

A
Mini-Project Report on
**CampusSwap: Online Marketplace for
Students using Django**

Submitted in partial fulfillment of the requirements
for the degree of
BACHELOR OF ENGINEERING
IN
Computer Science & Engineering
(Artificial Intelligence & Machine Learning)

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CERTIFICATE

This is to certify that the project entitled “**CampusSwap: Online Marketplace for Students using Django**” is a bonafide work of Prathamesh Mhatre (22106026), Raj Nikam (22106027), Tejashri Maske (22106051), Hrishikesh Kharkar (22106002) submitted to the University of Mumbai in partial fulfillment of the requirement for the award of **Bachelor of Engineering in Computer Science & Engineering (Artificial Intelligence & Machine Learning)**.

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PROJECT REPORT APPROVAL

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Place: APSIT, Thane

Date:

DECLARATION

We declare that this written submission represents my ideas in my own words and where other ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

CampusSwap is an innovative online marketplace built using Django, designed to address the evolving needs of students by providing a platform for exchanging old items they no longer use. This project report encapsulates the conception, development and evaluation of CampusSwap, highlighting its significance in promoting sustainability, affordability and community engagement within university campuses.

Motivated by the prevalent challenges faced by students in disposing of or acquiring second-hand items, CampusSwap offers a solution that fosters a culture of resource reuse and promotes environmental stewardship. The report commences by elucidating the rationale behind CampusSwap's creation, emphasizing its role in mitigating waste generation, reducing financial burdens and promoting social connections among students.

The technical architecture of CampusSwap is detailed, encompassing the Django backend, relational database management system (e.g., PostgreSQL), front-end technologies (e.g., HTML, CSS, JavaScript). Emphasis is placed on scalability, security and performance optimizations to accommodate the platform's dynamic usage patterns.

So in the end, CampusSwap emerges as a promising initiative leveraging Django's capabilities to create a tailored online marketplace that addresses the unique needs of students. By promoting the reuse of resources, fostering community engagement and enhancing affordability, CampusSwap strives to redefine the student trading experience, contributing to a more sustainable and interconnected campus environment.

Keywords: Online marketplace, students, exchanging items, sustainability, affordability, community engagement, second-hand, campus.

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CHAPTER 1

INTRODUCTION

1. INTRODUCTION

In today's fast-paced world, university campuses serve as vibrant hubs of learning, collaboration and innovation. However, within these dynamic environments, students often face challenges related to the disposal of old items they no longer need, as well as the acquisition of necessary resources at affordable prices. Recognizing these challenges and the potential for technological solutions to address them, CampusSwap emerges as an innovative online marketplace tailored specifically for students.

CampusSwap aims to revolutionize the way students exchange goods by providing a centralized platform where they can buy, sell, or swap their pre-owned items with fellow peers within their university community. Whether it's textbooks, electronics, furniture, or other miscellaneous items, CampusSwap facilitates the seamless transfer of resources, fostering a culture of sustainability, affordability and community engagement.

Powered by the Django web framework, CampusSwap embodies the fusion of technology and social responsibility, offering a user-friendly interface, robust features and a secure environment for transactions. Through its intuitive design and comprehensive functionalities, CampusSwap endeavors to streamline the process of trading among students, enabling them to declutter their living spaces, save money and connect with others who share similar needs or interests.

This report provides an in-depth exploration of the development, implementation and evaluation of CampusSwap, shedding light on its significance in promoting resource reuse, reducing waste generation and enhancing the overall student experience on campus. By harnessing the power of technology to foster a sense of community and sustainability, CampusSwap stands as a testament to the transformative potential of innovation in addressing real-world challenges within educational ecosystems.

