Android   Book Rental Management System

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Abstract: Android Book Rental system is an android app which provides a facility to give book for rent. Proposed system provides a utility that conveniently allows for this exchange does not exist for three Primary reasons it must be secure and fair. This provides a platform to rent books within a school or college community. Customers are able to check available rental unit. Implemented using Android studio and Firebase. Provides the user to create account add book by scanning ,search ,request book for rent, Provide book for rent. This system is really very helpful for the reader as they can rent a book instead of going out, buying and wasting money.

Keywords: ISBN - International Standard Book Number Manipulation, Firebase database ,Android Studio

1.INTRODUCTION

The project "AN ANDROID APP FOR BOOK RENTAL MANAGEMENT SYSTEM"
is developed in android java application. It focuses on basic operations like adding new books, updating new information, searching books and members (authors) and facility to borrow and return books. The Firebase real time Database is a cloud hosted database. When you build cross-platform apps with our Android, and Java SDKs , all of your clients share one Real time Database instance and automatically receive updates. The system would be having one login the email-id.

Users like students, faculty members, and book readers etc., face problems in manual system in finding the details of books related to issuing and returning of the books so that theyneed a reminder and up gradation from manual to computerized system.

This application is easy to use, and expert user because of the attractive page design and proper validation for each field. The application reduced as much as possible to avoid errors while entering the data. It also provides error message while entering wrong data. No formal knowledge is required for the user to use this technique. User can get to understand different sorts of books that they were unaware of by just searching within the system using keywords. Thus by this all it proves it is user friendly online book rental system, which lead to error free, secure, reliable and fast management system.

2. EXISTING SYSTEM

There is a prominent amount of research have gone on book rental system, but every research has risen to any real-life solutions. For now, very few solutions are available those are:

A.   The records were never used to be in an efficient manner. If any information was to be found it was required to experience the various registers, archives there could exist nothing like report generation. There would always be unnecessary utilization of time while entering records and recovering record. It was extremely hard to discover mistakes while entering records.

B.   Traditional book purchasing procedure is not efficient for shopkeepers as they have to deal with the crowd. There is a threat of forgery if the customers are new to marketing.

3. PROPOSED SYSTEM

Currently, e-learning and e-education are on the rise, with everything moving away from manual to automated processes. The purpose of this project is to make book rental system in more convenient and easy way. Current situation presents you the framework for rentals or purchasing as a strenuous work. With the huge extension of Internet and web based business innovation, Internet stage is giving ton of administrations and focal points for online organizations, particularly for android based shopping .

Firebase database is used to store and sync data between the customer in real time with firebase database. The main objective of the project is to create an online book rental system that allows users to search and rent a book based on title, author and subject. The selected books are displayed in a tabular format and the user can order their book. This system is really very helpful for the reader as they can rent a book instead of going out, buying and wasting money.
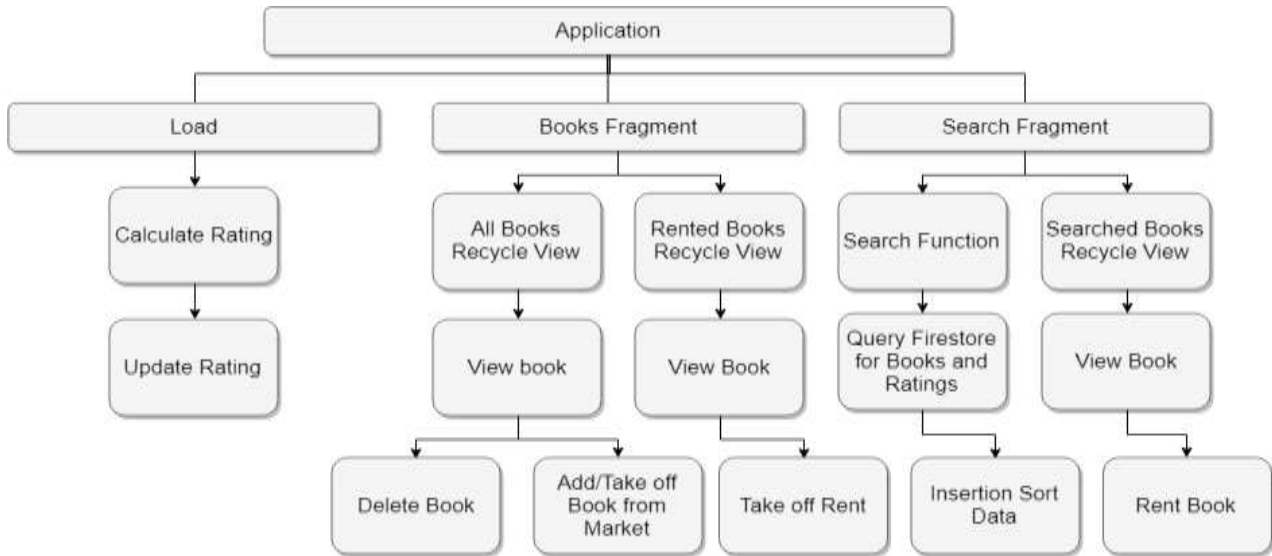

Fig. 1 Architecture Diagram

Fig1 is the architectural diagram ,these are the features involved in this project

A.   Android
Android is **a mobile operating system based on a modified version of the Linux kernel and other open source software**, designed primarily for touch screen mobile devices such as smart phones and tablets. .

