WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

SGU Library – Sanjay Ghodawat University Library

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A B S T R A C T

The main objective of this project is to provide the hand free access to the library portal through Android Application. This project of "SGU Library" gives us the complete information about the library. "SGU Library" is a free search engine which allows you to search, preview and download Books, files into your devices. An ebook (short for electronic book), also known as an e-book or eBook, is a book publication made available in digital form, consisting of text, images, or both, readable on the flat-panel display of computers or other electronic devices. Although sometimes defined as "an electronic version of a printed book", some e-books exist without a printed equivalent. Ebooks can be read on dedicated e-reader devices, but also on any computer device that features a controllable viewing screen, including desktop computers, laptops, tablets and smartphones. eBooks are portable and lightweight, making it easy to carry around. Instead of carrying multiple bulky books, one eBook reader can hold thousands of eBooks. It saves a lot of space- in your home and in your bag. One doesn't have to worry about the storage limit.

Keywords: SGU Library, SGI Ebook, SGU Digital Book,

1. Introduction

An Android library is structurally the same as an Android app module., It has user Friendly Interface. It is ebook android application, it provide online ebooks for free. This application is simple for searching and reading ebooks.It provides different categories and within categories such as Pharamacy, Polytechnic, MBA etc within which user can find required books.

1.1. Environment

The purpose of SGU library application helps in maintaining data of books issued to learners and books available in the library. It helps in keeping track of the books, catalogues, magazines. This allows user to easily check the diploma and engineering ebooks. Thus the application system allows user to easily login and access a application to read and download ebooks.

Lower Costs of Production : You should consider eBook because their cost of production is low. You do not need to pay for materials such as ink and paper. Even the labor costs will be much lower. Because of the much lower costs of production associated with eBooks, you may also be able to distribute them free of charge. It will therefore be easier for you to cut down your book prices and make them more accessible to your target audience. When done right, the large volume of E-book you sell will help raise your profit margins.

1.2. Benifits Of Ebook Library

1. One Device, Many Books
2. EBooks are portable and lightweight
3. making it easy to carry around
4. Accessible Everywhere
5. Easily Updates

6. Shareable Content
7. Augmented Reality Experience
8. Easy on the Eyes
9. Read Aloud Feature
10. Interactive Elements

1.3. Purpose

1. Lower Costs of Production : You should consider eBook because their cost of production is low. You do not need to pay for materials such as ink and paper. Even the labor costs will be much lower.

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4. Global reach: The Internet has no boundaries. For that reason, your eBooks have a higher chance of achieving global fame since they can be accessed from anywhere in the world.

2. Literature Review

The early digital library projects arose out of the traditional library environment. The Internet gave new possibilities for global information sharing. Early digital library projects gradually moved to the web environment. Examples of these transitional digital library projects include: Project Mercury sponsored by Carnegie Mellon University, the Perseus Digital Library, the Chemistry Online Retrieval Experiment (CORE), Elsevier's TULIP project, and the Envision Project. Following is a discussion of two digital library projects that represent a focus on humanities and science in this period of time: The Perseus Digital Library and the CORE project.

1. DRDO eLibrary - Defance Research And Development Organisation (31 January 2021) Offered By Refread.com, DRDO eLibrary App serves its users with mobile, on-the go access of a massive collection of over 200,000+ eResources and information feeds including: Top, peer reviewed eJournals, eBooks from world class publishers, 1000s of open access resources from web.

2. KLMDCW eLibrary. K.L. MEHTA DAYANAND COLLAGE Library (18 December 2020) Offered By Refread.com KLMDCW eLibrary App serves its users with mobile, on-the go access of a massive collection of over 500,000+ eResources and information feeds including.

3. Bennett University eLibrary (20 September 2020) Offered ByRefread. com, Bennett University eLibrary App serves its users with mobile, on-the go access of a massive collection of over 200,000+ eResources and information feeds including: - Top, peer reviewed eJournals - eBooks from world class publishers - 1000s of open access resources from web - Literature for leisure reading

4. ePathshala (27 May 2020) Offered By NCERT The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The ePathshala, a joint initiative of Ministry of Education(MoE), Govt. of India and National Council of Educational Research and Training (NCERT) has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other digital resources. Sanjay

3. Scope Of Project

3.1 Objective

- To collect, organize collate print digital information disseminate at the point of care and for future use.
- To provide seamless access to information
- To act as gateway to digital and electronic information
- To develop in to a single access point library.
- To create and update a comprehensive database of SGU in the field of Ebooks.