CHAPTER 2

LITERATURE SURVEY

2. LITERATURE SURVEY

2.1 History

The history of student online marketplaces for university communities traces back to the early days of the internet and the emergence of e-commerce platforms. While the concept of online marketplaces catering specifically to university students gained momentum in the late 1990s and early 2000s, it has evolved significantly since then. Here's a detailed exploration of its history. The late 1990s saw the rise of internet usage among university students, with many campuses being early adopters of internet technologies. During this period, some websites and forums emerged that allowed students to buy, sell, or exchange goods and services within their university communities. These platforms were typically simple, text-based interfaces, often hosted on university servers or independent websites.

- **Integration with Campus Services (Late 2010s - Present):** In recent years, student online marketplaces have increasingly integrated with campus services and resources. Some platforms collaborate with university administrations to verify student credentials, ensuring a trusted and secure environment for transactions. Integration with campus resources such as library catalogs, academic calendars and student organizations further enhances the value proposition of these platforms for university communities.
- **Expansion beyond Goods Exchange:** Beyond buying and selling goods, student online marketplaces have expanded to facilitate other types of transactions and interactions within university communities. This includes services such as tutoring, ride-sharing, event ticketing and even peer-to-peer lending or borrowing of textbooks and study materials. Over time, student online marketplaces have placed greater emphasis on safety and security measures to protect users from scams, fraud and other risks.

Overall, the history of student online marketplaces for university communities reflects the evolution of internet technologies, changing consumer behaviors and the growing importance of digital platforms in facilitating peer-to-peer interactions and commerce within educational institutions.

2.2 Literature Review

[1] Mohd Fahmi Ismail, Maslina Abdul Aziz, Fatin Nur Syuhada Mohd Nor, Syaripah Ruzaini Syed Aris, Suzana Zambri. **Student online marketplace for university community**. The Indonesian Journal of Electrical Engineering and Computer Science (IJEECS) Vol 19, No 1 (2020)

By having a student online marketplace, the exchange of goods and services take place by having buyers and sellers being in contact with one another. This student online marketplace also helps small businesses to boost their sales, encourage new business start-up and inspire students who have business idea to help them to kick-start their business. The review concludes by outlining future directions for student online marketplaces and offering recommendations for stakeholders to navigate the evolving landscape effectively. It explores emerging trends such as mobile commerce, artificial intelligence and blockchain technology and their potential impact on the future of student marketplace platforms.

[2] Woolf, B.P., Lesser, V., Eliot, C., Eyler-Walker, Z., Klein, M. **A Digital Marketplace for Education**. In: Chin, W., Patricelli, F., Milutinović, V. (eds) Electronic Business and Education. Multimedia Systems and Applications Series, vol 20. Springer, Boston, MA. (2019)

Societal issues include understanding web-based educational interactions. individual learning processes and organizational dynamics in the distributed. digital instructional realm. The Educational MarketPlace is different from other Internet spaces in that it requires independent scoring of resources and certification of teaching. It describes how the Internet might replace the existing education monopoly and help dissolve the cottage industry of education in which a teacher handcrafts materials fixed by space and time. Here, the authors delve into the design and architecture of a digital marketplace for education, outlining the key components, modules and technical infrastructure required to support its functionality. They discuss aspects such as user interface design, content management systems, recommendation engines and integration with existing learning management systems (LMS) and educational resources.

CHAPTER 3

PROBLEM STATEMENT

3. PROBLEM STATEMENT

Despite the vibrant and dynamic nature of university campuses, students often encounter challenges related to the disposal of old items they no longer need and the acquisition of necessary resources at affordable prices. This leads to various issues such as:

- **Resource Underutilization:** Students possess numerous items, including textbooks, electronics and furniture, which are no longer in use but remain idle, occupying valuable space in dormitories or residences.
- **Financial Burden:** Purchasing new items can be financially burdensome for students, particularly when it comes to essentials such as textbooks and electronic devices, leading to increased financial stress.
- **Limited Access to Resources:** Some students may face challenges in accessing essential resources due to financial constraints, limiting their academic success and overall well-being.

In light of these challenges, there exists a pressing need for a comprehensive solution that facilitates the exchange of pre-owned items among students, promotes affordability, sustainability and fosters community engagement within university campuses.

