

SENIOR DESIGN PROJECT REVIEW-1 PRESENTATION



[CAMPUS EXCHANGE - A COLLAGE MARKETPLACE & FREE LIBRARY PLATFORM]

Supervised By: Prof. Subash Chandra Tripathy

Group No.:

Name of the Student(s) with Regd. No.:

Pratyush Nayak - 2141014098
Abhinav Banerjee - 2141002019
Abinash Dash - 2141004101
Abhishek Nandi - 2141014029

Department of Computer Sc. and Engineering
Faculty of Engineering & Technology (ITER)
Siksha 'O' Anusandhan (Deemed to be) University
Bhubaneswar, Odisha

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Introduction

■ Project Overview

- **Campus Marketplace:** Buy/sell books, electronics, stationery, and other essentials within the college community
- **Free Library:** Open-access repository for lecture notes, past exam papers, and solutions
- **Core Features:** Messaging, transaction management, search filters, and responsive UI
- **User-Centric Design:** Built specifically for **college students**, unlike generic platforms

Introduction

■ Problem Statement & Motivations

- **Students struggle to find an efficient way** to buy/sell books, electronics, and other essentials
- No **structured, college-specific** marketplace for easy transactions
- **Lack of an open-access, centralized study resource hub**
- Current methods (Facebook groups, random chat groups) are **inefficient and lack organization**
- Need for a **dedicated, student-driven platform** to foster a sustainable ecosystem

Introduction

■ Objectives & Expected Impact

- **Provide a secure & structured marketplace** tailored for students
- **Reduce expenses** by enabling students to buy/sell essentials at lower prices
- **Increase accessibility to academic resources** through free, volunteer-driven content sharing
- **Enhance collaboration** among students across different semesters & courses
- **Encourage sustainable practices** by promoting second-hand trading of books & gadgets

Literature Review

Existing Solutions & Their Limitations

Author/Platform & Year	Method Used	Features	Limitations
M. F. Ismail et al., 2020 [1]	University-specific online marketplace	Student-focused marketplace	No study material sharing, minimal security features
R. Robiin, 2020[2]	Online marketplace specifically for students	Tailored for students' academic and daily needs	Limited scalability, lacks advanced security features
L. U. Oghenekaro & T. Briggs, 2024[3]	Agile methodology (Extreme Programming), JAMstack architecture	University-based product filters, local business promotions, seller dashboard	Limited scalability beyond universities, lacks AI-driven recommendations

