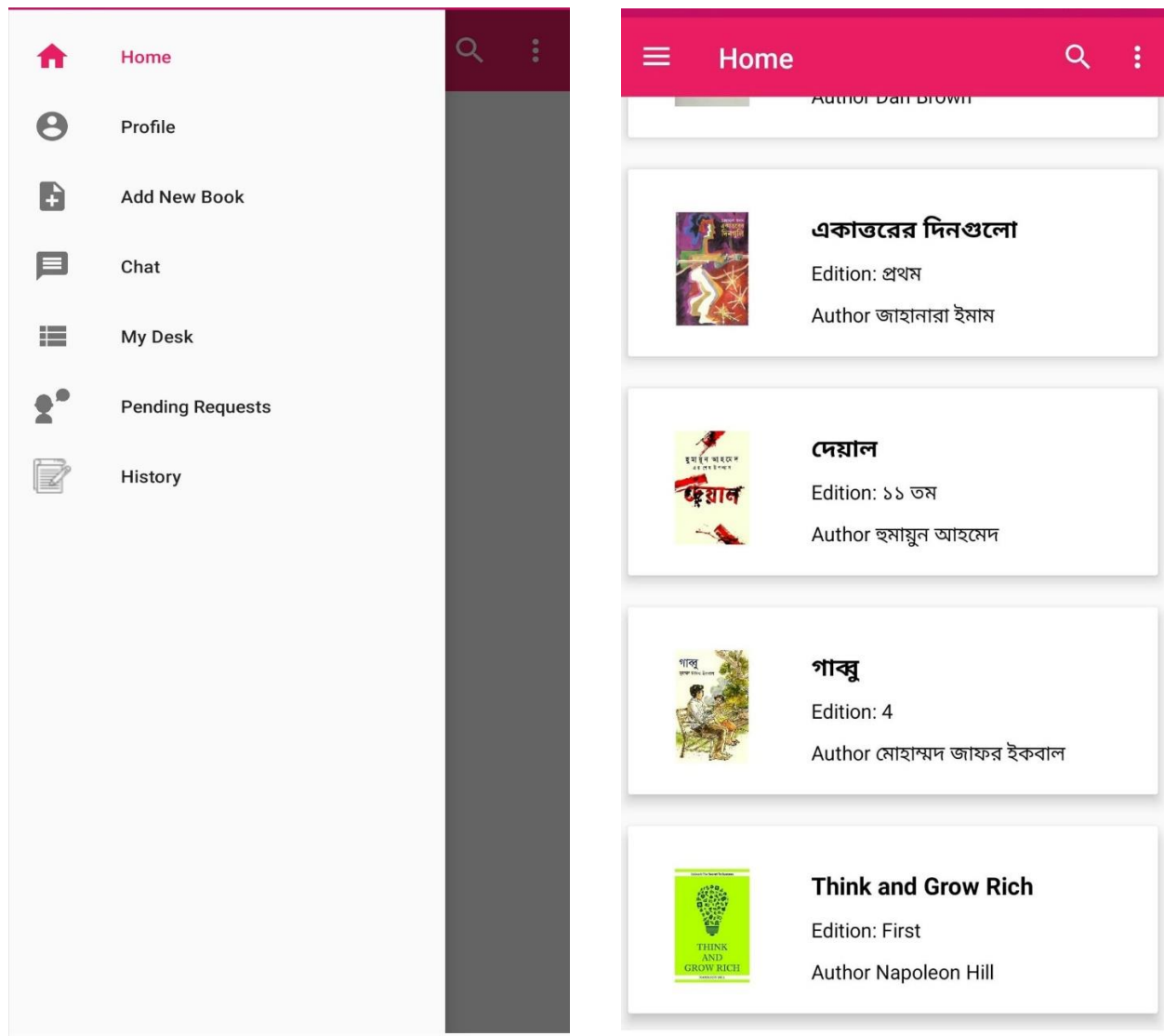


Figure 5.3: Home and Navigation Drawer

In figure 5.3 the first picture is Navigation Drawer where user can find all the services of this system, the second picture is home activity where user can find all the books that was added priviously by all users, users can simply find their book by searching the book name.