B.   Firebase
Store & sync data between your users in realtime with the Firebase Realtime Databse. Optimize for offline use and build strong user-based security for your app.
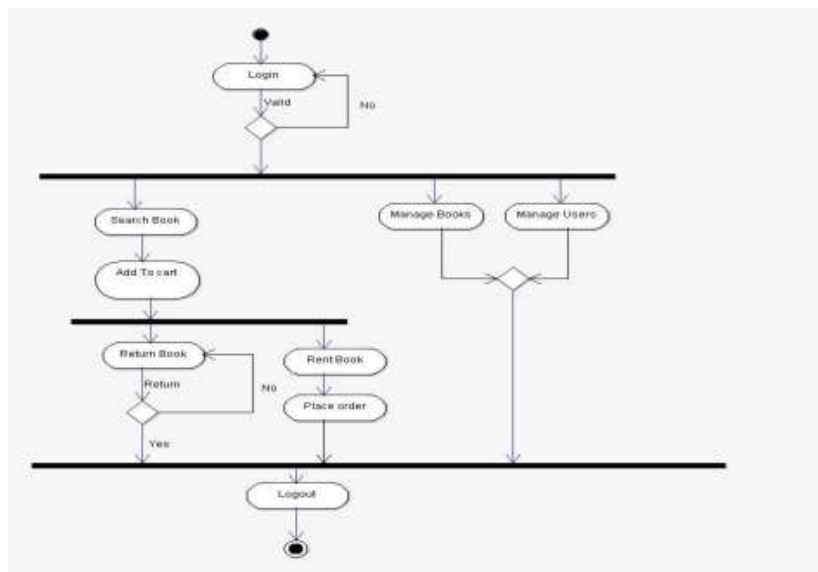
4. WORKFLOW OF THE APPLICATION

Fig. 2 Detailed Data Flow Diagram

The above DFD gives complete work flow of the application; at first the user has to enter the data, that data (mail-id ,data of birth) for new registration ; once the data is loaded it is stored in the database. The user can give the book for rent, search the book ,place the order .The output which can be visualized by the user.

Modules description

A. Module Name: Account Creation

- • Input - email, password , year- group, date of birth
- • Process – Account creation
- • Output – Account will be created

B. Module Name: Adding Books
- • Input - ISBN scanning
- • Process – validates
- • Output – Books added

C. Module Name: Book Search-ISBN
- • Input - ISBN. Book title, author
- • Process – Search book availability in database
- • Output – Books is searched in database.

D. Module Name: Rent Request
- • Input - Renting Details
- • Process – Request is communicated between users
- • Output – period of renting is alloted.

5.OUTCOME

The purpose of testing is to find errors. Testing is the process of discovering every possible fault or weakness in a work product. It provides a way to check the performances of components, assemblies, sub-assemblies, and a finished product. It is the process of utilizing software with the aim of ensuring that the software system meets its requirements, user expectations and does not fail in an inadmissible manner.

Test case ID	FeatureTested	Sample Input	ExpectedOutput	Actual Output	Remarks (Pass/Fail)
1	Book Search	Invalid ISBN	Book data andOwner detail output	String says result is Invalid	Fail
2	Book Fragment	9852248512545 Input and search button click	Show book details	Show bookdetail	Pass

Test case ID	FeatureTested	Sample Input	ExpectedOutput	Actual Output	Remarks (Pass/Fail)
3	View RentedBook	onload	Correct book data and user	Correct bookdata and user	Pass
4	View RentedBook	onload	Correct book data and user	Incorrect book data and user	Fail

Fig 4 Integration Testing

6. CONCLUSION

The objective of the system is accomplished and the issues are settled. This project is created in a way that is easy to understand and needed support is given at various levels. This system is really very helpful for the reader as they can rent a book instead of going out, buying and wasting money. Reliability, responsiveness, tangibles and quality helps us to serve the user in a better manner. Hassle free renting can be provided

7. FUTURE ENHANCEMENT

In future this model can be applied to larger fields where now we have considered only Bengaluru

- Execute GPS System
- Direct interaction between buyer and rent provider
- Provide customized inbox to the users

8.ACKNOWLEDGMENT

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