MINI PROJECT

(2020-21)

"BOOK FINDER APP"

Project Report

Institute of Engineering & Technology

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GLA University, 17 km. Stone NH#2, Mathura-Delhi Road,

Chaumuha, Mathura – 281406 U.P (India)

Declaration

I/we hereby declare that the work which is being presented in the Bachelor of technology. Project **“Book Finder App”**, in partial fulfillment of the requirements for the award of the ***Bachelor of Technology*** in Computer Science and Engineering and submitted to the Department of Computer Engineering and Applications of GLA University, Mathura, is an authentic record of my/our own work carried under the supervision of **Mr. Mandeep Singh, Technical Trainer, Dept. of CEA,GLA University.**

The contents of this project report, in full or in parts, have not been submitted to any other Institute or University for the award of any degree.

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Certificate

This is to certify that the project entitled "Book Finder App", carried out in Mini Project – I Lab, is a bonafide work by Ashita Goyal, Bharti Gautam, Janvi Pangoriya, Naina Agrawal and Nidhi Gupta and is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology (Computer Science & Engineering).

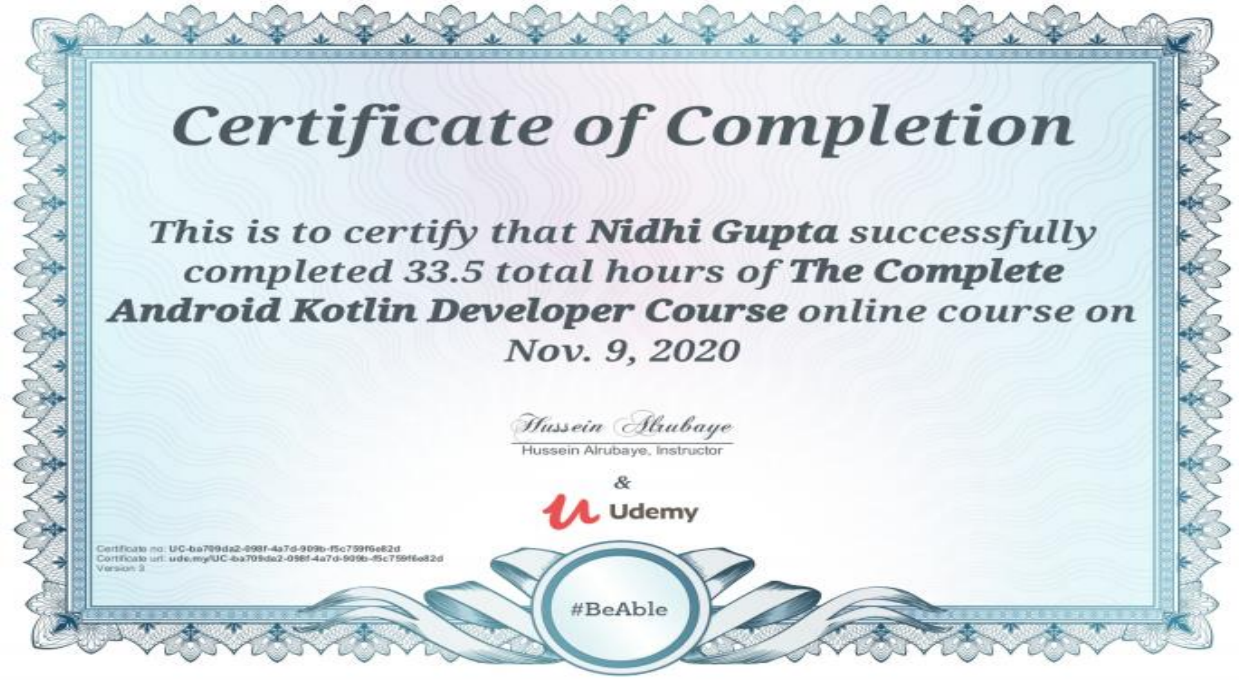
Signature of Supervisor:

Name of Supervisor: Mr. Mandeep Singh

Date:

Training Certificates

- **Nidhi Gupta**



Certificate of Completion

This is to certify that **Nidhi Gupta** successfully completed 33.5 total hours of **The Complete Android Kotlin Developer Course** online course on Nov. 9, 2020

Hussein Alrubaye
Hussein Alrubaye, Instructor

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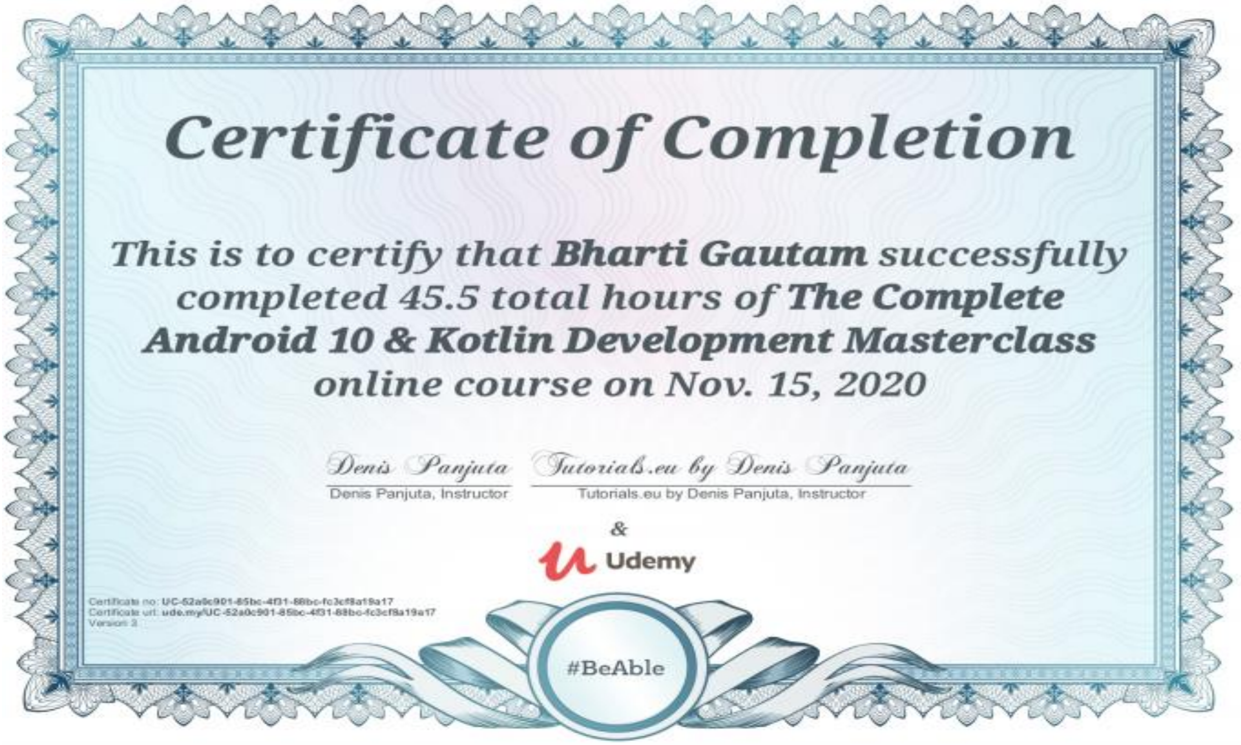
Version: 3

- **Bharti Gautam**



Certificate of Completion

This is to certify that **Bharti Gautam** successfully completed 45.5 total hours of **The Complete Android 10 & Kotlin Development Masterclass** online course on Nov. 15, 2020

Denis Panjuta
Denis Panjuta, Instructor

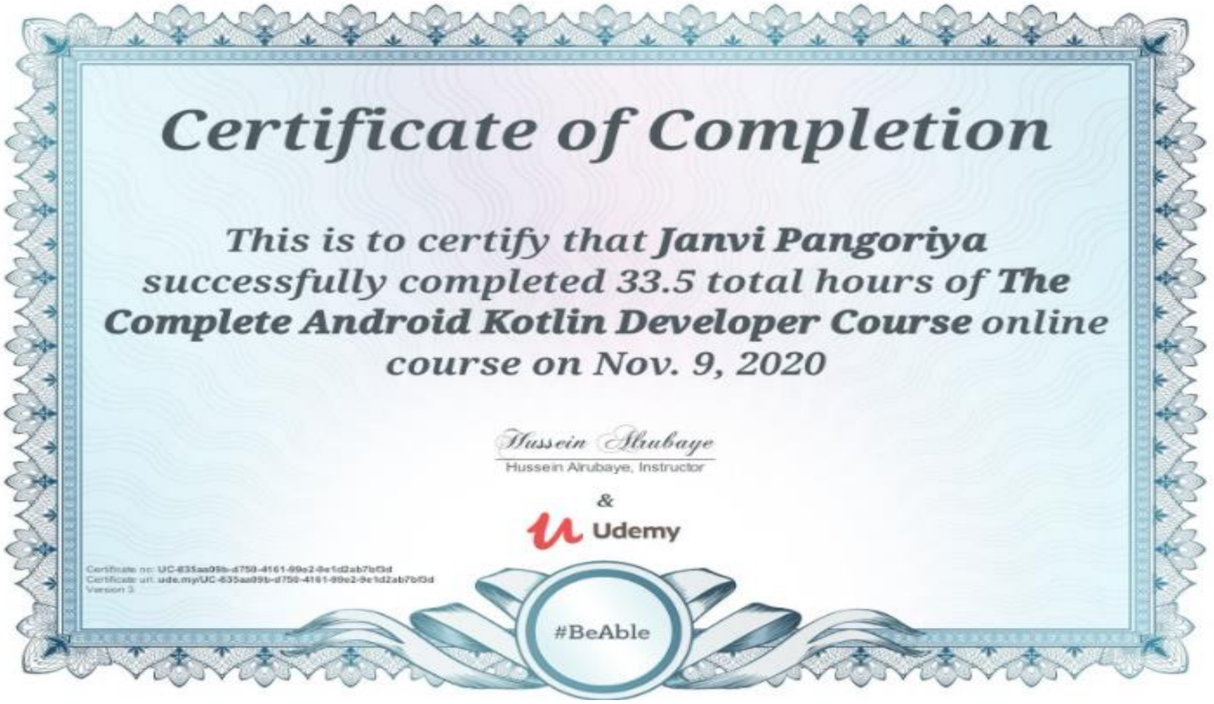
Tutorials.eu by Denis Panjuta
Tutorials.eu by Denis Panjuta, Instructor

&

Udemy

Certificate no: UC-52a0c901-85bc-4f31-88bc-fc3cf8a19a17
Certificate url: ude.my/UC-52a0c901-85bc-4f31-88bc-fc3cf8a19a17
Version: 3

- **Janvi Pangoriya**



Certificate of Completion

This is to certify that **Janvi Pangoriya** successfully completed 33.5 total hours of **The Complete Android Kotlin Developer Course** online course on Nov. 9, 2020

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Hussein Alrubaye, Instructor