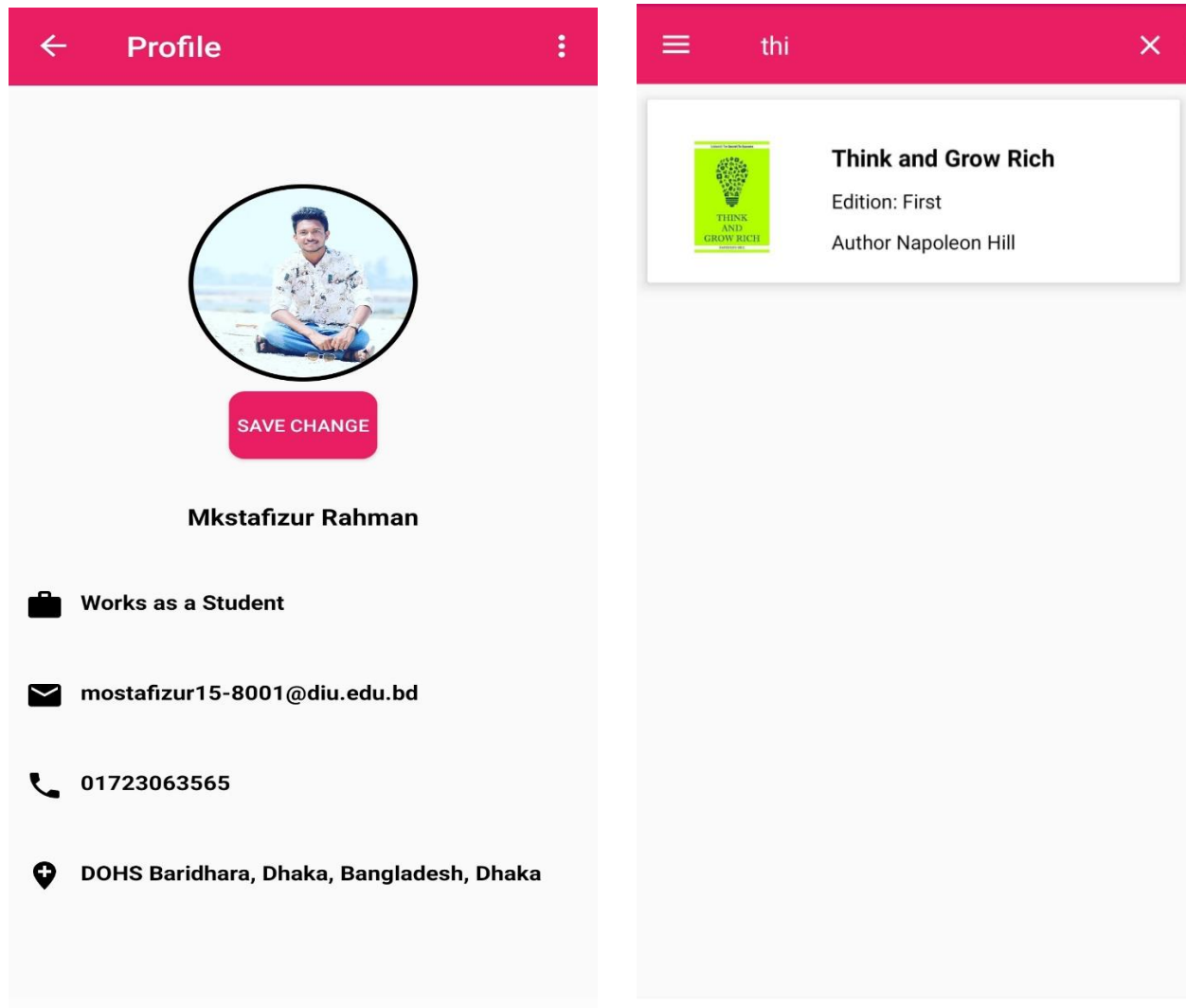


Figure 5.4: Profile and home Activity

In figure 5.4 the first picture is profile activity and second picture is home activity where user can search their require book.