3.2 Scope Of Project

The goal of the Ebook library is to assist users by satisfying their needs and requirements for management, access, storage, and manipulation of the variety

of information stored in the collection of material that represents the ”holdings” of the library. Users may be humans or they may be automated processes acting on behalf of or in support of human needs. Users also vary and include those who are ”end” users (those not involved in the management and operation of the library but rather are the customers), library operators, and information ”producers” who want their material available through the library.

4. Core Technology

4.1 Designing

The Android platform contains a large number of shared Java libraries that can optionally be included in the classpath of apps with the ¡uses-library¿ tag in the app manifest. Apps link against these libraries, so treat them like the rest of the Android API in terms of compatibility, API review, and tooling support. Note, however, that most libraries don’t have these features.

The mobile edition of Java is called Java ME. Java ME is based on Java SE and is supported by most smartphones and tablets. The Java Platform Micro Edition (Java ME) provides a flexible, secure environment for building and executing applications that are targeted at embedded and mobile devices. The applications that are built using Java ME are portable, secure, and can take advantage of the native capabilities of the device. Java ME addresses the constraints that are involved in building applications that are targeted at mobile devices. In essence, Java ME addresses the challenge of executing applications on devices that are low on available memory, display, and power.

Component Used In Project:

BUTTON: A button is basically a control component with a label that generates an event when pushed

CARD VIEW: Card View organizes content into a grid of cards. Card View is useful for displaying a small to moderate amount of content in a way that is not visually overwhelming.

TEXT VIEW: A Text View displays text to the user and optionally allows them to edit it. A TextView is a complete text editor, however the basic class is configured to not allow editing.

IMAGE VIEW: The Image View is a Node used for painting images loaded with Image class. This class allows resizing the displayed image and specifying a viewport into the source image for restricting the pixels displayed by this ImageView .

TIME: A clock providing access to the current instant, date and time using a time-zone. Duration. A time-based amount of time

DATE: The Date in Java is not only a data type, like int or float, but a class. This means it has its own methods available for use.

CHECK BOX: It is used to turn an option on (true) or off (false). Clicking on a CheckBox changes its state from ”on” to ”off” or from ”off” to ”on ”. It inherits JToggleButton class.

RADIO BUTTON: Radio buttons are groups of buttons in which, by convention, only one button at a time can be selected.

4.2. Development

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A Java program is a collection of objects, and these objects communicate through method calls to each other to work together. Here is a brief discussion on the Classes and Objects, Method, Instance variables, syntax, and semantics of Java.

SYNTAX:
public class Main {
publicstatic void main (String[ ]args){
System.out.println (" Hello World") ;
}
}

4.3 Android Studio

Android Studio is the official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.Android Studio provides a unified environment where you can build apps for Android phones, tablets, Android Wear, Android TV, and Android Auto. Structured code modules allow you to divide your project into units of functionality that you can independently build, test, and debug.

Android Studio uses an Instant Push feature to push code and resource changes to a running application. A code editor assists the developer with writing code and offering code completion, refraction, and analysis. Applications built in Android Studio are then compiled into the APK format for submission to the Google Play Store. The software was first announced at Google I/O in May 2013, and the first stable build was released in December 2014. Android Studio is available for Mac, Windows, and Linux desktop platforms. It replaced Eclipse Android Development Tools (ADT) as the primary IDE for Android application development.

1. Activities:
Activities are said to be the presentation layer of our applications. The UI of our application is built around one or more extensions of the Activity class. By using Fragments and Views, activities set the layout and display the output and also respond to the user's actions. An activity is implemented as a subclass of class Activity.

2. Services:
Services are like invisible workers of our app. These components run at the backend, updating your data sources and Activities, triggering Notification, and also broadcast Intents. They also perform some tasks when applications are not active. A service can be used as a subclass of class
Service

3. Content Providers:
It is used to manage and persist the application data also typically interacts with the SQL database. They are also responsible for sharing the data beyond the application boundaries. The Content Providers of a particular application can be configured to allow access from other applications, and the Content Providers exposed by other applications can also be configured. A content provider should be a sub-class of the class ContentProvider

4. Broadcast Receivers:
They are known to be intent listeners as they enable your application to listen to the Intents that satisfy the matching criteria specified by us. Broadcast Receivers make our application react to any received Intent thereby making them perfect for creating event-driven applications.

5. Database

Airtable is a cloud collaboration service headquartered in San Francisco. It was founded in 2012 by Howie Liu, Andrew Ofstad, and Emmett Nicholas. Airtable is a spreadsheet-database hybrid, with the features of a database but applied to a spreadsheet. The fields in an Airtable table are similar to cells in a spreadsheet, but have types such as 'checkbox', 'phone number', and 'drop-down list', and can reference file attachments like images.Users can create a database, set up column types, add records, link tables to one another, collaborate, sort records and publish views to external websites.

