IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

Campus-Cart: In-Campus Material Exchange Platform

Ms. M. C. Panire[1], Vishwpratap Sachin Kamble[2], Asad Dastgir Mahaldar[3], Adarsh Ravindra Khot[4], Rasika Yogesh Lolage[5], Prathamesh Chandrakant Khot[6]
Lecturer, Department of Computer Engineering (Diploma)[1]
Students, Department of Computer Engineering (Diploma)[2-6]
Rajarambapu Institute of Technology, Islampur, India

Abstract: *Modern campuses face an ongoing issue of underutilized academic and personal materials such as books, electronics, lab equipment, and daily-use items that are often discarded or forgotten post-use. Simultaneously, other students seek these same items but lack a centralized, secure, and reliable channel to obtain them. Campus-Cart addresses this by providing an exclusive digital platform for in-campus material exchange. It enables students to list, discover, and manage the trade of second- hand goods within their institutional network. This Android application, powered by Firebase Realtime Database and Firebase Storage, includes secure user access, image-supported item listings, real-time updates, and user-specific content management. With dynamic features like search, filters, and profile-based listings, Campus-Cart promotes sustainable reuse of materials and builds a trusted internal economy. Designed with simplicity, speed, and privacy in mind, it revolutionizes how campuses handle student-to-student transactions.*

Keywords: Modern campuses

I. INTRODUCTION

The need for structured resource reuse within college environments is often overlooked. Most students buy study material, instruments, and tech accessories that are used temporarily but are still in excellent condition. Without a platform, these valuable resources end up unused, resulting in waste and unnecessary repurchase by other students.

Campus-Cart is built to streamline the process of listing and acquiring such materials, forming a student-run ecosystem inside the campus. It facilitates a trusted environment by limiting access only to verified campus users, removing the risks and clutter of external marketplaces. The project goes beyond just listing items — it focuses on efficiency, ease of use, visual clarity, and complete control for the user over their personal listings. The platform serves as both a sustainable and tech-driven solution to the common but unaddressed problem of short-term material use and reuse within academic communities.

Objectives:

- Design a closed-network exchange system exclusive to students and staff.
- Implement secure access using pre-verified login credentials.
- Develop an intuitive UI for product listing, browsing, and filtering.
- Support image upload and display for items via Firebase Storage and Glide.
- Provide users full control to **edit or delete** their listed items.
- Display products using a Grid RecyclerView with individual detail views.
- Add a functional drawer menu with personalized profile details.
- Ensure login session tracking using Shared Preferences.
- Optimize data fetch and UI rendering for a smooth experience
- Maintain Firebase Realtime sync for instant backend operations.

DOI: 10.48175/IJARSCT-25363

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

Scope of the Project:

This project is scoped strictly for in-campus usage, making it suitable for colleges, universities, hostels, or even closed apartment societies. The application currently supports:

- Restricted login using preloaded student database (no open registration).
- Firebase-based backend that supports real-time sync of item data.
- Glide integration for crash-proof image rendering with Firebase Storage.
- A modular architecture ready for scaling into future features like in-app chat, delivery coordination, or credit-based trades.
- SearchView and Spinner-based filtering system to allow easy discovery by item type or keywords.
- Lightweight performance design so it runs smoothly even on budget Android devices.
- SharedPreferences used for automatic login check and session handling

II. EXPERIMENTAL SETUP

Software Requirements

No.	Component	Description
1	Operating System	Windows 10/11, Linux
2	IDE	Android Studio (Latest)
3	Programming Language	Java (Backend), XML (UI Design)
4	Database	Firebase Realtime Database
5	Cloud Storage	Firebase Storage
6	Image Handling	Glide (for Firebase Image Rendering)
7	Build Tool	Gradle
8	Version Control	Git + GitHub
9	Android SDK & Emulator	For development/testing

Hardware Requirements

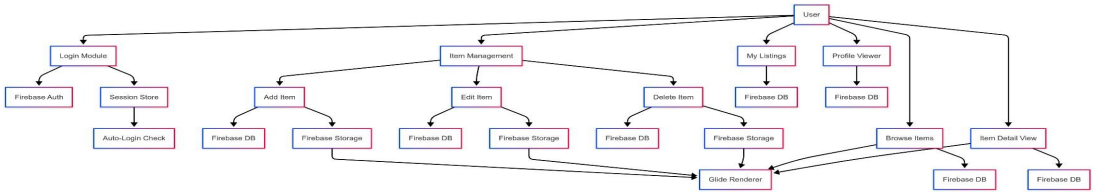
No.	Component	Description
1	Processor	Intel Core i5/i7 or Ryzen 5/7
2	RAM	Minimum 8GB (16GB recommended)
3	Storage	Minimum 20GB SSD
4	GPU	Integrated/Dedicated GPU

