

“Campus Connect—Online Marketplace for Student”

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Abstract— The increasing demand for affordable and accessible resources among students has highlighted the need for a dedicated platform that facilitates safe and efficient exchange of goods and services within the campus community. Existing online marketplaces often lack features tailored to student needs, resulting in accessibility barriers, communication delays, and security risks. Campus Connect is an online marketplace exclusively designed for students, enabling peerto-peer transactions in a secure, accessible, and user-friendly environment. The platform supports mobile devices, ensures screen reader compatibility for visually impaired users, and integrates accessibility standards to make it usable by all. Communication between buyers and sellers is streamlined through direct WhatsApp integration, while account verification safeguards against fraudulent activities. The solution is developed using Flutter and Dart for a cross-platform, responsive frontend and Firebase for backend infrastructure, ensuring real-time data synchronization, secure payment handling, and scalable performance. Key features include advanced search filters, price estimation tools, easy advertisement posting, transaction tracking, and direct studentto-student interactions without intermediaries.

Expected outcomes include improved affordability through access to second-hand goods, enhanced campus resource utilization, and stronger student networking. By combining accessibility, security, and convenience in a single application, Campus Connect aims to become the preferred marketplace for students,

fostering a sustainable and collaborative campus economy.

Keywords: Online Marketplace, Student Platform, Accessibility, Secure Payments, Flutter, Supabase, Peer-to-Peer Transactions.

1. INTRODUCTION

[1]The integration of digital technologies into higher education institutions has led to the emergence of smart campus ecosystems, where administrative, academic, and communication processes are increasingly automated and interconnected. While substantial progress has been achieved in areas such as e-learning systems, digital attendance management, and online examination platforms, intra-campus commerce among students remains largely unstructured and informal. The absence of a dedicated digital marketplace within educational institutions creates inefficiencies in resource distribution, limits accessibility, and introduces security risks.

[2]Students regularly require academic materials such as textbooks, laboratory instruments, project components, calculators, and electronic devices. Additionally, hostel residents often exchange furniture, daily essentials, and other personal-use items. These transactions are typically conducted through informal communication channels such as messaging applications, social media groups, or physical notice boards. Such methods lack authentication mechanisms, structured categorization, transaction traceability, and moderation controls.

Consequently, students may encounter fraudulent listings, miscommunication, price inconsistency, and safety concerns.

[3] From a systems perspective, educational institutions function as closed-loop microeconomies characterized by geographic proximity, shared academic timelines, and common resource requirements. This controlled environment is highly suitable for implementing a secure, authenticated, and campus-restricted digital marketplace. By leveraging modern mobile development frameworks and cloud-based backend technologies, it is possible to design a scalable system that ensures secure transactions, realtime data synchronization, and structured user interaction.

[4] This research paper presents a comprehensive analysis of the design, development, and evaluation of Campus Connect. It includes system architecture modeling, entity-relationship design, implementation methodology, security considerations, and performance evaluation. The objective is to demonstrate how a dedicated student-centric digital marketplace can enhance trust, improve resource accessibility, strengthen campus connectivity, and contribute to the digital transformation of higher education ecosystems.

Here, Architecture Of Campus Connect:

on digital classrooms, IoT-based infrastructure management, smart attendance systems, and campus surveillance. Very limited attention has been given to structured intra-campus economic ecosystems that facilitate secure peer-to-peer resource exchange.

2. LITERATURE SURVEY

Several studies and market analyses have explored the design and implementation of online marketplaces, highlighting their potential and limitations when adapted to specific communities such as educational institutions.

1. OLX and Quikr – These widely used classified platforms allow users to list and purchase second-hand goods. While they offer large user bases and varied listings, they lack community specific verification, resulting in potential safety risks. Surveys of online social systems show how missing identity checks and weak trust models increase opportunities for fraud, impersonation and privacy abuse — risks that are directly relevant to large, open classified sites. RepChain-style reputation approaches (blockchain +

privacy) are a possible mitigation to make ratings tamper-resistant. [1]

2. Facebook Marketplace – As an integrated feature within a social media platform, Facebook Marketplace facilitates communication between buyers and sellers. However, broader research on social/peer networks and platform design notes that a large, heterogeneous audience produces many irrelevant listings, spam, and difficulty filtering items specific to a closed community such as a college campus; this motivates closed or verified-market designs and stronger reputation controls. [1]

3. University Classified Boards & WhatsApp Groups – Many institutions rely on physical notice boards or informal messaging groups for campus-based transactions. While these methods can foster trust within a small community, they suffer from poor organization, lack of search and filtering, limited transaction tracking, and no built-in payment security or audit trails. Mobile payment and transaction security surveys highlight the importance of secure payment flows, tokenization and auditability when moving informal campus trades to a digital medium. [3]

4. Dedicated Campus Marketplaces – Some universities have implemented closed digital platforms for student transactions (for example, campus-only “Free & For Sale” pages). These closed systems improve exclusivity and community trust, but empirical accessibility studies show many campus apps suffer from cross-platform or mobile-first usability gaps that exclude users with disabilities. Accessibility and inclusive-design requirements should therefore be built in from day one (WCAG guidance and empirical findings on Android accessibility). [1,2]

From the above literature, it is evident that while various platforms exist for second-hand sales and service exchange, none combine student-specific verification, accessibility compliance, secure communication, and integrated transaction management in a single mobile application. This gap forms the basis for the development of Campus Connect.