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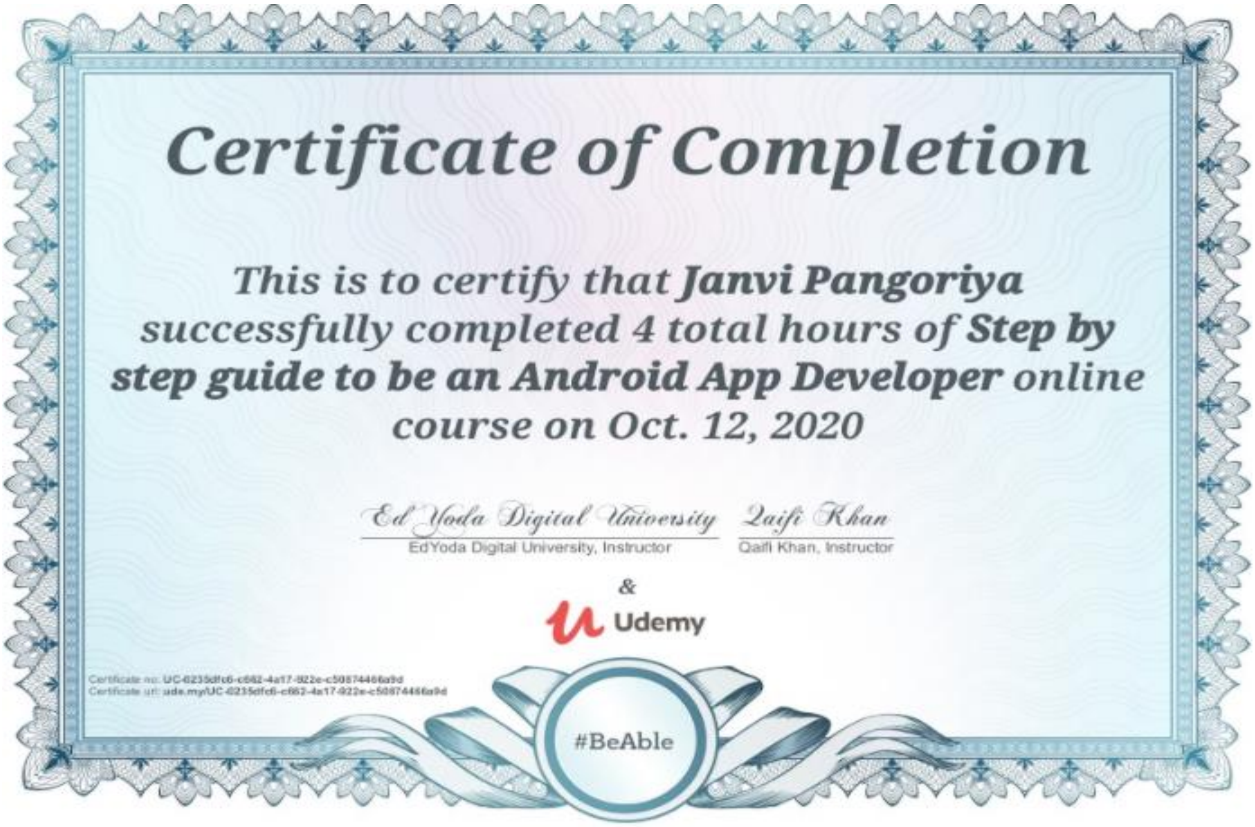
Certificate url: ude.my/UC-835aa09b-d750-4161-99e2-9e1d2ab7bf3d
Version 3

#BeAble



Certificate of Completion

This is to certify that **Janvi Pangoriya** successfully completed 4 total hours of **Step by step guide to be an Android App Developer** online course on Oct. 12, 2020

Ed Yoda Digital University
EdYoda Digital University, Instructor

Qaifi Khan
Qaifi Khan, Instructor

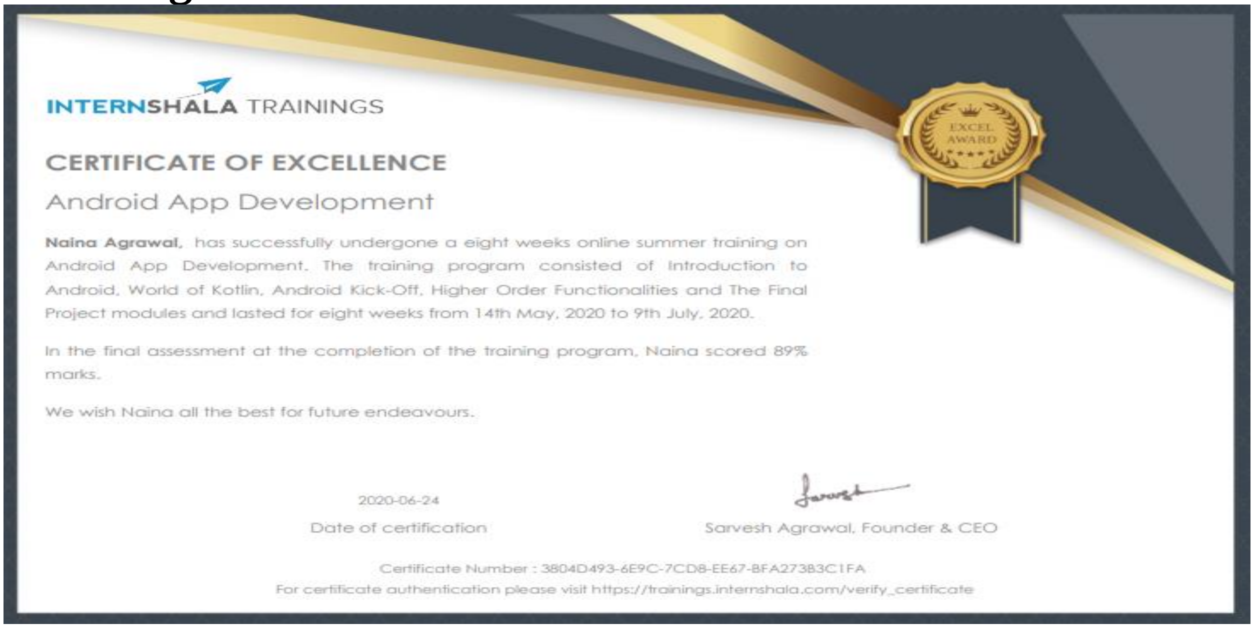
&

Udemy

Certificate no: UC-0235dfc6-c862-4a17-922e-c50874466a9d
Certificate url: ude.my/UC-0235dfc6-c862-4a17-922e-c50874466a9d

#BeAble

- **Naina Agrawal**



INTERNSHALA TRAININGS

CERTIFICATE OF EXCELLENCE

Android App Development

Naina Agrawal, has successfully undergone a eight weeks online summer training on Android App Development. The training program consisted of Introduction to Android, World of Kotlin, Android Kick-Off, Higher Order Functionalities and The Final Project modules and lasted for eight weeks from 14th May, 2020 to 9th July, 2020.

In the final assessment at the completion of the training program, Naina scored 89% marks.

We wish Naina all the best for future endeavours.

2020-06-24
Date of certification

Sarvesh Agrawal, Founder & CEO

Certificate Number : 3804D493-6E9C-7CD8-EE67-8FA273B3C1FA
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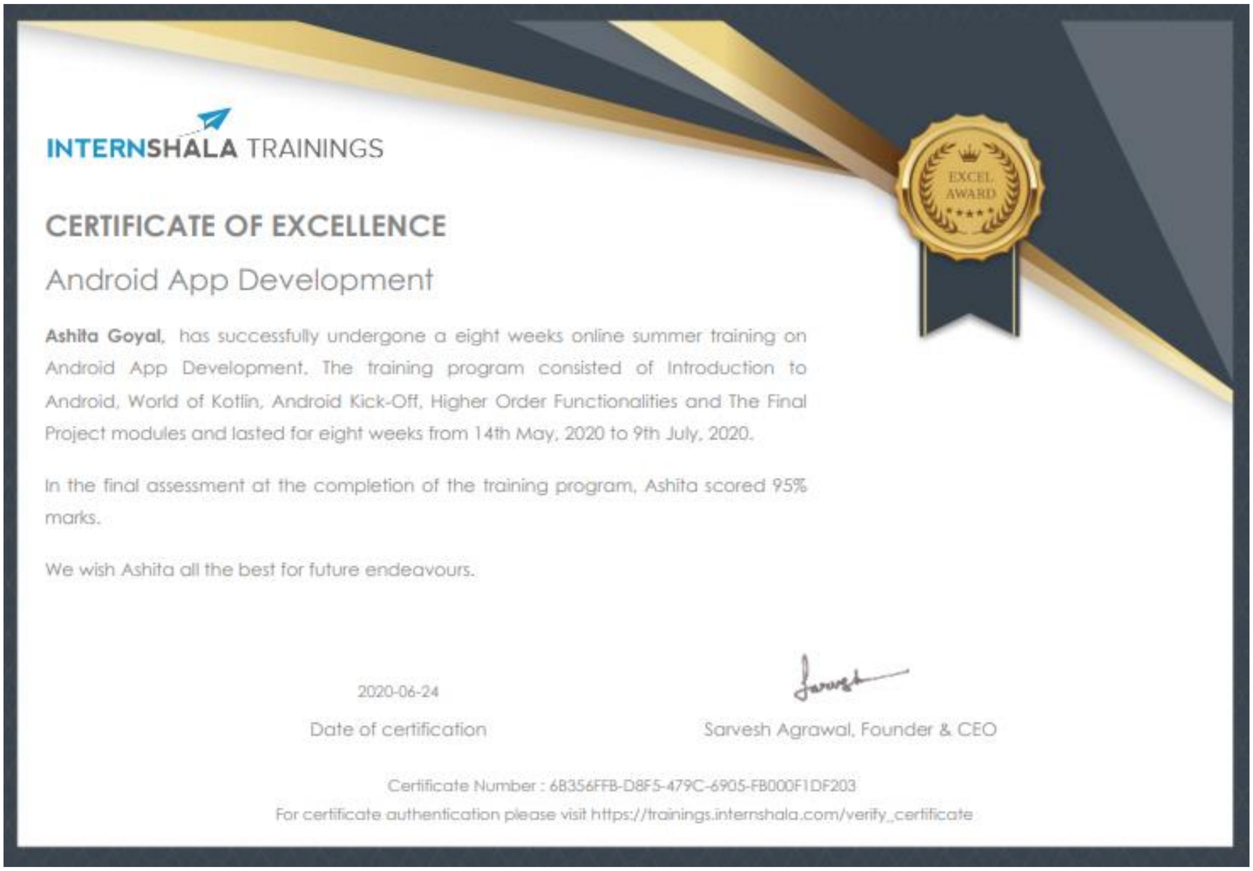
- **Ashita Goyal**



INTERNSHALA TRAININGS

CERTIFICATE OF EXCELLENCE

Android App Development

Ashita Goyal, has successfully undergone a eight weeks online summer training on Android App Development. The training program consisted of Introduction to Android, World of Kotlin, Android Kick-Off, Higher Order Functionalities and The Final Project modules and lasted for eight weeks from 14th May, 2020 to 9th July, 2020.

In the final assessment at the completion of the training program, Ashita scored 95% marks.

We wish Ashita all the best for future endeavours.

2020-06-24
Date of certification

Sarvesh Agrawal, Founder & CEO

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For certificate authentication please visit https://trainings.internshala.com/verify_certificate

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ACKNOWLEDGEMENT

Presenting the ascribed project paper report in this very simple and official form, we would like to place my deep gratitude to GLA University for providing us the instructor Mr Mandeep Singh, our technical trainer and supervisor.

He has been helping us since Day 1 in this project. He provided us with the roadmap, the basic guidelines explaining on how to work on the project. He has been conducting regular meeting to check the progress of the project and providing us with the resources related to the project. Without his help, we wouldn’t have been able to complete this project.

And at last but not the least we would like to thank our dear parents for helping us to grab this opportunity to get trained and also my colleagues who helped me find resources during the training.

Thanking You

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ABSTRACT

In this project, we are creating an android application, basically a Book Finder App which we have named Bookopedia. This application will provide us a platform to access the books we want to read at the ease of our fingertips. All the users will be having their separate accounts on this app which will be connected to their email id. Any book that the user wishes to read will be entered by him in the search box which works on the basis of queries input. The query may be an author name, the book name or the subject to which the book is related and will also work on specific keywords input. Apart from searching the books online, the user can save the book he/she likes in the favourites bar. The app is suitable in the present scenario as the world is being digitalized then why not the education system.. On the profile of the user, one can easily view the books he/she has read. The app will be completely efficient and transparent to the reviews of the people on the book and its price. To get more details about the book one can click on the book and get further grave details. This app will be using The Google Book API for providing all the books. Further the FAQ section provides all the necessary details that the user may need about the app. The app also has a complete User Interface attached to the firebase a perfect login system with email id and password and a forget password too.

Android App ecosystem is diverse and is changing people's life all over the world. Android users are expected to increase because of the advance changes of the operating system and the way it deals with issues and compatibility with other mobile devices. Furthermore designing solutions for the problems that we may face in future is essential. Like this application definitely stands the need of students at any time at their fingertips without any barrier of place.

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CHAPTER-1

INTRODUCTION

1.1 CONTEXT

This Android Application “Bookopedia” has been submitted in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GLA University, Mathura supervised by Mr.Mandeep Singh. This project has been completed approximately three months and has been executed in modules, meetings have been organised to check the progress of the work and for instructions and guidelines.

1.2 MOTIVATION

In the recent years, we have realized the importance of virtual learning and how important it is for us to have our resources online. Books have been the greatest source of learning all the while and having them at the reach of our fingertips would be an opportunity hardly any student would afford to miss.

In the century we are living the world is progressing at a really great pace, a lot number of technologies come up every single day. To keep up with the technology is also important to survive in this world of digitalization and learning. Along with this we need to have a place to keep the resources for areas of our interest so we thought of developing a app which could provide us with virtual books as well as a platform where we could keep the books we like marked. Adding to its features, some of the books will pop up into the suggestion box according to the recent search, making you go deep into the field you are learning in.