Add a Book

Add a Book

Enter Book Title

Enter Author name

Enter ISBN No.

Enter Publisher Name

Enter Genre

Enter the number of Edition

Enter Language

Enter The number of Page

Enter Security Money for The Book

Choose Book Cover

Add Book In th Desk

Book Info

Author : Napoleon Hill

Edition : First

Publisher : Amazing Reads

Book Category : Self Motivation and Meditation

ISBN : 9788192910918

Language : English

Total Number of Page : 332

Security Money : 140

Book owner : Saidur Rahman

Request For Book

Check Book owner Location

Chat with Book owner

Figure 5.5: Add book and book details information

In figure 5.5 the first picture is add book activity, user can add their book by filling up the particular fields and the second picture is book details information activity. In this activity user can request this book by pressing the “Request For Book” Button. At this time user can also see the book owner location and also can chat with this book owner.

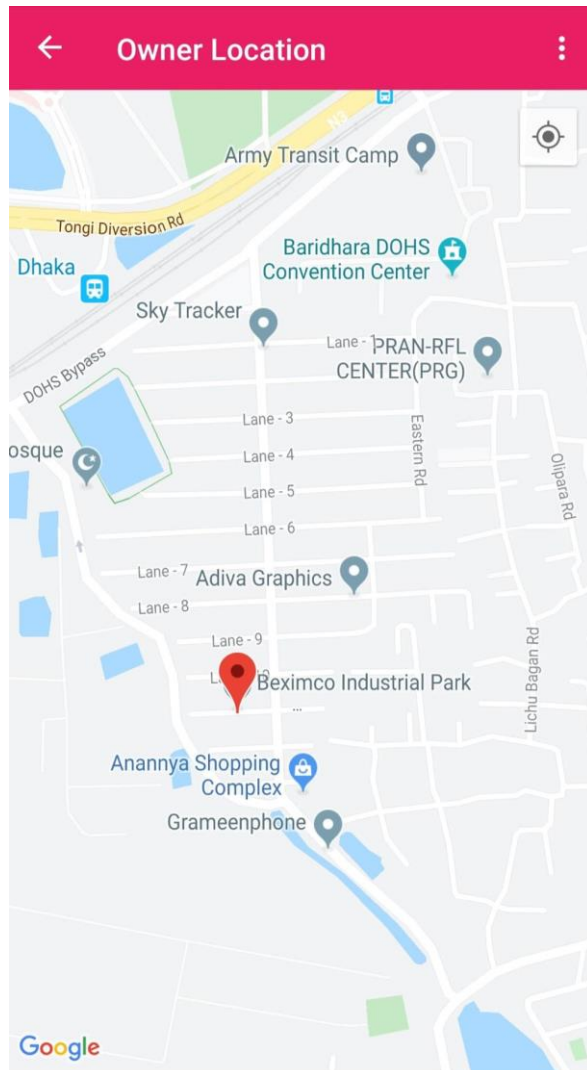


Figure 5.6: Location and chatting activity

In figure 5.6 the first picture user can see the book owner location and second picture is chatting activity user can chat with the book owner .