3.1 Problem Statement

To develop a system addressing challenges on university campuses, there's a need for a platform enabling students to exchange pre-owned items like textbooks and electronics and it should promote affordability, sustainability, and community engagement by optimizing resource use and reducing financial stress.

CHAPTER 4

EXPERIMENTAL SETUP

4. EXPERIMENTAL SETUP

4.1 Software Setup

1. Programming Languages:

- **Python:** Python is a popular language for machine learning and web development.
- **JavaScript:** JavaScript is a programming language that enables interactive web pages and web applications. It allows you to add dynamic behavior to your HTML elements, such as handling user interactions, manipulating the DOM.

2. Web Development:

- **Vue.js:** Vue.js is a progressive JavaScript framework for building user interfaces. It provides tools for creating reactive components and managing state in your application.
- **PrimeVue:** PrimeVue is a UI component library for Vue.js based on the popular PrimeFaces library for JavaServer Faces (JSF).
- **HTML (HyperText Markup Language):** HTML is the standard markup language for creating web pages and web applications. It provides the structure for your web pages, defining elements such as headings, paragraphs, links, images, etc.
- **CSS (Cascading Style Sheets):** CSS is a style sheet language used for describing the presentation of a document written in HTML. It controls the visual appearance of your HTML elements, including layout, colors, fonts and spacing.

3. Database:

- **PostgreSQL:** PostgreSQL is a powerful, open-source relational database management system (RDBMS). It provides features such as transactions, ACID compliance and support for complex queries and data types.

4. Virtual Environment:

- **Anaconda:** Anaconda is an open-source distribution of the Python and R programming languages for scientific computing, data science and machine learning. It includes a package manager, environment manager and collection of pre-installed libraries and tools commonly used in data analysis and scientific research.

5. Version Control:

- **Git:** For version control of the project.

6. Project Management and Collaboration:

- **GitHub:** A cloud-based platform for hosting Git repositories and facilitating collaboration on software development.

7. Text Editors:

- **Visual Studio Code:** Visual Studio Code (VS Code) is a free, open-source code editor developed by Microsoft. It provides features such as syntax highlighting, code completion, debugging, version control integration and an extensive ecosystem of extensions.

8. Deployment:

- **localhost**

9. Communication Tools:

- **Discord:** Many businesses and professional teams use Discord for communication and collaboration. It's a great platform for remote work, allowing teams to communicate in real-time through text, voice, or video channels.