Moreover this kind of application can be used in areas/schools where guardians /parents cannot afford to buy books. This would be an excellent effort to provide education without any boundaries to all.

1.3 OBJECTIVE

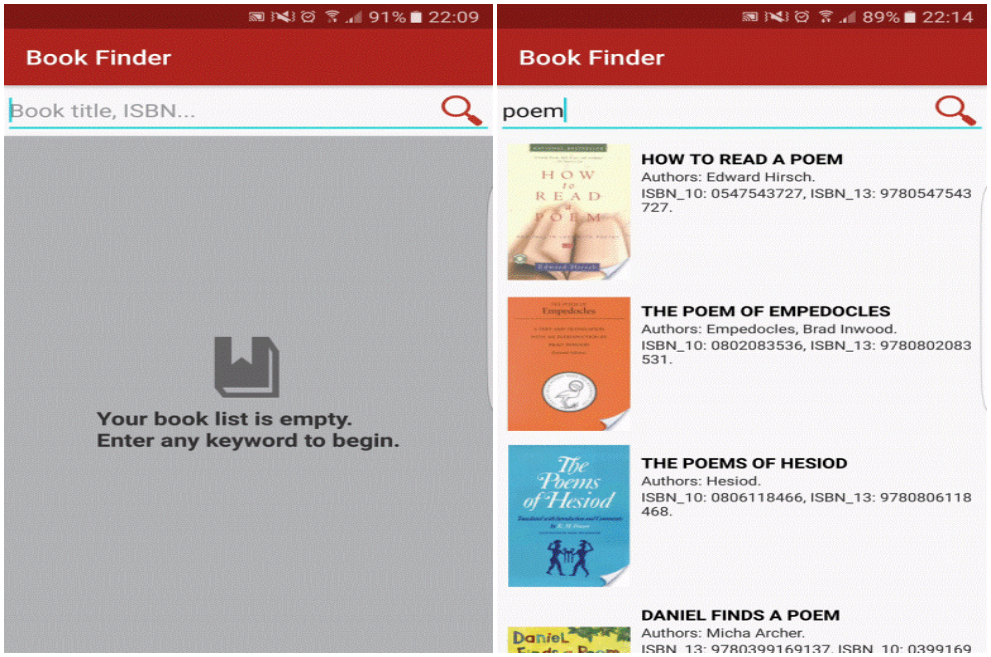
The main objective of this application is to create a Book Finder app named “Bookopedia” which will have a lot of e-books and a space to keep up the books one wants to read. There will be a facility to search any book one wishes to read by the use of any keyword like the author name, book name, the name of the subject. After the search there will be list of related books and one can view and read more about the details of the book and can further purchase it.

This application developed can be used at a variety of places, at education hubs and have its significance. The goal of the app was to provide a way to the learners and users to get all the books they desire to read at a particular location rather than randomly surfing the Internet.

1.4 EXISTING SYSTEM

In the present scenario, we are dealing with the manual searching of book from thousands of other books present in Google Book API. With the help of this application we are able to find a place where we can easily find the book with the help of keywords. As this idea as already implemented here are the some snap how our application will look.

As soon as the user enters the app, there will be landing page containing the name of the app and then there will be a login /signup page .Initially there will be search bar as shown in the image below. Then on the basis of certain keywords the app will fetch the results and the books will be displayed as shown in the second screenshot. In this we will add a feature to bookmarks the book or add to favourites as this will be helpful when the user try the use the same book again.



Your book list is empty.
Enter any keyword to begin.

poem

HOW TO READ A POEM
Authors: Edward Hirsch.
ISBN_10: 0547543727, ISBN_13: 9780547543727.

THE POEM OF EMPEDOCLES
Authors: Empedocles, Brad Inwood.
ISBN_10: 0802083536, ISBN_13: 9780802083531.

THE POEMS OF HESIOD
Authors: Hesiod.
ISBN_10: 0806118466, ISBN_13: 9780806118468.

DANIEL FINDS A POEM
Authors: Micha Archer.
ISBN_13: 9780399169137, ISBN_10: 0399169

(a) (b)

Figure-1: Existing System

1.5 SOURCES

The source of our project (including all the project work, documentations and presentations) will is available at the following link https://github.com/JanviPangoriya/Book_finder_app_mini_project.

CHAPTER -2

SOFTWARE REQUIREMENT ANALYSIS

2.1 IMPACT OF BOOKS ON DAILY LIFE

Books are considered as the best friends of students in a real sense, and it is said that they are also the best companions of students. They play a significant role in Student's life. Books give plenty of joy to students, and they learn a lot of things from books. They take them into a unique world of imagination and improve their standard of living.

Books help to inspire students to do hard work with courage and hope. They enrich the experience of students and sharpen their intellect.

Books increase the knowledge of students and improve their intellect. They reveal the different concepts and introduce the numerous shades of culture of the world. Reading books makes students aware of the various societies and civilizations across the globe. By reading books students can explore the past, present and future and can solve many problems. Books inspect the clarity and creativity in Student's mind.

Reading books can help improve the memory of students. When students read books, they create the images of the story and character mentioned in the book and they are able to memorize what they have read. So if students read regularly their visual memory will activate and it will help them to quickly remember things.

Reading books is an adequate remedy for students to relieve stress. When students read books they feel stress free and books take them to the world of imagination. Reading books inspire students and motivate them to change their life and they are highly charged with positive energy.

It naturally help them to focus on their life. This will also help them to improve their academic performance and they can learn more in very less time. When the students feel stress-free, then they can focus on their studies easily without any barrier.

By reading different books students will be able to interact with people in their endemic language. This is very useful when students go abroad for studies. If students know different languages then they can make new friends and easily cognate with their teachers.

Books can improve the Student's ability to think, and they are able to find the solution to problems. Reading books can builds the understanding and awareness of students in different situation. Books make the students self-effacing and compassionate and also boost the confidence of Students. Reading books can enhance the imagination and creativity of Student's and increases positive thinking.

2.2 PROBLEM STATEMENT

The Book Finder App "Bookopedia" is an Android Application which will allow the users to search any published book using either book name, author of the book, the subject into which the book falls in or any other keyword related to the book. Actually this app is connected to the Google Book API and every time the user searches for the book, the book is searched on the API and the book name, author name and a few more details are reverted back to the user's screen.

Along the side, for the users a library space is being provided for them to store the books they like in the "Favourites Section". As a help to the users, there will be FAQ Section containing the basic details and guidelines on how to use the app. The profile of each user is created and can be updated anytime as per the requirements. One another feature that our app holds is as soon as a new book is published, it is put up on the Google Book API and since we have directly connected to the API it can also be found on our app without any modifications by the creators.

This app is a complete book library with all the facilities a reader desires and with the proper User Interface as well.

2.3 HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirement

- Processor :intel i5

- Operating System :Any Operating System
- RAM : 8 GB (or higher)
- Hard disk : 256GB

Software Requirement

- Software used: Android Studio
- Language used : Kotlin, XML
- Database: Firebase
- User Interface Design : Android Application

2.4 MODULES AND FUNCTIONALITIES

- **Splash Screen**: The first screen with which the user interacts will be this screen containing the logo and the app name .This will disappear within 5 seconds after the app is displayed.

- **Login Page**: This page is for those users who have already registered themselves on the app and have a username and a password. There is also a way on this page for the new users to register themselves which will take them to the registration page.

- **Registration Page:** This is page is solely designed for the new users of the app who are willing to register themselves. This page takes input of the various details of the user and stores it in the database, later helping the user to login into the account with credentials they have provided.

- **Forget Password Page:** This page comes into picture when one of the user forgets the login credentials. In this case this page asks for the email-id with which the user has already registered. The app will check if there is any entry in its database with the id and if there a mail will be sent to the same id for recovering the credentials and notification will be given to the user.

- **Navigation Drawer**: This is the most important part of the application that provides interactivity within the app as it connects the various activities together like it is a side bar on which the profile, the dashboard, the favourites section, the FAQ section ,the About page of the page are linked and on clicking on each you can visit the pages.
- **Dashboard Page:** This is the page displayed for every user after entering the app successfully. It contains the search bar where the user can search the book according to the wish as well as some of the books are suggested with the genres recently searched or the most popular one.

- **Book Description Page**: After searching the book there are a number of books that appear, when the user select the book the page will be displayed that will contain all the details of the book i.e. the book poster author name, price and a short summary of the book and the link to buy the e-book.

- **Favourites Page:** Initially the page is empty, but when the users search for a book and like it then one can add it to the favourites section. This place is a user's personal space to store any book he likes or want to mark.

- **Profile**: This page will contain all the user details that the user entered while creating the account on the app. The user can update and make changes to all this information as desired.

- **FAQ Pages:** This page contains some of the questions that might arise in the mind of the users while using the app and to answer those, these answers are pre-written.

- **Logout page**: Then is this last panel for the users to sign out from the account. As soon as the users sign out they are brought back to the login page.

2.5 BOOKOPEDIA ON ANDROID APPLICATION

Bookopedia is actually a library of books. Library is the place with the collection of large number of books. Some libraries will be having a collection of millions of books so their arrangement and maintenance is also important. But it will be very difficult for people search for a particular book among millions and hence it comes up as tedious job. Even the experienced librarians may fail to find a particular book and its location so here is when an android application “Bookopedia” comes into picture.

This app will give readers new ways to show their love for books review them online, keep track of what they read, share photos of their bookshelf with friends, and, of course, discover new books to read.

CHAPTER- 3

SOFTWARE DESIGN

3.1 USE-CASE DIAGRAM:

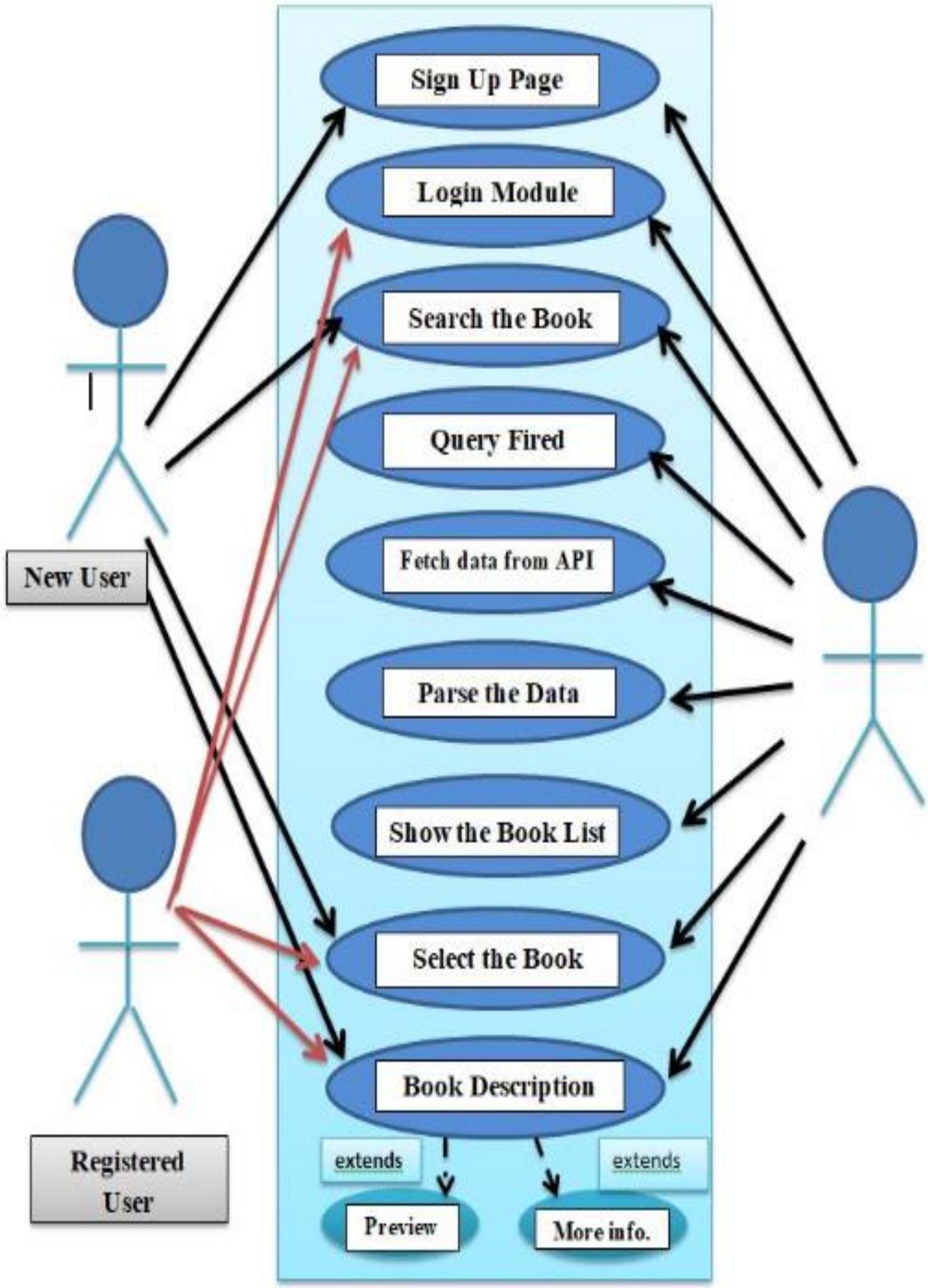


Figure-2: Use–Case Diagram

So the above diagram represents the point of view of the new user, the registered user, and the developer and the arrows to each module show the interactivity of the person.