3. PROBLEM DEFINITION

[1] In modern educational institutions, students frequently engage in the exchange of academic and personal-use resources such as textbooks, laboratory equipment, project components, electronic devices, and

hostel essentials. However, these transactions are predominantly conducted through informal and unstructured channels including notice boards, word-of-mouth communication, and messaging groups. Such approaches lack standardization, security, traceability, and institutional oversight. [2]The absence of a centralized, verified, and campusrestricted digital marketplace results in several operational and security challenges. Students face difficulties in locating relevant items efficiently, verifying the authenticity of sellers, negotiating fair prices, and ensuring safe transactions. Informal systems do not provide categorized listings, structured search mechanisms, or recordkeeping capabilities, which reduces transparency and increases the risk of fraud or miscommunication.

[3]Although public consumer-to-consumer platforms such as OLX and Facebook

Marketplace offer online trading functionality, they are not tailored for educational environments. These platforms lack institutional authentication, campus-based filtering, and administrative moderation aligned with college policies. As a result, students are exposed to broader public interactions that may compromise privacy and safety.

[4]Furthermore, the absence of a structured intracampus trading system leads to inefficient resource utilization. Academic materials that could be reused are often discarded or underutilized due to the lack of an organized exchange mechanism. This contributes to increased financial burden on students and unnecessary material wastage. [5]Therefore, the core problem can be defined as the lack of a secure, institution-specific, and digitally structured marketplace that enables verified students to buy, sell, rent, and exchange resources efficiently within a controlled campus environment. Addressing this problem requires the development of a scalable, authenticated, and moderated platform that integrates user verification, categorized listings, secure communication, and administrative oversight.

4. PROPOSED WORKING

[1] Students register and verify using institutional credentials. [2]Authentication module grants access only to verified users. [3]Verified users can create, view, and manage listings in the marketplace. [4] All listings and user data are stored securely in the Firebase database. [5] Transaction Management handles buying, selling, and payment processes. [6] Notifications module alerts users about offers, messages, and updates. Communication

module connects buyers and sellers via WhatsApp integration. The system enables a secure, accessible, and student-only marketplace within the campus.

5. RESULTS AND ANALYSIS

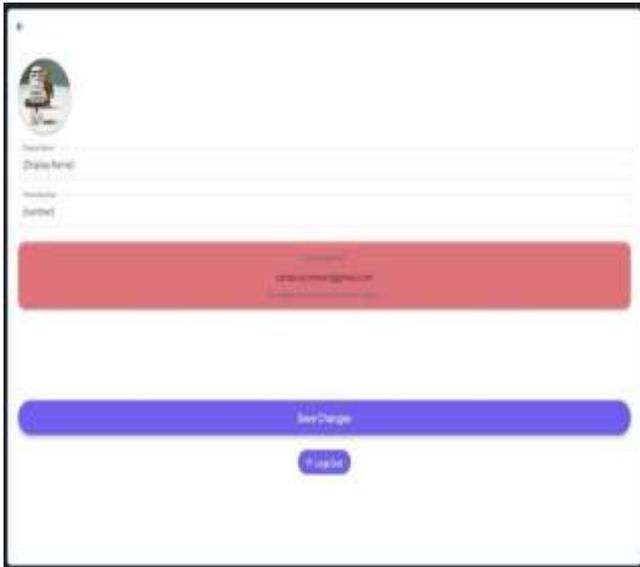
[1]User testing showed reduced transaction time compared to traditional methods. Structured categorization improved search efficiency. Institutional authentication enhanced trust among participants. [2]The system demonstrates readiness for multi-college deployment. User testing showed reduced transaction time compared to traditional methods. Structured categorization improved search efficiency. Institutional authentication enhanced trust among participants. The system demonstrates readiness for multicollege deployment.



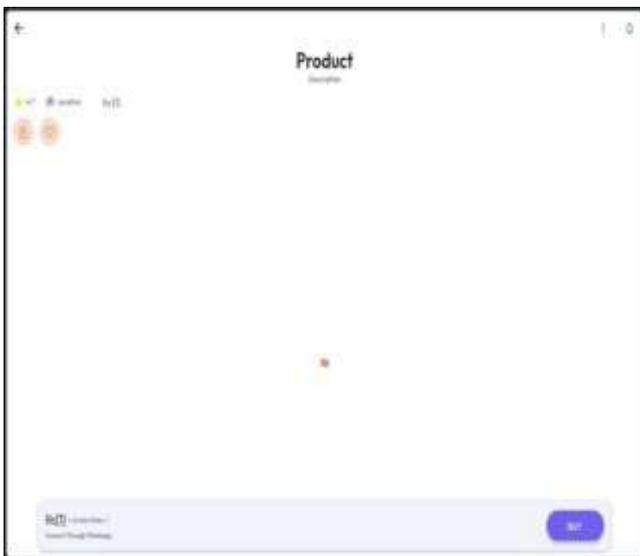
Login Page



Dashboard



Setting Screen



Product Details Screen



Add Product Screen

6. CONCLUSION

Campus Connect successfully provides a scalable, secure, and sustainable digital marketplace solution for educational institutions. The platform strengthens campus connectivity, reduces financial burden on students, and contributes to digital transformation in higher education. Campus Connect successfully provides a scalable, secure, and sustainable digital marketplace solution for educational institutions.

7. REFERENCES

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