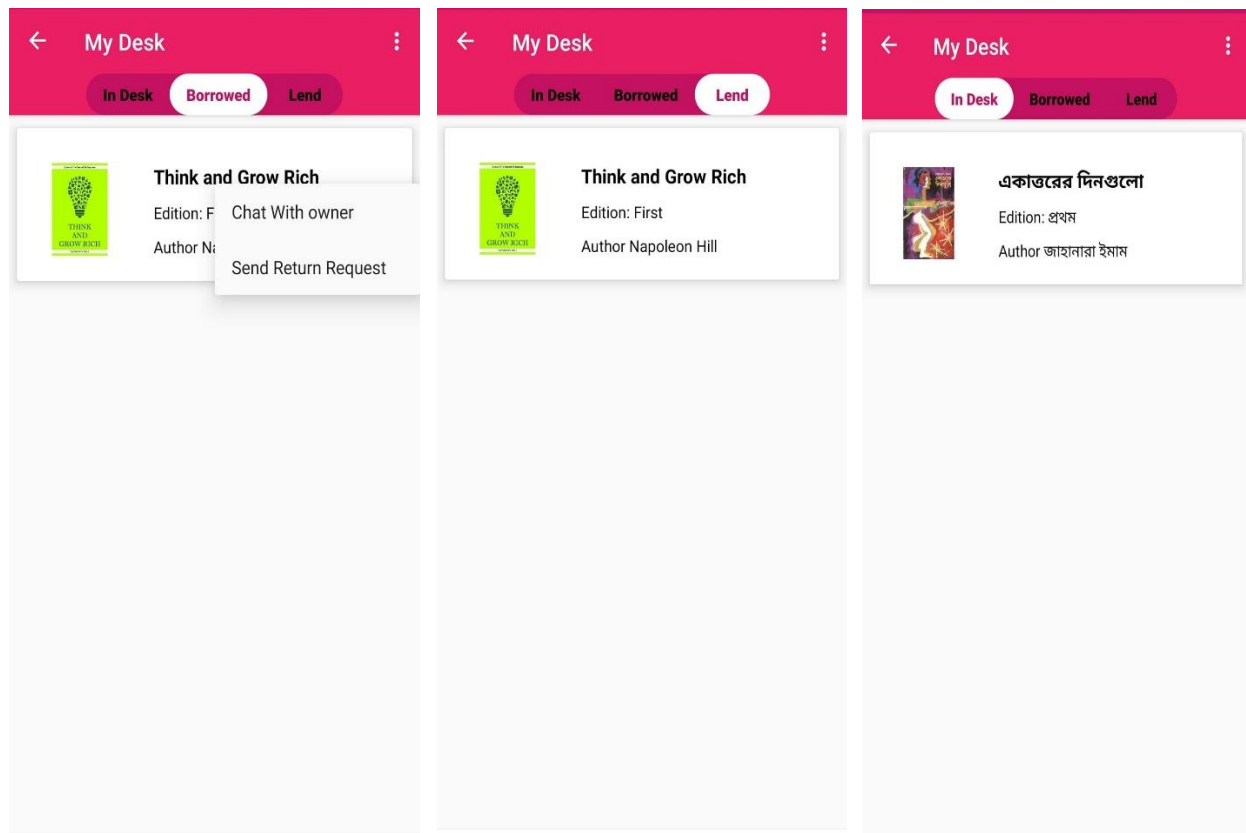


Figure 5.7: My desk Activity

In figure 5.7 this is the “my desk” activity, in this activity there are three navigation option. If the user add a book then it will shown “In Desk” and if the user borrow a book that will shown In “Borrow” and if the user lend a book it will shown in “lend’ option. The user also can chat with the book owner and user can also send return request if he borrow any books.