DOI: 10.48175/IJARSCT-25363

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

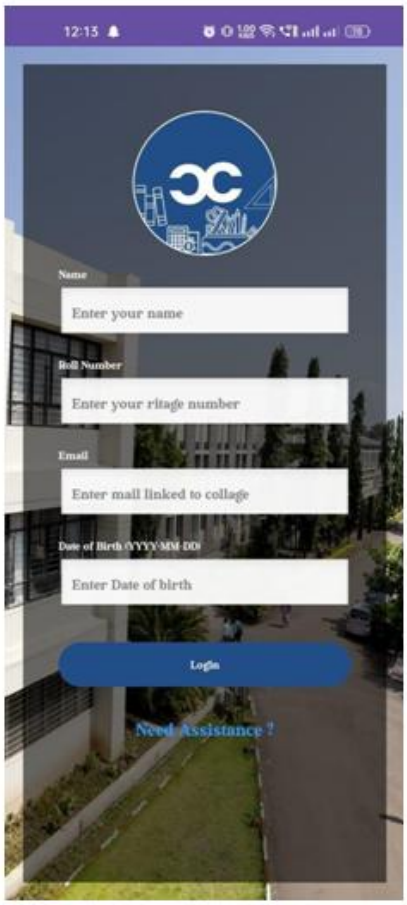
Process Flow:

Flow 1: App Structure

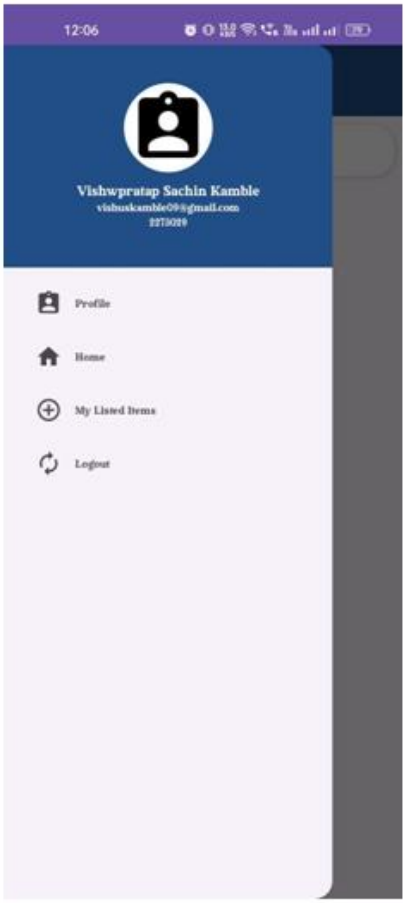


III. RESULT

Login Page

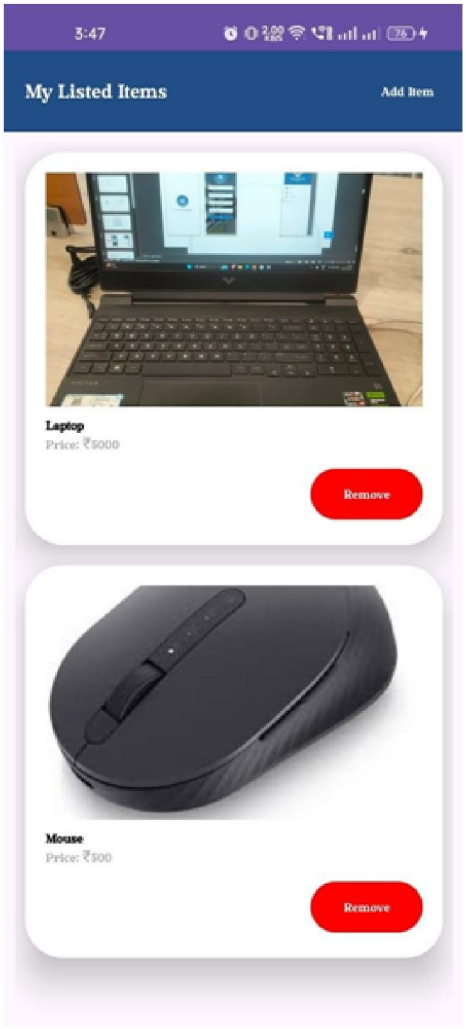


Menu Drawer

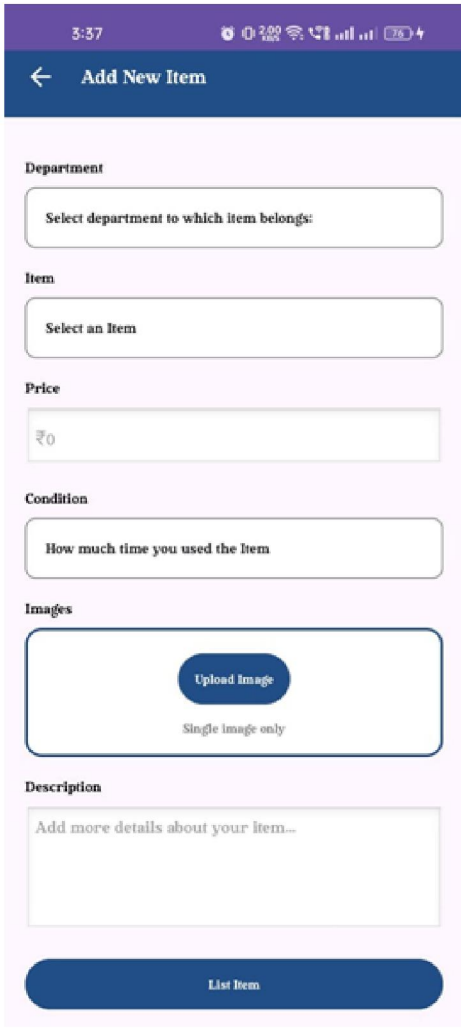


IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

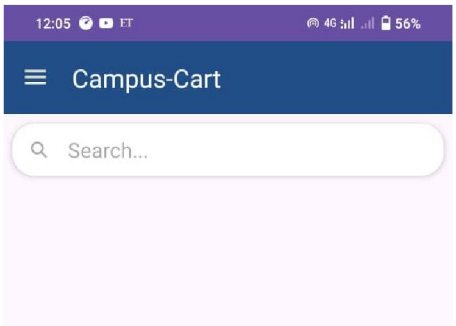
Listed Items module



Add Item module



Home page



DOI: 10.48175/IJARSCT-25363

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

IV. CONCLUSION

Campus-Cart is a fully functional Android application tailored for in-campus material exchange. It simplifies and digitalizes how students and staff manage second-hand academic and personal goods. The app not only supports listing, editing, and deleting items but also provides a smooth, secure, and user-friendly interface with robust real-time backend support via Firebase.

Its campus-exclusive approach ensures only legitimate users can interact, which improves reliability and trust. With advanced search/filter, seamless media integration, and modular UI design, the app is prepared for long-term use and future upgrades such as in-app chat, push notifications, or admin dashboards.

In essence, Campus-Cart represents a sustainable, student-friendly step toward smarter campus living.

ACKNOWLEDGEMENT

We must mention several individuals that were of enormous help in the completion and development of this work. Ms. M. C. Panire our guide encouraged us to complete this microproject work. her continuous invaluable guidance throughout the course this study helped us to complete the work up to this stage and hope will continue in further work. I am also very thankful to HOD Mr. D. V. Mirajkar for his valuable suggestions, critical examination of work during the progress, We are indebted to them.

In addition, very energetic and competitive atmosphere of the Department of Computer Engineering had much to do with this project work. We acknowledge with thanks to faculty, teaching, non-teaching staff of department.

I sincerely thank to Prof. Dr. N. G. Khodave (Faculty), for supporting us to do this work and we are very much obliged to him. Last but not the least; our parents and family, friends, constantly supported us for this work in all aspects.

REFERENCES

[1]. H. Schildt, Java: The Complete Reference, McGraw-Hill, 11th Edition
[2]. R. Meier, Android App Development, Wiley, 3rd Edition
[3]. Kumar, Firebase Essentials, Packt Publishing
[4]. R. Boyer, Mobile App Dev with Java, Cengage Learning
[5]. https://developer.android.com/
[6]. https://firebase.google.com/docs
[7]. https://docs.oracle.com/en/java/javase/
[8]. https://developer.android.com/guide/topics/ui