CHAPTER 5

**PROPOSED SYSTEM &
IMPLEMENTATION**

5. PROPOSED SYSTEM & IMPLEMENTATION

5.1 Block Diagram of Proposed System

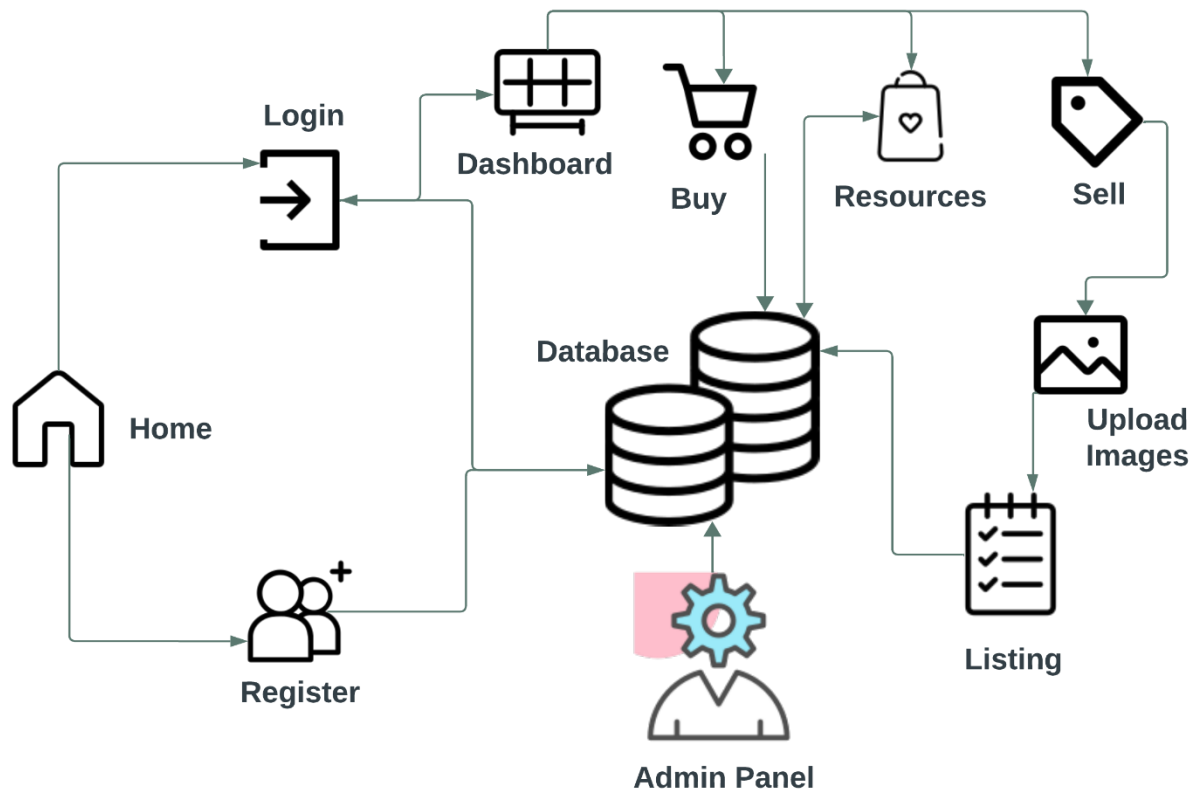


Fig 5.1.1 Block Diagram of System

5.2 Description of Block Diagram

The main components are:

- **Database:** This is where all the data about the items is stored, including the category, condition, price and any other relevant information. It includes listings, saved listings and uploaded images. It stores login and registration data of users.
- **Login:** This is where users enter their username and password to access their account.
- **Register:** If a user doesn't have an account yet, they can register for one here.
- **Home:** This is the main page of the website. It contains an overview of what CampusSwap is and how it works, as well as links to the most popular categories.

- **Dashboard:** Once a user logs in, they are taken to their dashboard. This is where they can see their profile information, listings they've created and messages they've received.
- **Sell:** Users can list items they want to sell in this section. They will need to provide a description of the item, photos and a price.
- **Buy:** This section allows users to browse through listings for items that are for sale. They can search for listings.
- **Upload Images:** Sellers can upload images of the items they are selling in this section. Sellers can upload images of the items they are selling in this section.
- **Listing:** This block likely refers to the individual pages that show details about a particular item that is being sold on the marketplace.
- **Admin Panel:** This section is only accessible to administrators of the website. They can use it to manage user accounts, listings and other aspects of the website.