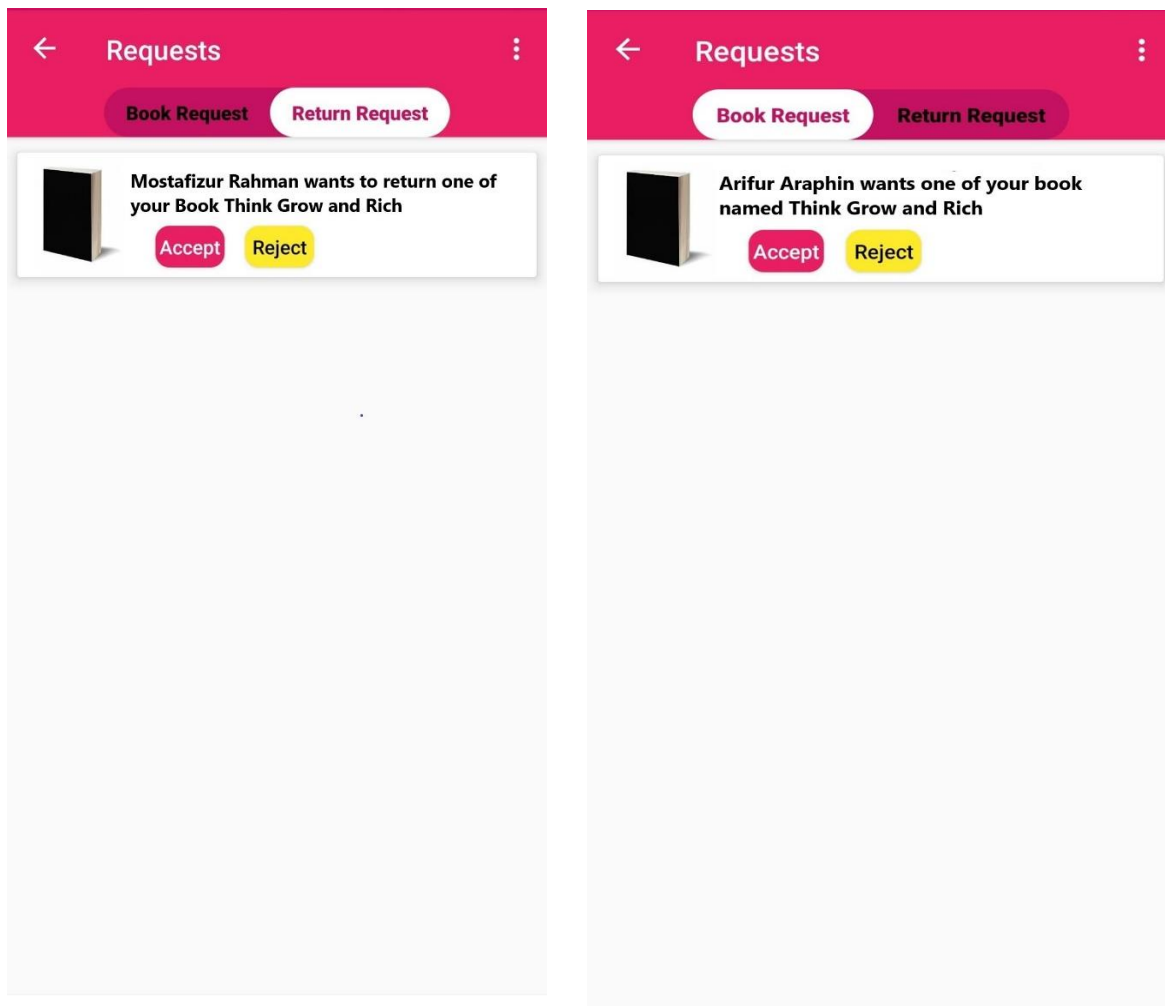


Figure 5.8: Book Request Activity

In figure 5.8 this is the Request Book activity. In here there are two navigation options. One is Book request in here people who want my book will be shown here. Another option is Return Request, this will show people who want to return books.