5.1 Features OfAirtable Database Api Interface

After you've created and configured the schema of an Airtable base from the graphical interface, your Airtable base will provide its own API to create, read, update, and destroy records.

- Supports the new batch API.
- Heavily documented (javadoc).
- Customizable HTTP Client (fluent-hc).
- Custom Module: Data Mirroring (e.g. ETL, Lake, MR).
- Airtable reimagines the database with a friendly interface.
- Fields are customizable and bring consistency to your data.

5.2 Implementation

```
// Example Database
Database database = new Database();

AirtableMirror mirror = new AirtableMirror(table, field("PrimaryKey in Airtable")) {
    @Override
    protected Iterator<AirtableRecord> iterator() {
        // Provide an iterator of all your records to mirror over to Airtable.
        Iterator<Database.Data> iterator = database.iterator();

        return new Iterator<AirtableRecord>() {
            @Override
            public boolean hasNext() {
                return iterator.hasNext();
            }

            @Override
            public AirtableRecord next() {
                Database.Data data = iterator.next();

                // Map into AirtableRecord
                AirtableRecord record = new AirtableRecord();
                record.putField("Name", data.name);
                record.putField("Checkbox", data.checkbox);
                ...
                return record;
            }
        };
    }
```

Fig 5.2.1 Implementation OfAirtable Database

5.3 Airtable Data Storing Technique.

JSON
records
0
id : "rechS13YhqXG0nzIJ"
createdTime : "2022-01-21T14:53:06.000Z"
fields
Title : "STEBOOK1"
Thumbnail : "https://cdn.asaha.com/assets/thumbs/ed5/ed59854c54d482b0efb0ee9bebbd7a72.jpg"
URL : "https://drive.google.com/file/d/14QPcsXPyjGu5qhjUSX943iZvd7JH2_SV/preview"
Subject : "STE"
1
id : "rec2cLI2RD8Q7NHUM"
createdTime : "2022-01-21T14:53:06.000Z"
fields
Title : "JPRBOOK1"
Thumbnail : "https://cdn.asaha.com/assets/thumbs/653/653f249a58f438ef343c5da5f023203d.jpg"
URL : "https://drive.google.com/file/d/1jvZ8ERKgHhc9CnSwVKmLZgQOPe31MMvf/preview"
Subject : "JPR"
2
id : "reckChYWoyW8N9qRW"
createdTime : "2022-01-21T14:53:06.000Z"
fields
Title : "AJPBOOK1"
Thumbnail : "https://cdn.asaha.com/assets/thumbs/9b8/9b88b7c17f496a61fc78505130af288e.jpg"
URL : "https://drive.google.com/file/d/108WTlVjM_6rjg0nFTW5nHgwoCliqQqfb/preview"
Subject : "AJP"

Fig 5.3.1 Data Storing

6. Hardware And Software Specification

6.1 Software Configuration

OPERATING SYSTEM : ANDROID V5.0 OR HIGHER.
API LEVEL : MIN - 21 and MAX - 30
FRONT-END LANGUAGES : XML.
BACK-END LANGUAGES : JAVA.
DATABASE :Airtable.

6.2 Hardware Configuration

RAM : 2GB MINIMUM
HARD-DISK : 5GB MINIMUM
OTHER : INTERNET CONNECTION.

6.3 Software Tools

6.3.1 Designing

RESOURCE : Flaticon.Com, Icon8.com
USER INTERFACE : Adobe Photoshop CC 2022 5.3.2

6.3.2 Development

IDE : Android Studio Niotron IDE.
OTHER :Github Library.