The New user will first be required to create up a new account so will interact with the “sign-up module” and fill up all the details that will be stored in the database. The next user will land into the dashboard where there will be “search bar” where the user can enter the book he desires to read or any related keyword to the book. The list of book will appear on the screen and the new user will interact with “select the book” module. Then the user can interact with the “Description of the Book” module to read more about the book.

For the registered user, the user will be having the credentials to login and will interact with the “login module” and then the user will enter into the dashboard where there will be “search bar” where the user can enter the book he desires to read or any related keyword to the book. The list of book will appear on the screen and the new user will interact with “select the book” module. Then the user can interact with the “Description of the Book” module to read more about the book.

For the developer he can connect with each and every module mentioned in the use case diagram. Apart from the modules mentioned in use case diagram there are modules like profile, sign out, FAQ and about us section that every registered user can access.

3.2 DATA FOW DIAGRAM

The book list details contain the author name, the book poster, the book genre, and a short review about the book, the price of the book and the link to buy the book. The plus point of this app is it is connected to the Google book API so as soon as a new book is published; it is automatically to the app also.

As soon as the user encounters with the login module, we check the credentials of the user if the credentials are correct as per the database we proceed to the dashboard else if wrong we encounter the forget password module and then mail is sent to the registered mail id. From the dashboard module, we can interact with the favourites section, the profile module, the FAQ Section, The sign out section. On searching the book, from the dash board module, we encounter the check book list activity, checking the book details activity and the published date activity.

The DFD for the Bookopedia is shown below:

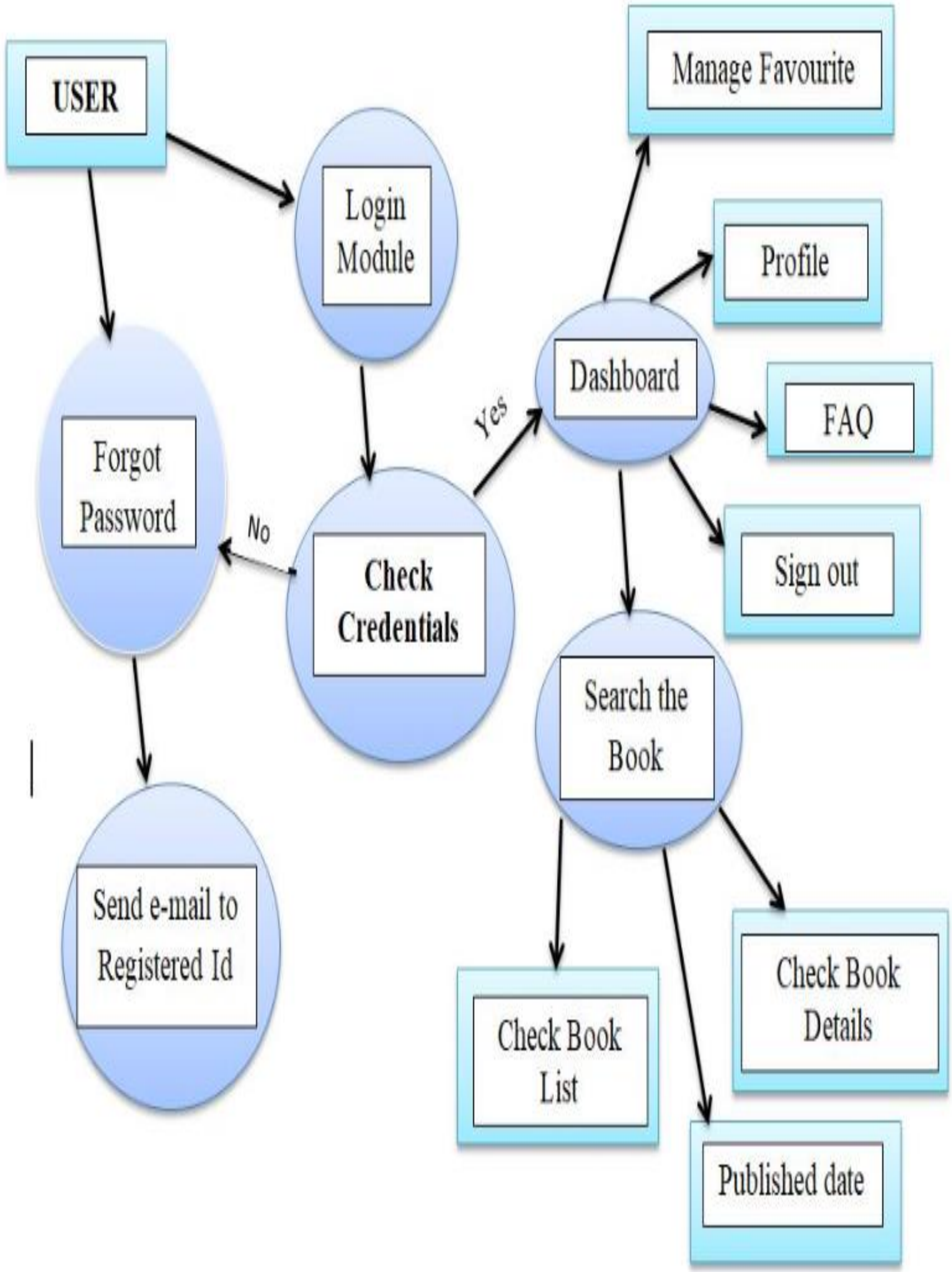


Figure-3: Data Flow Diagram

3.3 SEQUENCE DIAGRAM

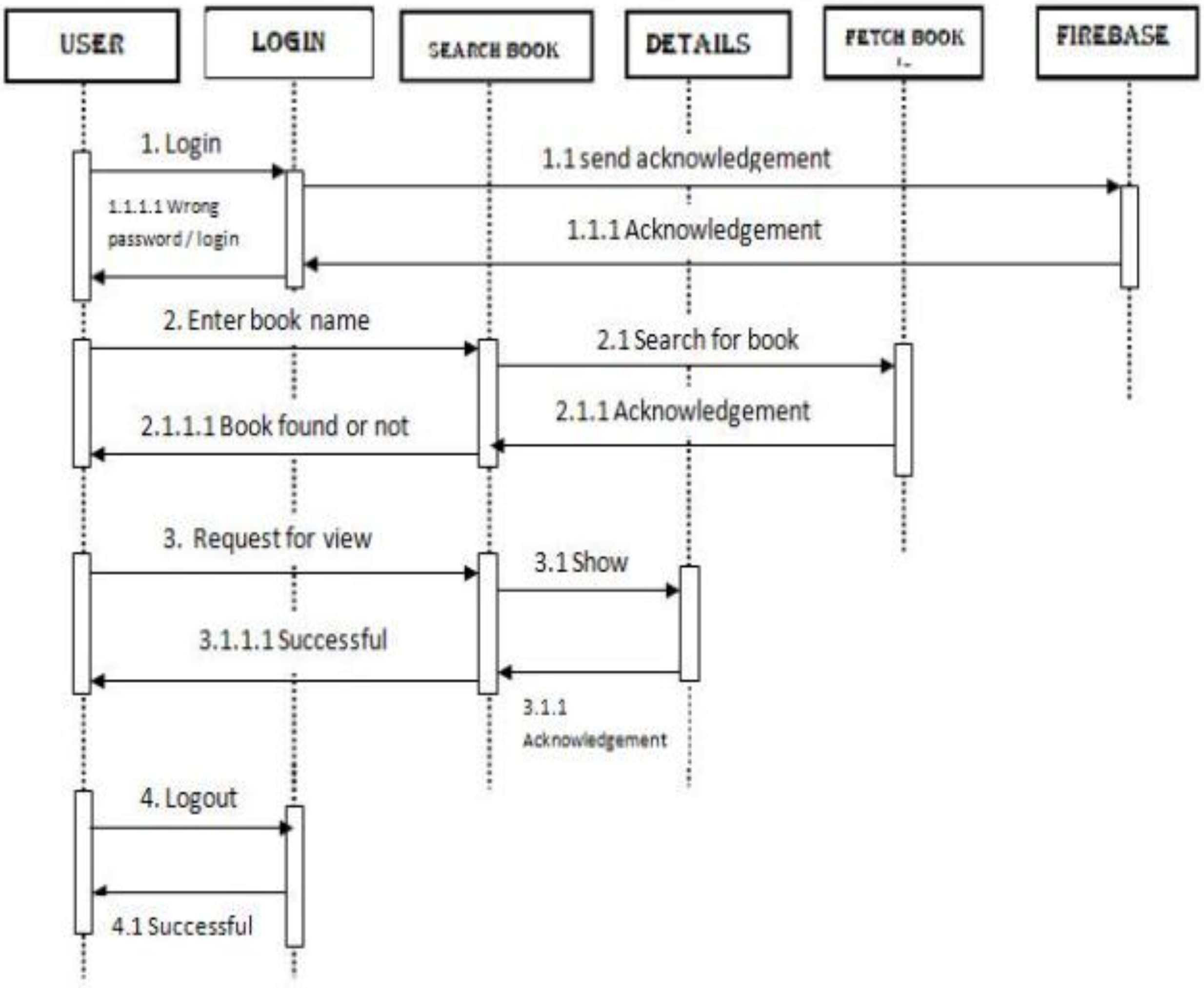


Figure-4: Sequence Diagram

CHAPTER-4
TECHNOLOGY USED

4.1ANDROID

Android is a linux-based operating system designed primarily for touch screen devices such as smart phone tablets and computers. Released in 2008, is now owned by Google. So android is a operating system like Windows, Ubuntu and Mac OS and a lot number of devices use Android these days like mobile phones, watches, laptop and television. So we also created an android application “Bookopedia”, a library of e-books. Play Store is a market place for all the Android Apps. So we need to know what basically an android app is. An Android app is software running on a Android Platform. So this can be concluded that like all the software it is a combination of Backend and Frontend. Backend to design the logical parts of the app, for the functionality whereas Front End to develop the User Interface. And to implement the various parts of the android app, we require a number of tools and technologies which will come into picture. But first it would be great to see the three different type of Android Apps:-

- **Native Apps:** An executable program coded in the machine language of the hardware platform it is running in. **Native applications** are compiled into the machine language of that CPU. For example, **Windows** and Mac executable **apps** are in x86 machine language, while **mobile apps** are ARM based. Native apps are the most common. They're coded in a specific language like Swift for **iOS** or Java for Android. A popular example is WhatsApp.
- **Web Apps:** are accessed via the internet browser and will adapt to whichever device you’re viewing them on. They are not native to a particular system, and don’t need to be downloaded or installed. Due to their responsive nature, they do indeed look and function a lot like mobile apps — and this is where the confusion arises.
- **Hybrid Apps:** Hybrid apps are deployed in a native container that uses a mobile Web View object. When the app is used, this object displays web content thanks to the use of web technologies (CSS, JavaScript, HTML, HTML5).It is in fact displaying web pages from a desktop website that are adapted to a Web View display. The web content can either be displayed as soon as the app is opened or for certain parts of the app only i.e. for the purchase funnel. In order to access a device's hardware features (accelerometer, camera, contacts…) for which the