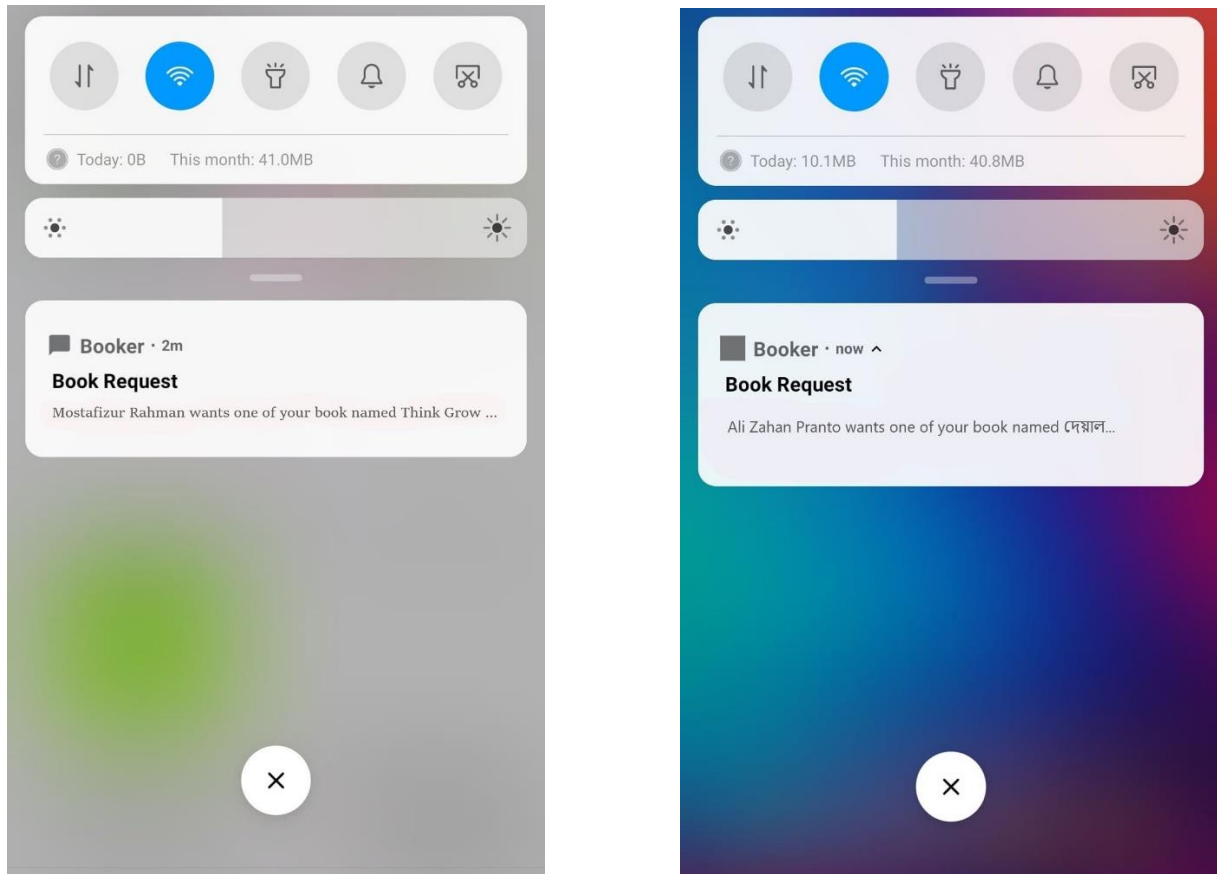


Figure 5.9: Notification

In figure 5.9 it will show the real time notification in real devices. The apps will automatically send the user all the notification in real time. Suppose the user who wants book who send messages, who wants to return books etc.