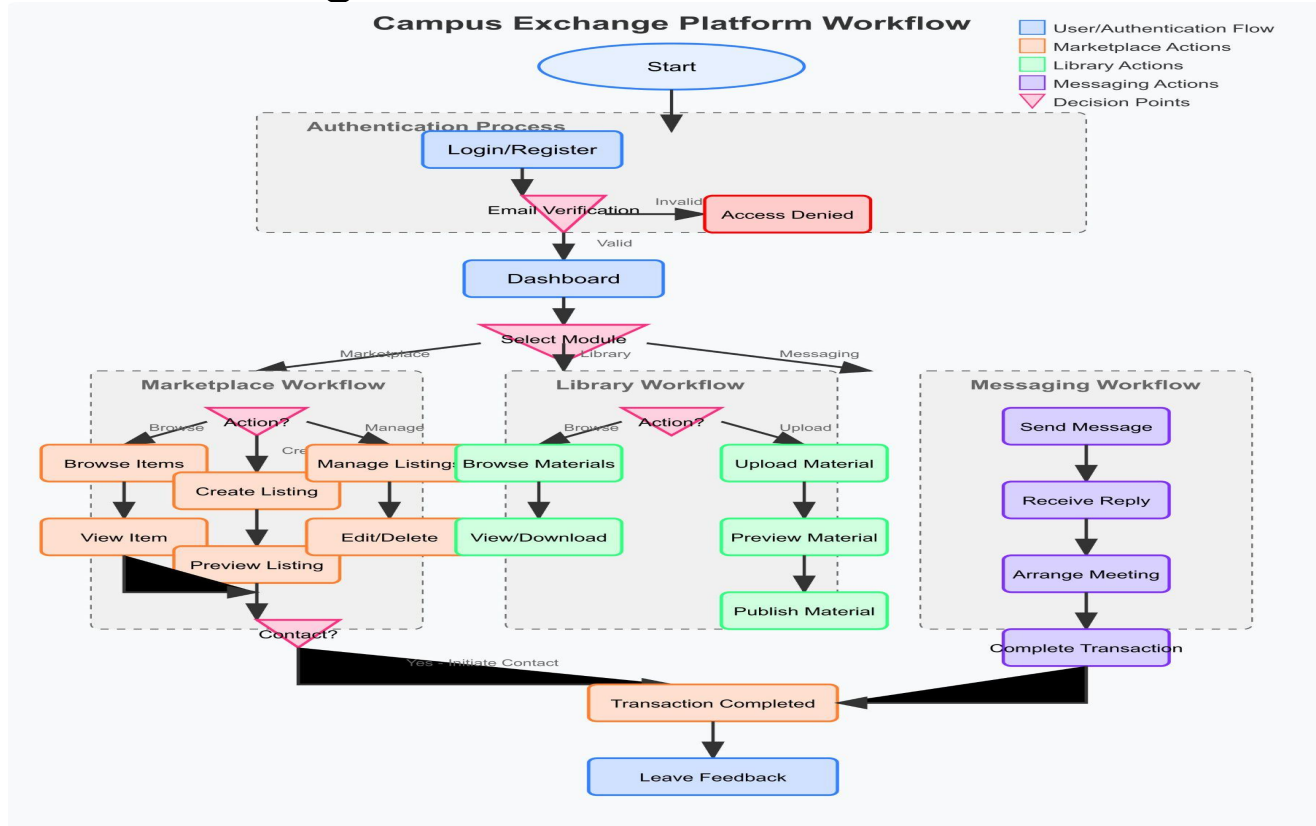
Literature Review

■ Improvements of Existing Solutions

- **Free Study Material Sharing:** No paywall for educational resources.
- **Built-in Chat & Secure Transactions:** Safer than OLX/Facebook groups.
- **Advanced Search & Filters:** Easier item discovery.
- **Ad-Free & Student-Focused:** No distractions, only relevant listings.
- **Category-Based Free Library:** Organized academic resources for easy access.
- **Volunteer-Based Uploads:** Encourages community contributions.
- **Lightweight & Fast UI:** Optimized for student use.
- **No Hidden Fees:** Completely free for students.

Proposed Solution And Architecture

■ Workflow Diagram



■ Key components

- **User Authentication:** Secure login and registration system for students to access the platform.
- **Marketplace Module:** A dedicated section where students can list, edit, and manage product listings for books, electronics, and other college essentials.
- **Free Library Section:** An open-access repository where students can voluntarily upload and access study materials, including lecture notes, previous year question papers, and problem solutions.
- **Search & Filters:** Advanced search functionality with filtering options based on categories, price range, subjects, semesters, and course types for easy navigation.
- **Messaging System:** An integrated direct messaging feature that allows buyers and sellers to communicate securely within the platform without exposing personal contact details.

■ Technologies, Frameworks, and Tools Used

- **Frontend Development:** HTML, CSS, JavaScript for responsive UI, with frameworks like React.js for an interactive experience.
- **Backend Development:** Node.js with Express.js for handling authentication, database interactions, and API management.
- **Database Management:** MongoDB for storing user data, product listings, and study materials efficiently.
- **Authentication & Security:** JWT (JSON Web Tokens) for secure user login and access control.
- **Hosting & Deployment:** AWS deploying the platform and ensuring scalability.
- **Version Control & Collaboration:** Git and GitHub for source code management, collaboration, and version control tracking

Progress in Implementation Plan and Methodology

- **Project Planning & Research:** Successfully outlined the platform's features, workflow, and technology stack.
- **Frontend Development:** The user interface is in progress, focusing on a responsive and interactive design.
- **Backend Setup:** The backend structure has been initiated, with authentication and database integration underway.
- **Database Design:** Key schemas for managing users, products, and study materials have been planned and structured.
- **Next Steps:** Further development of messaging, transaction handling, and refining the overall user experience.

Summary

- **Campus Exchange** is a digital platform designed to provide a **college marketplace and free library** for students.
- The platform allows students to **buy, sell, and exchange products** while also accessing and sharing **study materials** freely.
- It features **secure authentication, structured listings, messaging, and search filters** for easy navigation.
- A **volunteer-based Free Library** ensures open access to lecture notes, previous year questions, and solutions.
- The system is being developed with a **user-friendly UI, secure backend, and efficient database management**.
- Future steps include refining features, enhancing security, and ensuring **scalability for broader adoption**.

Bibliography

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*Thank
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