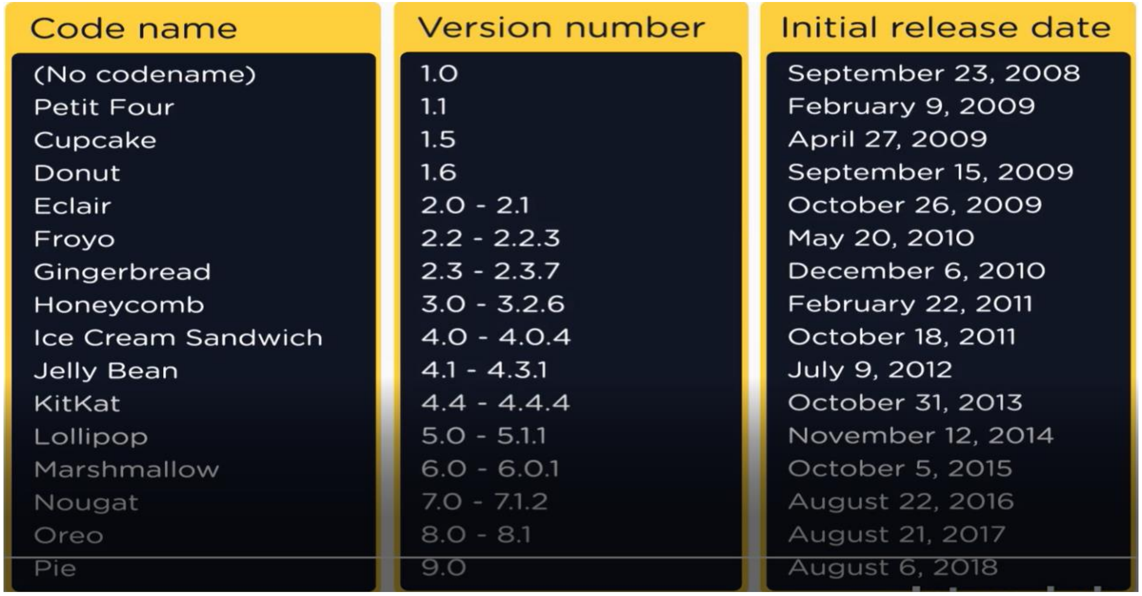
native apps are installed, it is possible to include native elements of each platform's user interfaces (iOS, Android): native code will be used to access the specific features in order to create a seamless user experience. Hybrid apps can also rely on platforms that offer JavaScript APIs if those functionalities are called within a Web View

4.2 VERSION OF ANDROID

Each year Android releases a new version with better features, better security and better User Interface experience and a new symbol. Here is the table of list of versions

.

Figure-5: Android Kitkat



Code name	Version number	Initial release date
(No codename)	1.0	September 23, 2008
Petit Four	1.1	February 9, 2009
Cupcake	1.5	April 27, 2009
Donut	1.6	September 15, 2009
Eclair	2.0 - 2.1	October 26, 2009
Froyo	2.2 - 2.2.3	May 20, 2010
Gingerbread	2.3 - 2.3.7	December 6, 2010
Honeycomb	3.0 - 3.2.6	February 22, 2011
Ice Cream Sandwich	4.0 - 4.0.4	October 18, 2011
Jelly Bean	4.1 - 4.3.1	July 9, 2012
KitKat	4.4 - 4.4.4	October 31, 2013
Lollipop	5.0 - 5.1.1	November 12, 2014
Marshmallow	6.0 - 6.0.1	October 5, 2015
Nougat	7.0 - 7.1.2	August 22, 2016
Oreo	8.0 - 8.1	August 21, 2017
Pie	9.0	August 6, 2018

Table -1: Versions of Android

4.3TOOLS AND LANGUAGES

Tools used to build the Android App are:-

- **Android Studio**: Android Studio is an environment that help us create and edit Android applications. It is the official IDE for Android App Development. It has intelliJ's powerful code editor and developer tools and various features that enhance productivity while developing apps.

- **Software Development Kit (SDK)**: Android Studio requires a collection of libraries and data therefore SDK is mandatory.

Languages used in building an Android Application are classified as per the Front End and Back End. For designing the Front End of an application we have used XML and for designing the Back End we have used Kotlin.

- **XML:** XML is the extensible Markup Language. It is the met language which allows users to define their own customized markup language especially in order to display documents on Internet. It is the language that contains tags that store information. And the tags can be used to present data on the screen.

- **Kotlin:** Kotlin is statically typed programming language based on Java Virtual Machine. Kotlin is the fundamental language of Android since 2017 as declared by Google.Devlopers of Android also prefer to use Java for the backend but Kotlin has a upper-hand due to many features like Java has a length syntax and hence sometimes the code is also redundant. To remove the boiler Plate code, Kotlin is preferred .Kotlin is cross platform, general purpose programming language with type inference. It can inter-operate fully with Java but type inference allow its syntax to be more concise.

4.4 BASIC TERMINOLOGY

- **<u>Layout:</u>** Layout is the parent of view. It arranges all the views in a proper manner on the screen.

- **Activity**: An activity can be referred as your device's screen which you see. User can place UI elements in any order in the created window of user's choice.

- **View**: A view is an UI which occupies rectangular area on the screen to draw and handle user events.

- **Emulator**: An emulator is an Android virtual device through which you can select the target Android version or platform to run and test your developed application.

- **Manifest file**: Manifest file acts as a metadata for every application. This file contains all the essential information about the application like app icon, app name, launcher activity, and required permissions etc.

- **API:** Short for Application Programming Interface. APIs are functions that developers can call on to access specific features by calling upon programs, code, and services that others have written. For example, if a developer wants to draw a button on the screen, she can insert a small bit of code that says "draw this kind of button, with this color and size and style, at this location" instead of dozens of lines of code that tells the graphics processor, in detail, exactly how to draw a button. If the application wants your location, it can use the location API to "get the device's location" and let Google's code handle the rest, instead of requiring the developer to build an entire location service from scratch just for her own app. There are thousands of APIs in Android, covering everything from drawing interface elements, to the cameras, to location access, to accessing storage, to 3D graphics (see: OpenGL ES) and much more.

- **Intent:** Intents are an essential part of the Android ecosystem. They are used to express an action to be performed. Intents allow you to interact with components from the same applications as well as with components contributed by other applications. It can be classified into implicit and explicit intents.

- **Implicit intent:** It does not name a specific component, but instead declare a general action to perform, which allows a component from another app to handle it.
- **Explicit Intent:** It specifies the component to start by name. You'll typically use an explicit intent to start a component in your own app, because you know the class name of the activity or service you want to start.

- **APK**: Short for "Android application package." The extension used in Android app installation files (e.g., app.apk). Similar in nature to an EXE file on Windows.

- **SDK:** Short for "Software Development Kit." As it pertains to Android, the SDK is a set of tools such as code libraries, a debugger, and a handset emulator that can be run on Windows, Mac, or Linux to facilitate the creation of Android apps by developers. While the SDK is generally intended for use by developers, end users can install the software on their home computer to execute ADB and Fast boot commands.

- **Action Bar**: The action bar is an important design element, usually at the top of each screen in an app that provides a consistent familiar look between Android apps. It is used to provide better user interaction and experience by supporting easy navigation through tabs and drop-down lists.

- **Navigation bar**: Android Navigation Drawer is a sliding left menu that is used to display the important links in the application. Navigation drawer makes it easy to navigate to and fro between those links. It's not visible by default and it needs to opened either by sliding from left or clicking its icon in the Action Bar.

- **Fragment**: A Fragment represents a behavior or a portion of user interface in a Fragment Activity. You can combine multiple fragments in a single activity to build a multi-pane UI and reuse a fragment in multiple activities.

- **Firebase** is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop quality apps, grow their user base, and earn profit. It is built on Google's infrastructure. Firebase is categorized as a NoSQL database program, which stores data in JSON-like documents. Firebase has three core services: a real-time database, user authentication and hosting. With the Firebase iOS SDK, you can use these services to create apps without writing any server code.

JSON stands for JavaScript Object Notation. It is an independent data exchange format and is the best alternative for XML. JSON is used for data interchange (posting and retrieving) from the server. Hence knowing the syntax and it’s usability is important. JSON is the best alternative for XML and its more readable by human

CHAPTER -5

IMPLEMENTATION AND USER INTERFACE

Creating an app concept design with screen sketches and functional flow diagrams is the best way to communicate your vision to the mobile app developer. Making the concept clear to the developer is probably the most important factor in successful mobile app development. Yet it is one of the most common problems or obstacles in a mobile app development outsourcing project.

No matter what the marketing and profit goals are or if you are outsourcing an app for your personal use, you need to fully design and document the app concept if you expect a programmer to make your vision a reality. Developers are not mind readers and even descriptions given during conversations can be very fleeting or interpreted differently. Fully documenting your concept, therefore, leaves little to chance. The two most important things to do are: A) make a comprehensive description of how the app works and what it does (functionality) and B) create a comprehensive description of what the user sees and does (look and feel).

5.1 Implementation of the Bookopedia:

Implementation of Bookopedia is taken place in various phases. Firstly we build the login interface then Navigation drawer i.e. make fragment for each of the list item using the Navigation view and the make various layout for the supporting features and connect the app with the Google API for fetch the required book. And finally we parse the Jason object to get the data in the required format and then display the result.

5.1.1 Step to be followed to develop the app:

1. Firstly we create the splash screen with animated text using XML and linked it with the main Activity through Kotlin.
2. After that we create login phase which comprises of various phases that are mentioned below:
    - Login Page: allows user to login into the app if the user is existing one
    - Register Page: If the user is new to our app then firstly he/she have to register themselves on the app.

- Forgot Password: allows user to reset the password if it forget the previous password.
- **For authenticating the user we have used firebase authentication**.

3. Now, we are going to create Navigation drawer for that purpose we have used following functionality of android:
    - Fragments(SupportFramentManager)
    - Menu – items
    - Drawer header
    - Hamburger icon
    - ActionBarDrawableToggle (help to create navigation Bar)
4. .Creating fragment for each of the menu item. Our Menu items are:
    - Dashboard
    - Profile
    - About App
    - FAQ
    - Favourites
    - Sign-Out
5. Now we have created various activities like Book List, Book Description and many more.
6. In this step we connect our app with the GOOGLE BOOK API using Volley (Volley is an HTTP library that makes networking for Android apps easier and most importantly, faster).
7. After that we parse the JASON object that we have received as a response for our query to get the data in the standard form.
8. Now we add data (that we have received from Google API) to the book description activity .
9. In the description Activity there are various functionality. Some of them are mentioned below
    - Preview: We have set OnClickListener to this. With the help of this if user clicks on this button it will redirect the user to the Google book page on Google.
    - Buy Here: It will allow user to purchase that book and redirect the user to the buying page.
    - Favourites: it will add the book to the favourites that you can read to later.

Flow Chart for the User is given below:

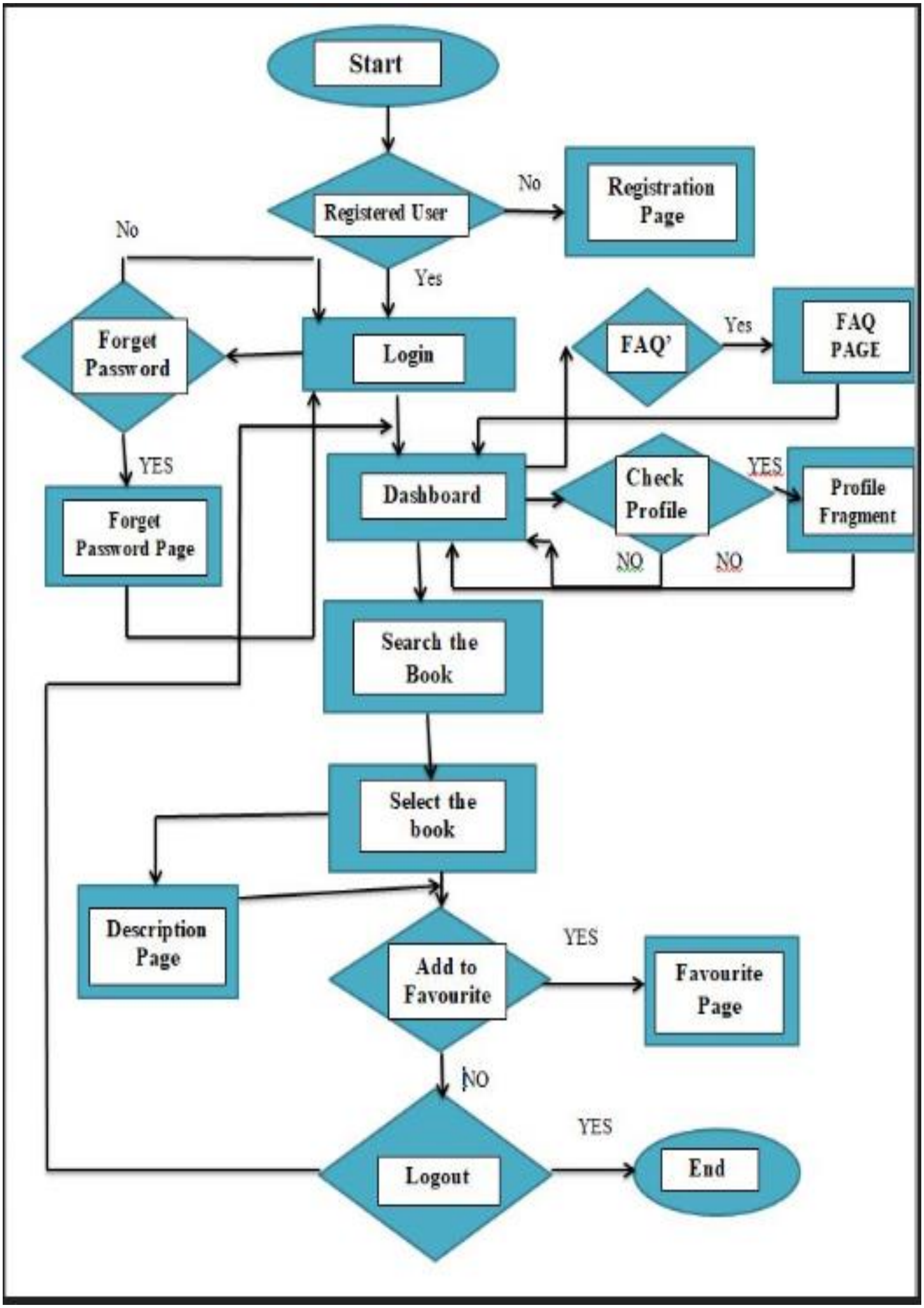


Figure-6: Flow Chart for User

5.1.2 Step to be followed by the user

1. Firstly, we have build splash activity to start the application.
2. Then, we have the Login activity which consists of following steps
   - Register : for new User
   - Login: For existing as well as new user
   - Forgot Password: To reset your password
3. We authenticate and store the user information from the Firebase authentication.
4. After that, we made a Drawer layout of our Bookopedia app which includes various functionality
   - Profile Fragment: To check the profile and update the database.
   - Dashboard Fragment: Show the book on the genre basis and it is open by default.
   - Favourite: To see the favourites book that you have added or you found interesting.
   - FAQ's Fragment: It comprises all the frequently asked questions.
   - About App : Information about the app
   - Sign-out Fragment: Remove/logout you from the app.
5. In Dashboard fragment we also include the search bar in which the user can search for the books of their interest.
6. After that list of book according to your search will appear
7. Select the book according to your choice.
8. Then the description page of the book will appear. It comprises of the following things:
   - Author's Name
   - Publisher's Name
   - Published Date
   - Languages
   - Rating
   - Price
   - Preview
9. If you want to add the book into favourites then in the description page Add to Favourites option is also given. You can see the books that are added in the favourite into navigation Drawer menu item favourites.
10. Now you can enjoy the reading of your favourite book.

5.2 User Interface

- **Splash Screen**

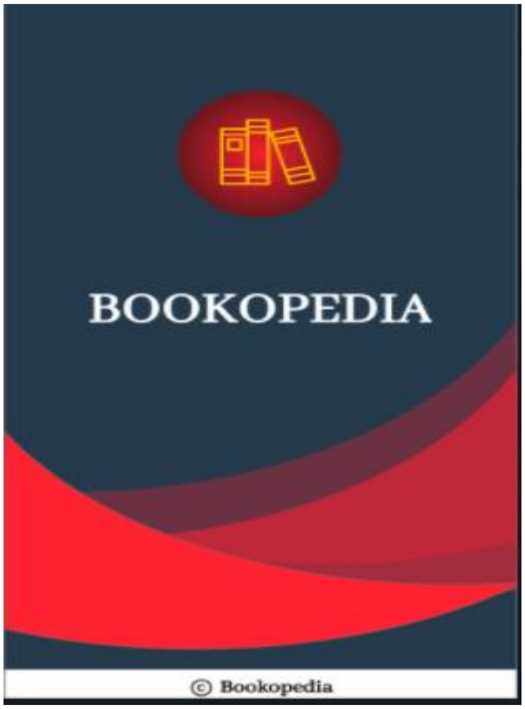


Figure-7: Splash Screen

- **Register Page**

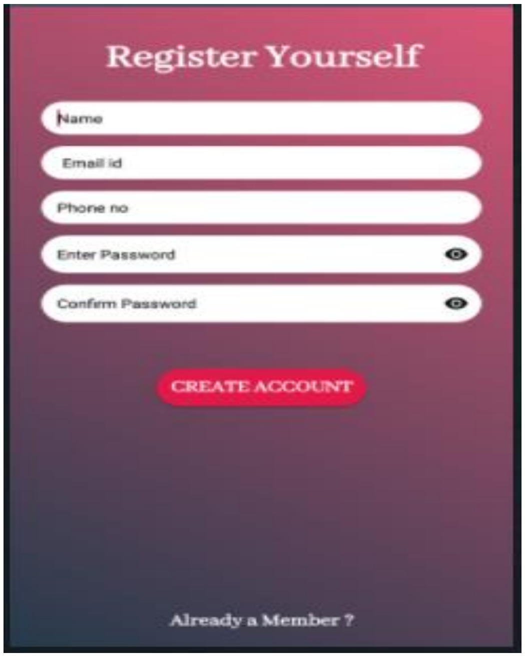
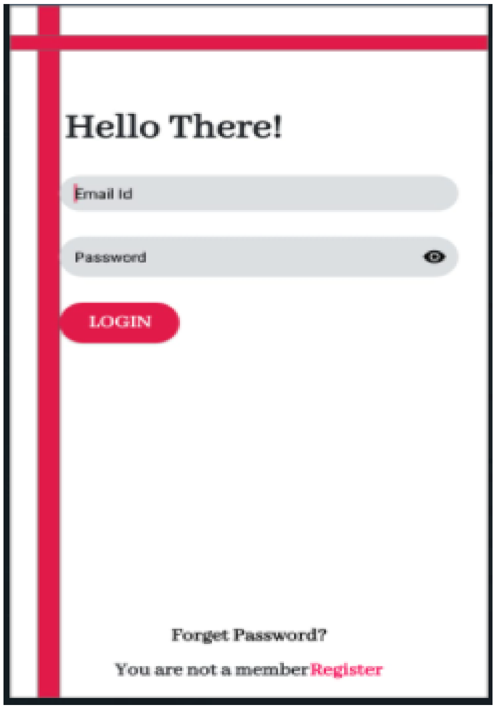


Figure-8: Register Page

- **Login Page**



Hello There!

Email Id

Password

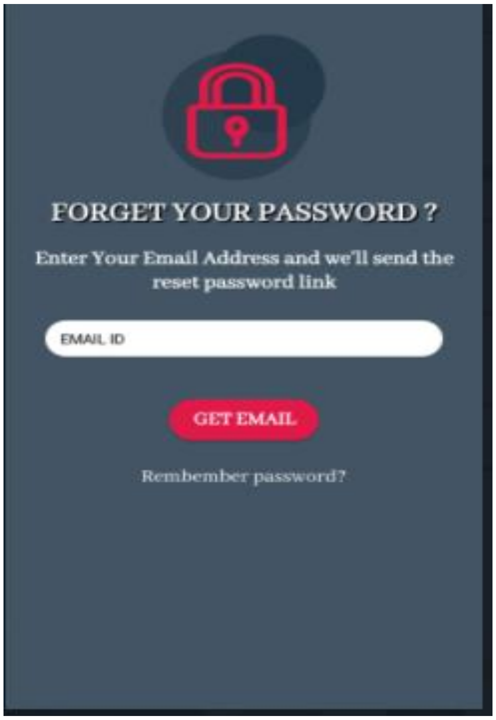
LOGIN

Forget Password?

You are not a memberRegister

Figure-9: Login Page

- **Forgot Password**



FORGET YOUR PASSWORD ?

Enter Your Email Address and we'll send the reset password link

EMAIL ID

GET EMAIL

Rembember password?

Figure-10: Forget Password

- **Navigation Drawer**

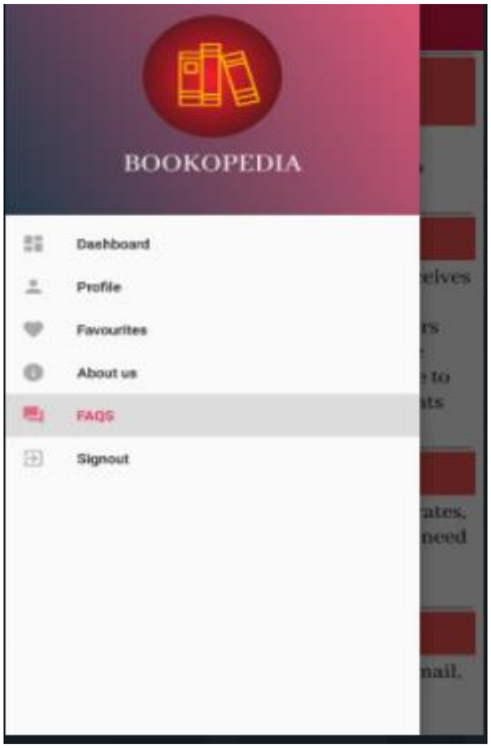
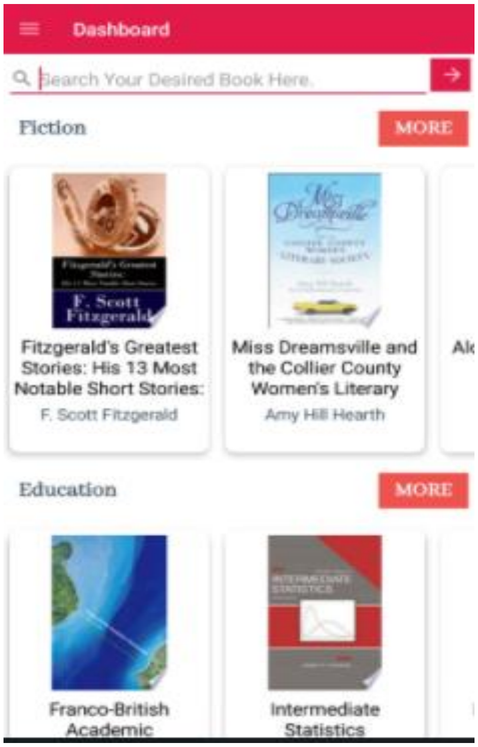


Figure-11: Navigation Drawer

- **Dashboard Fragment**



Fitzgerald's Greatest Stories: His 13 Most Notable Short Stories:
F. Scott Fitzgerald

Miss Dreamsville and the Collier County Women's Literary
Amy Hill Hearth

Franco-British Academic

Intermediate Statistics

Figure-12: Dashboard Fragment (A)

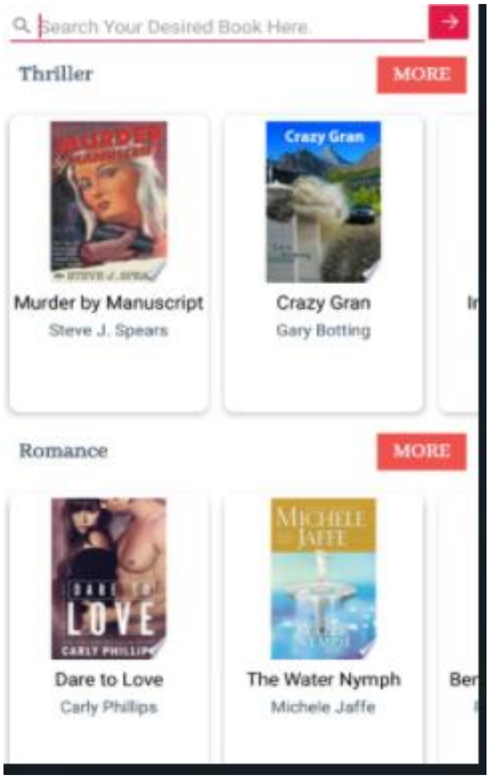
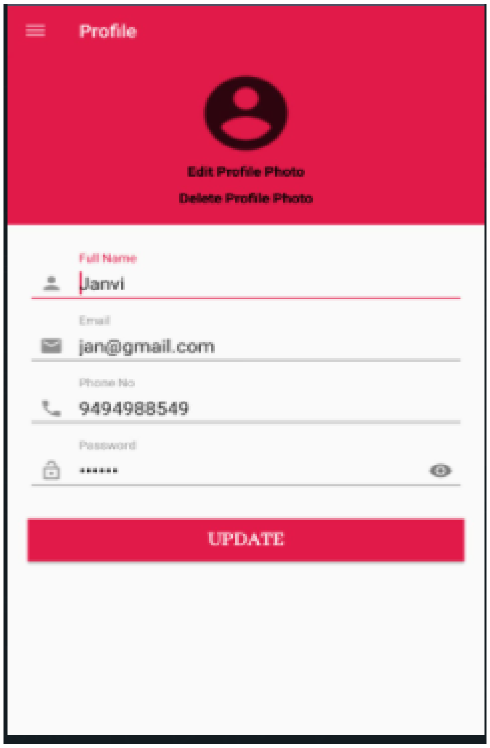