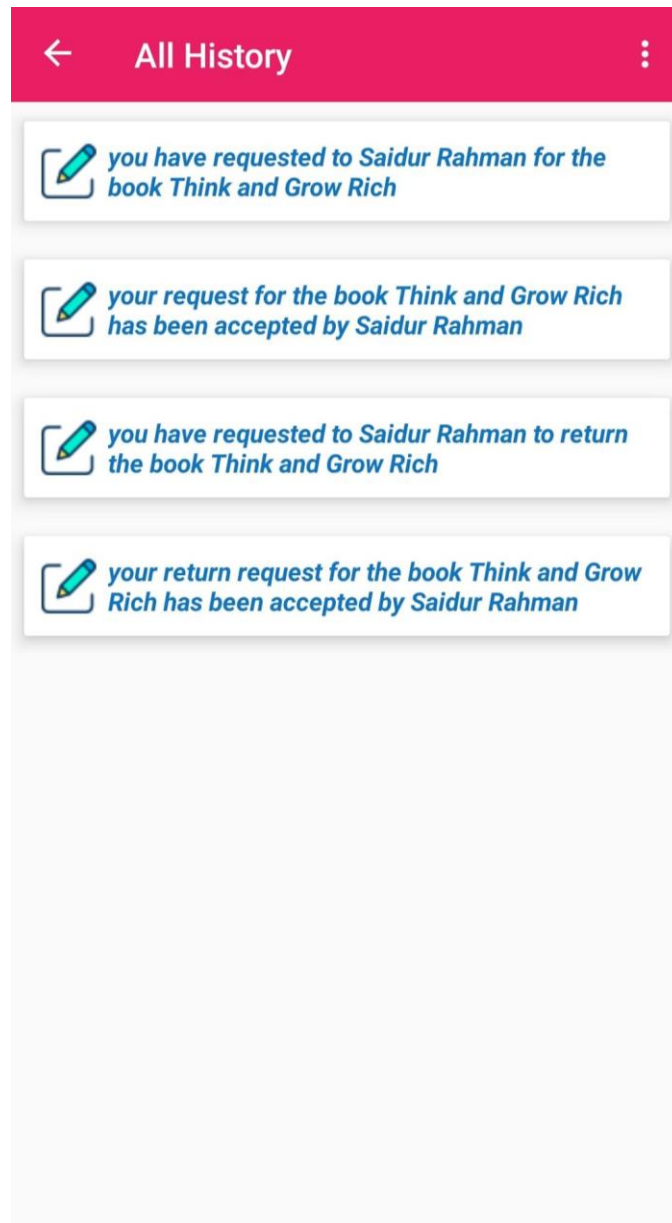


Figure 5.10: History

In figure 5.10 this activity will show all the activities of the current user. Who wants to return books, who send book request...every things.

5.3 Implementation of Interactions

There are common interfaces in modern communication systems is interaction. This is due to easy and fast communication. When users are on a particular page, the other activity involves doing something else that helps us to interact. This should be done in a way that attracts users.

5.4 Testing Implementation

5.4.1 Testing

Testing is an integral part of any system development project. The main objective of the test is to validate the contribution, authenticity, reliability and quality of the application . The purpose is to implement an Android-based application.

5.4.2 Unit Test

Each piece of software is tweaked to ensure that the design is properly finished. This ensures that every part of the application will be compliant with the requirements.

5.4.3 Unit Test Case

There are two parts in unit test. One is the database handler and the other is interface handler. We also use some basic features, such as data collection, data processing, and data extraction. The database handler will test these three functionality. The database handler test case now looks like this.

- Each user can successfully add new data or not
- Each user can successfully edit his or her data or not.
- Each user can successfully delete his or her data or not.

5.4.4 Implementation Test

The last and most important chapter is implementation. Applies advanced training personnel, system testing and execution.

5.5 Test Result and Reports

All tests can be performed to enhance the efficiency of a system and to integrate software where each error can be found and resolved.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The proposed system for sharing book will provide a platform to people who seek knowledge, to people who read book instead of using social media all day long, to people who read books as a hobby, to people to whom reading book is like addiction, to people who read books for enlighten their mind. This system for book sharing will provide a platform for every one to give and take books in a more efficient and streamlined manner. The system incorporates several techniques to further increase the process of sharing books. By automating the book searching process with the help of computer assistance a lot of precious time and effort of the students will be saved. The proposed system will thus be much more efficient than the current offline process and will be a huge help for all kind of people.

The system will drive the new generation towards books who think that reading book is boring, because of the less availability of the book. Some of don't know the feelings of reading a hard copy of a book because they used to it. They don't find it comfortable due to its unavailability. The system consists of several techniques for further improvement of the method of reading and sharing books. Moreover, the system will save a lot of time to find any book. Thus, the proposed system will be much more efficient than ever before than the existing offline procedure of sharing books. In the end, the system will ensure the reach of knowledge to everybody's doorstep. The system will help to fulfill one of the basic needs of any human which is education [16]. The system will establish the tagline, 'maximum use of the book, minimum use of money'.