7. UML Diagrams

7.1 Flowchart

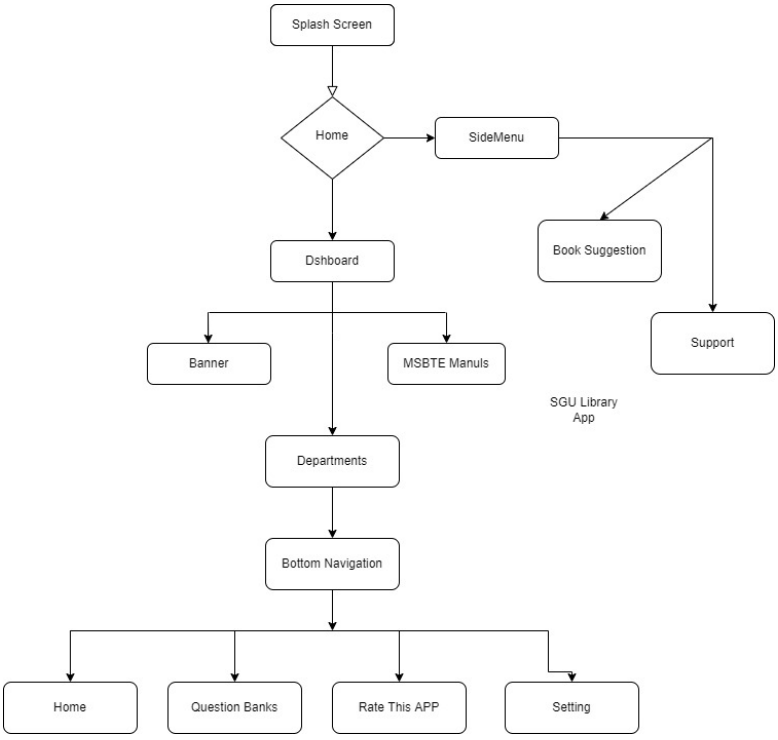

Fig 7.1.1 Flowchart

7.2 Dataflow Diagram

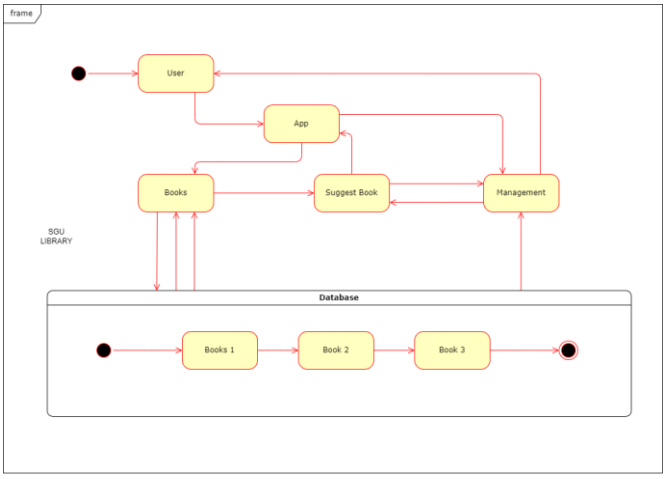

Fig. 7.2.1 Dataflow Diagram

8. Testing

Positive Test Cases

- The positive flow of the functionality must be considered
- Valid inputs must be used for testing
- Must have the positive perception to verify whether the requirements are justified.

9. Snapshots

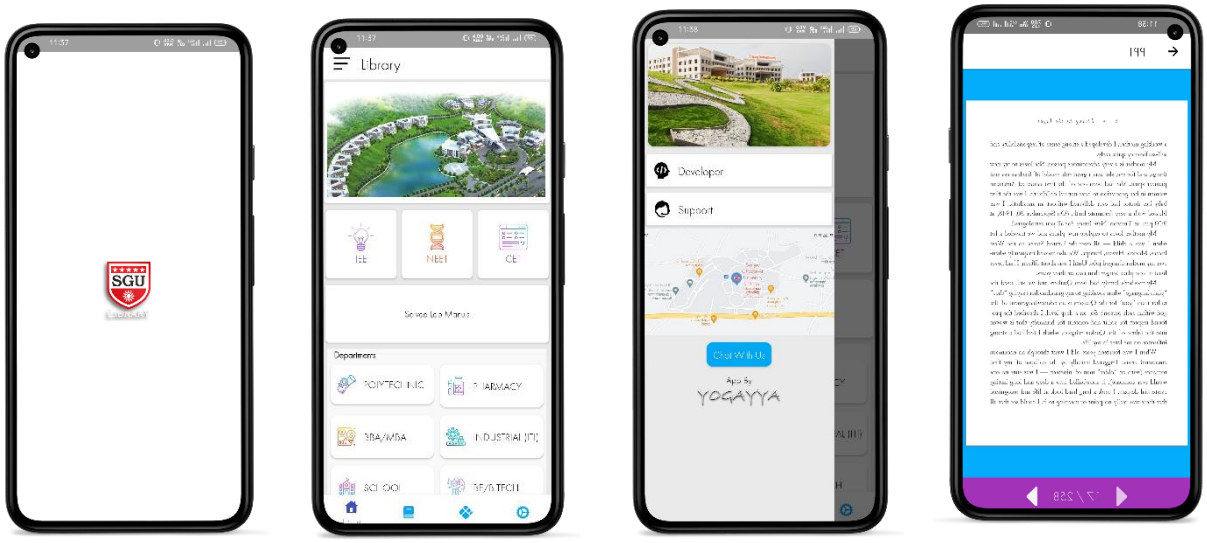

Fig 9.1 Snapshots Of SGU Library

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