Figure-13: Dashboard Fragment (B)

- **Profile**



Full Name
Janvi

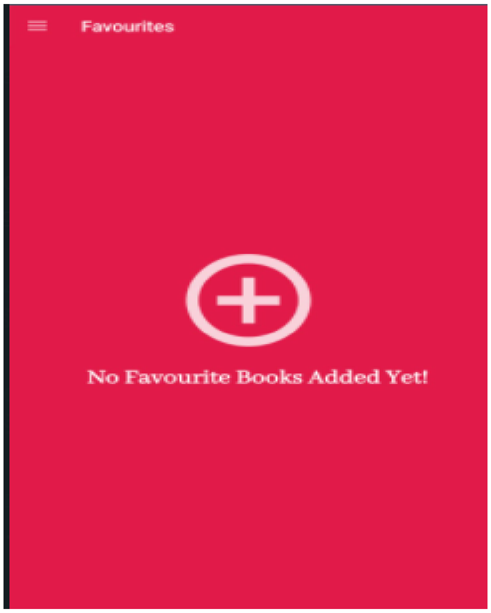
Email
jan@gmail.com

Phone No
9494988549

Password
••••••

Figure-14: Profile page

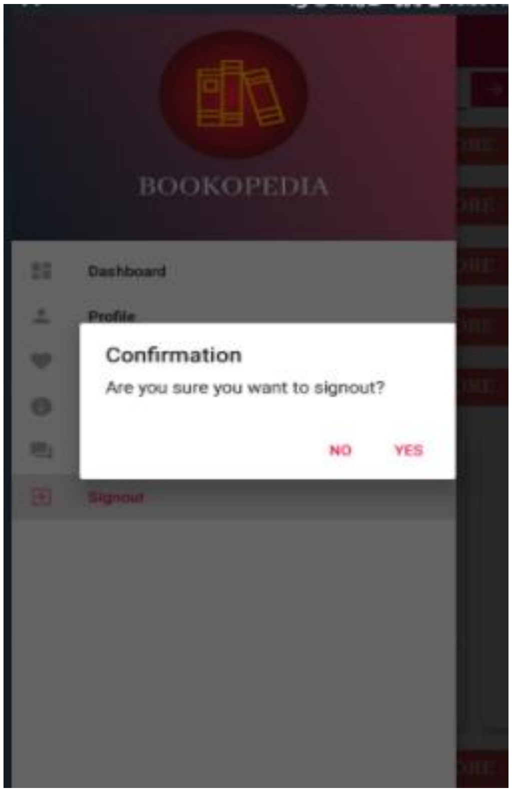
- **Favourites Page**



No Favourite Books Added Yet!

Figure-15: Favourite Page

- **Sign-Out Page:**

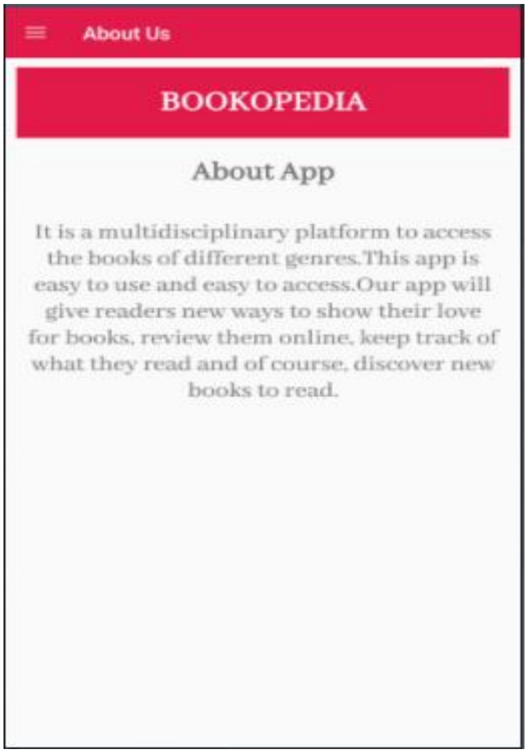


Confirmation

Are you sure you want to signout?

Figure-16: Sign-out page

- **About App**



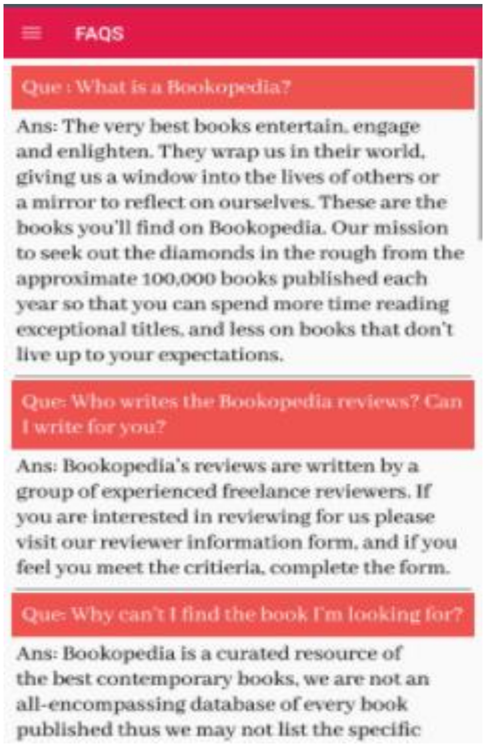
BOOKOPEDIA

About App

It is a multidisciplinary platform to access the books of different genres.This app is easy to use and easy to access.Our app will give readers new ways to show their love for books, review them online, keep track of what they read and of course, discover new books to read.

Figure-17: About App

- **FAQ's**



Que : What is a Bookopedia?

Ans: The very best books entertain, engage and enlighten. They wrap us in their world, giving us a window into the lives of others or a mirror to reflect on ourselves. These are the books you'll find on Bookopedia. Our mission to seek out the diamonds in the rough from the approximate 100,000 books published each year so that you can spend more time reading exceptional titles, and less on books that don't live up to your expectations.

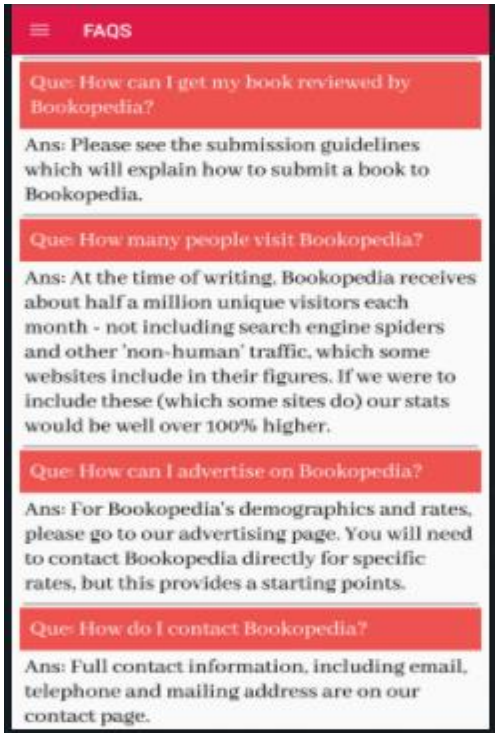
Que: Who writes the Bookopedia reviews? Can I write for you?

Ans: Bookopedia's reviews are written by a group of experienced freelance reviewers. If you are interested in reviewing for us please visit our reviewer information form, and if you feel you meet the critieria, complete the form.

Que: Why can't I find the book I'm looking for?

Ans: Bookopedia is a curated resource of the best contemporary books, we are not an all-encompassing database of every book published thus we may not list the specific

Figure-18: FAQ's (a)



Que: How can I get my book reviewed by Bookopedia?

Ans: Please see the submission guidelines which will explain how to submit a book to Bookopedia.

Que: How many people visit Bookopedia?

Ans: At the time of writing, Bookopedia receives about half a million unique visitors each month - not including search engine spiders and other 'non-human' traffic, which some websites include in their figures. If we were to include these (which some sites do) our stats would be well over 100% higher.

Que: How can I advertise on Bookopedia?

Ans: For Bookopedia's demographics and rates, please go to our advertising page. You will need to contact Bookopedia directly for specific rates, but this provides a starting points.

Que: How do I contact Bookopedia?

Ans: Full contact information, including email, telephone and mailing address are on our contact page.

Figure-19: FAQ's (b)

- ## Search Book

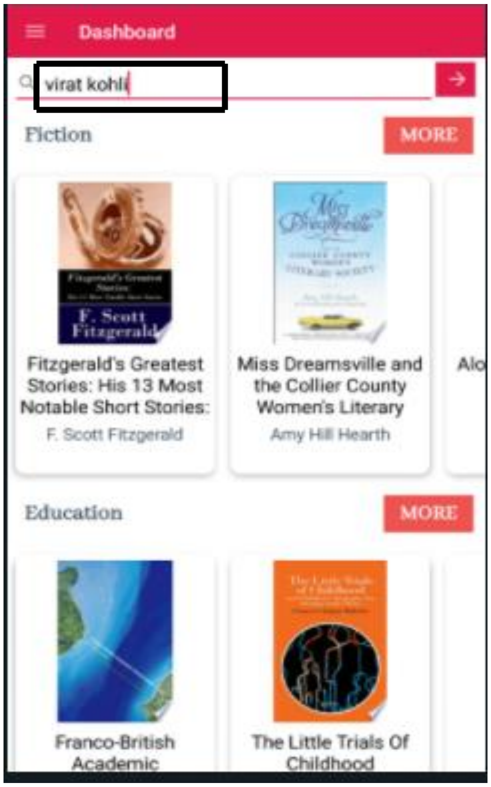
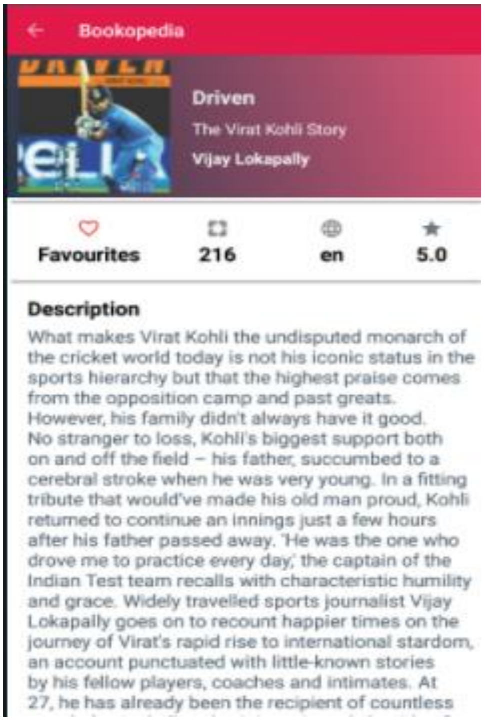

Dashboard
virat kohli
Fiction
MORE
Fitzgerald's Greatest Stories: His 13 Most Notable Short Stories:
F. Scott Fitzgerald
Miss Dreamsville and the Collier County Women's Literary
Amy Hill Hearth
Alo
Education
MORE
Franco-British Academic
The Little Trials Of Childhood