6.2 Scope of Further Development

There many scopes of further developments. We have several ideas-

- We will build a sustainable website for this platform.
- We will build software version for various operating systems.
- We will build apps for ios.
- We will try to implement AI based medical assistant in this system.

REFERENCES

- [1] Prathamesh Muzumdar, The University of Texas at Arlington 'Online Book Sharing System - A new trend in textbook sales management for services marketing' Journal of Management and Marketing Research (2009).
- [2] Carbaugh, R., & Ghosh, K. (2005). Are college textbooks priced fairly? Challenge, 48 (5), 95-112.
- [3] Bakos, J. Y. (1997). Reducing buyer search costs: Implications for electronic marketplaces. Management Science
- [4] Wargo, John M. PhoneGap Essentials: Building Cross-Platform Mobile Apps. Addison-Wesley, 2012.
- [5] Abdullah-Al-Shafi, M., Bahar, A. N., & Wahid, K. A. (2019). A New Modular and Symmetric Full Adder/Subtractor in Quantum-Dot Cellular Automata Nanocomputing. Journal of Nanoelectronics and Optoelectronics, 14(9), 1275-1282.
- [6] Abdullah-Al-Shafi, M., & Bahar, A. N. (2019). Designing majority gate-based nanoscale two-dimensional two-dot one-electron parity generator and checker for nano-communication. International Nano Letters, 9(3), 265-276.
- [7] Abdullah-Al-Shafi, M., & Bahar, A. N. (2019). A New Structure for Random Access Memory Using Quantum-Dot Cellular Automata. Sensor Letters, 17(8), 595-600.
- [8] Abdullah-Al-Shafi, M., & Ziaur, R. (2019). Analysis and modeling of sequential circuits in QCA nano computing: RAM and SISO register study. Solid State Electronics Letters 1(2), 73-83.
- [9] Bahar, A. N., Laajimi, R., Abdullah-Al-Shafi, M., & Ahmed, K. (2018). Toward efficient design of flip-flops in quantum-dot cellular automata with power dissipation analysis. International Journal of Theoretical Physics, 57(11), 3419-3428.
- [10] Abdullah-Al-Shafi, M., & Bahar, A. N. (2018). An Architecture of 2-Dimensional 4-Dot 2-Electron QCA Full Adder and Subtractor with Energy Dissipation Study. Active and Passive Electronic Components, 2018.
- [11] Abdullah-Al-Shafi, M., Bahar, A. N., Bhuiyan, M. M. R., Shamim, S. M., & Ahmed, K. (2018). Average output polarization dataset for signifying the temperature influence for QCA designed reversible logic circuits. Data in brief, 19, 42.
- [12] Abdullah-Al-Shafi, M., & Bahar, A. N. (2018). Energy optimized and low complexity 2-dimensional 4 Dot 2 electron flip-flop and quasi code generator in nanoscale. Journal of Nanoelectronics and Optoelectronics, 13(6), 856-863.
- [13] Abdullah-Al-Shafi, M., (2018). A Study on 2D 2-Dot 1-Electron QCA Based Full Adder and Ripple Carry Adder Design. Nanosistemi, Nanomateriali, Nanotehnologii, 16(2), 289-301.
- [14] Abdullah-Al-Shafi, M., & Bahar, A. N. (2018). Efficient Organization of Data Center for Cloud Computing: A Survey. International Journal of Grid and Distributed Computing, 11(6), 79-86.
- [15] Abdullah-Al-Shafi, M., Bahar, A. N., & Saha, S. (2016). Mobile On-demand Computing: The Future Generation of Cloud. International Journal of Future Generation Communication and Networking, 9(11), 161-178.
- [16] Abdullah-Al-Shafi, M., & Bahar, A. N. (2016). Cloud Computing: An Aspect of Information System. International Journal of Applied Information Systems, 10(4), 46-50.

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