Figure-20: Search book

- **Description Page**



Driven

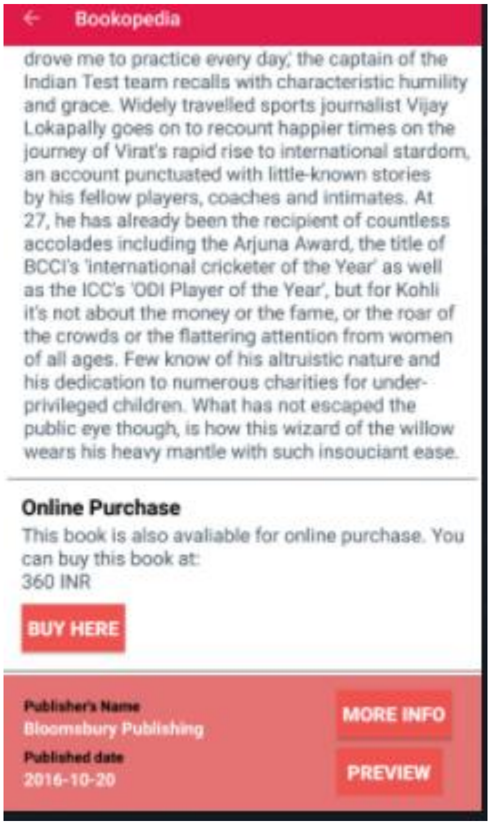
The Virat Kohli Story

Vijay Lokapally

Description

What makes Virat Kohli the undisputed monarch of the cricket world today is not his iconic status in the sports hierarchy but that the highest praise comes from the opposition camp and past greats. However, his family didn't always have it good. No stranger to loss, Kohli's biggest support both on and off the field – his father, succumbed to a cerebral stroke when he was very young. In a fitting tribute that would've made his old man proud, Kohli returned to continue an innings just a few hours after his father passed away. 'He was the one who drove me to practice every day,' the captain of the Indian Test team recalls with characteristic humility and grace. Widely travelled sports journalist Vijay Lokapally goes on to recount happier times on the journey of Virat's rapid rise to international stardom, an account punctuated with little-known stories by his fellow players, coaches and intimates. At 27, he has already been the recipient of countless

Figure-21: Description Page(a)



drove me to practice every day,' the captain of the Indian Test team recalls with characteristic humility and grace. Widely travelled sports journalist Vijay Lokapally goes on to recount happier times on the journey of Virat's rapid rise to international stardom, an account punctuated with little-known stories by his fellow players, coaches and intimates. At 27, he has already been the recipient of countless accolades including the Arjuna Award, the title of BCCI's 'International cricketer of the Year' as well as the ICC's 'ODI Player of the Year', but for Kohli it's not about the money or the fame, or the roar of the crowds or the flattering attention from women of all ages. Few know of his altruistic nature and his dedication to numerous charities for under-privileged children. What has not escaped the public eye though, is how this wizard of the willow wears his heavy mantle with such insouciant ease.

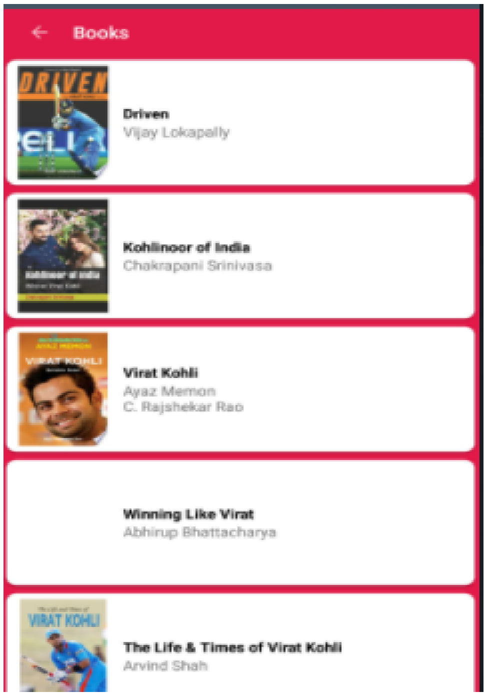
Online Purchase

This book is also avaliable for online purchase. You can buy this book at:
360 INR

Publisher's Name
Bloomsbury Publishing
Published date
2016-10-20

Figure-22: Description Page (b)

- **Book List**



Driven
Vijay Lokapally

Kohlinoor of India
Chakrapani Srinivasa

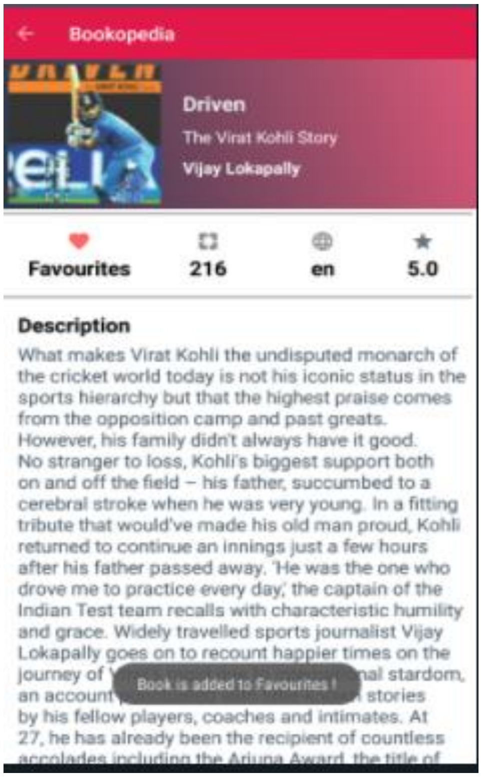
Virat Kohli
Ayaz Memon
C. Rajshekar Rao

Winning Like Virat
Abhirup Bhattacharya

The Life & Times of Virat Kohli
Arvind Shah

Figure-23: Book List

- **Adding book to the favourites**



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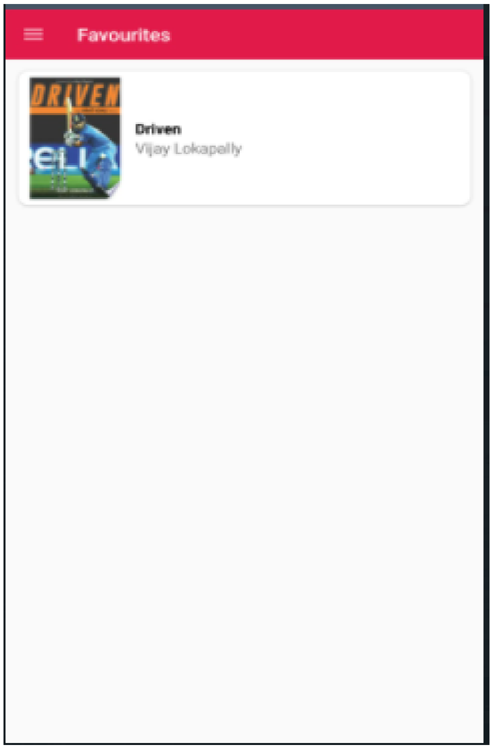
Book is added to Favourites !

Figure-24: Adding book to the Favourites

- **Favourites**

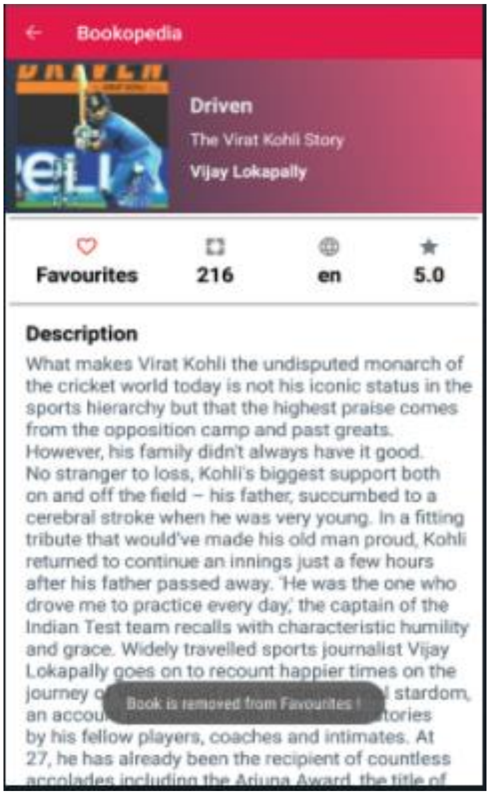


Driven

Vijay Lokapally

Figure-25: Showing Favourites

- **Book Removed from Favourites**



Driven

The Virat Kohli Story

Vijay Lokapally

Description

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Book is removed from Favourites !

Figure-26: Book Removed

CHAPTER - 6

TESTING

Once source code has been generated, software must be tested to uncover as many errors as possible before delivery. It is very important to work the system successfully and achieve high quality of software. Testing include designing a series of test cases that have a high likelihood of finding errors by applying software-testing techniques.

System testing makes logical assumptions that if all the parts of the system are correct, the goal will be successfully achieved. The system should be checked logically. Validations and cross checks should be there. Avoid duplications of record that cause redundancy of data.

In other Words, Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

The Android framework includes an integrated testing framework that helps you test all aspects of your application and the SDK tools include tools for setting up and running test applications. Whether you are working in Eclipse with ADT or working from the command line, the SDK tools help you set up and run your tests within an emulator or the device you are targeting.

There are different types of testing some of them are listed below:

6.1 Installation Testing:

There are two types of apps on an Android device i.e., Pre-installed applications and the applications which are installed later by the user.

For both of the above, installation testing is carried out by our teammates. It is ensuring smooth installation of the application without ending up in errors, partial installation etc.

6.2 Unit Testing

It focuses on smallest unit of software design. In this we test an individual unit or groups of inter related units. It is often done by programmer by using sample input and observing its corresponding outputs. In this testing technique we are primarily focuses on

- Loop methods and function is working fine or not.
- Misunderstood or incorrect Arithmetic precedence
- Incorrect Initialization

Unit Testing of the app:

Test cases	**Description**	**Expected Outcome**	**Result**
1	Start Page – Launch Screen	Should display splash screen with animated text	Pass
2	Register Screen	Should display register activity where you need to fill the required details	Pass

3	Login Screen	Should display login screen And ask for your credentials.	Pass
4	Forget Password	Should Receive mail to reset the password	Pass
5	FAQ	Should display the Frequently asked question	Pass
6	View Favorites	Should display the Favourite activity	Pass

7	Profile	Should display the information that you have entered	Pass
8	View Books	View Home Page	Pass
9	Search bar	Should give the details of the books that you have searched	Pass
10	View Book Description page	Should show the information of the displayed book	Pass

11	Add to favourites	Should add the selected book into the favourites	Pass
12	Clear Favourites	Should remove the selected book from the favourites	Pass
13	Preview	Should display the preview of the book	Pass
14	Logout	Sign out you from the app	Pass

Table 1: Unit Testing of Bookopedia

6.3 User Testing

User testing is the process through which the interface and functions of a website, app, product, or service are tested by real users who perform specific tasks in realistic conditions. The purpose of this process is to evaluate the usability of that website or app and to decide whether the product is ready to be launched for real users.

This app was tested by our team mates and friends who are using different mobile phones (and having different android version) also tested on different emulator to check its performance and it seems to be working fine and users of this app are satisfied with the facilities and performance of the app and like the way how the app is worked.

6.4 Performance Testing

In this type of testing we have checked the performances of our application under some peculiar conditions are checked. Those conditions include:

- Low memory in the device.
- The battery in extremely at a low level.
- Poor/Bad network reception.

Performance is basically tested from 2 ends, application end, and the application server end. Our app is also performing well in this phase of testing as well. And we are getting positive feedback from user of our app.

6.5 Compability Testing

This application was tested and used on different devices like LG G3, Google Nexus 4. The application worked fine and is stable. The application worked fine in portrait mode and there isn't any problem with compatibility.

On all types of testing (that we have performed above) our performing well on our app i.e. Bookopedia.

CHAPTER -7

CONCLUSION

Proposed Bookopedia App is an android application that will allow users to search for books by title, author name or subject name. This application takes in a user input and searches the Google Books API with the user input and gets a list of published books based on the users search query. Search result screen will contain a list of book with following details: Author of the Book, title, average, rating Price of the Book. To get the information of the particular book user can click upon the book from the list and then will be taken to the new tab where description and other information related to the book will be available. Users can also add the book to the favourites.

This application has wide range of scope in the upcoming era. It is impossible to arrange the hard copies of every book so this type of application can reduce the barrier to get knowledge at any place in a cost effective, productive way. For students who are interested in learning online can use this application and keep all the books they want to learn from at one place (in favourites section) and can create their own personal E-library. Even individual book stores can have this system of book apps promoting their brand name as Digital Marketing and can gain number of customers.

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6. **Internshala:**

   https://trainings.internshala.com/

7. **Android developer Guide:**

   https://developer.android.com/

8. **For rectifying the error :**

   https://stackoverflow.com/