5.3 Implementation

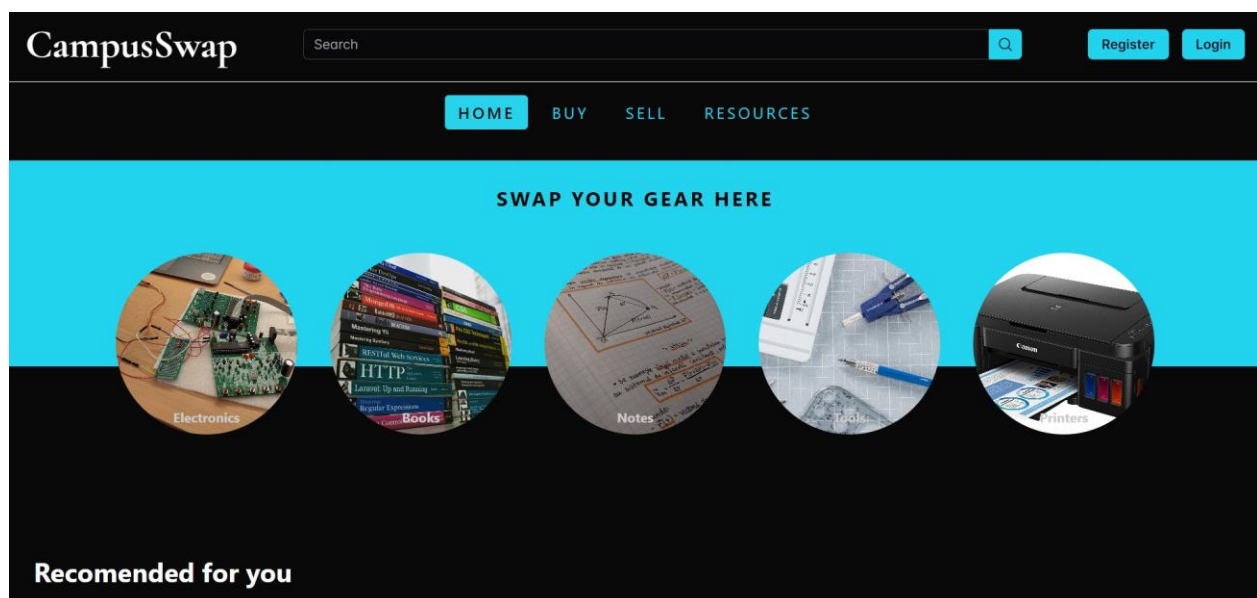


Fig. 5.3.1 The Homepage

The screenshot shows a web application interface with a dark background. At the top right, there are three navigation links: "Home", "Login", and "Register". The "Login" link is underlined. In the center, there is a white box titled "Login". Inside this box, there are two input fields: "MoodleID" and "Password". The "MoodleID" field has a user icon on the right, and the "Password" field has an eye icon and a slash icon on the right. Below these fields is a red "Submit" button. At the bottom of the box, there are two links: "Forgot Password" and "Sign up".

Fig. 5.3.2 The Login Page

The screenshot shows a web application interface with a dark background. At the top right, there are three navigation links: "Home", "Login", and "Register". The "Register" link is underlined. In the center, there is a white box titled "Register". Inside this box, there are several input fields: "MoodleID" (with a user icon), "Email" (with an email icon), "First Name" and "Last Name" (split into two fields), "phonenumber" (with a phone icon), "Password" (with an eye icon), and "Confirm Password" (with an eye icon). Below these fields is a red "Submit" button.

Fig. 5.3.3 The Register User Page of the Web App

The screenshot shows the 'SELL' page of the CampusSwap website. The header includes the 'CampusSwap' logo, a search bar, and user icons. The navigation bar has links for 'HOME', 'BUY', 'SELL' (highlighted), and 'RESOURCES'. The main heading is 'SELL YOUR ITEMS, HELP A STUDENT'. Below this are several input fields: 'TITLE OF LISTING', 'CATEGORY', 'PRICE', 'WHICH YEAR STUDENTS NEED THIS ITEM?' (dropdown), 'WHICH BRANCH STUDENTS WOULD NEED THIS ITEM?' (dropdown), and 'ITEM TYPE' (dropdown).

Fig. 5.3.4 The Sell Page After Registration

This screenshot shows the detailed form for adding an item to the 'SELL' page. It includes dropdown menus for 'ITEM TYPE' and 'CONDITION OF ITEM', followed by a large text area for 'PRODUCT DESCRIPTION'. Below the description is an 'UPLOAD IMAGES' section with three buttons: '+ Choose', 'Upload', and 'Cancel'. A message 'Drag and drop files to here to upload.' is displayed below the buttons. At the bottom of the form is a 'PREVIEW LISTING' button.

Fig. 5.3.5 Image Upload UI

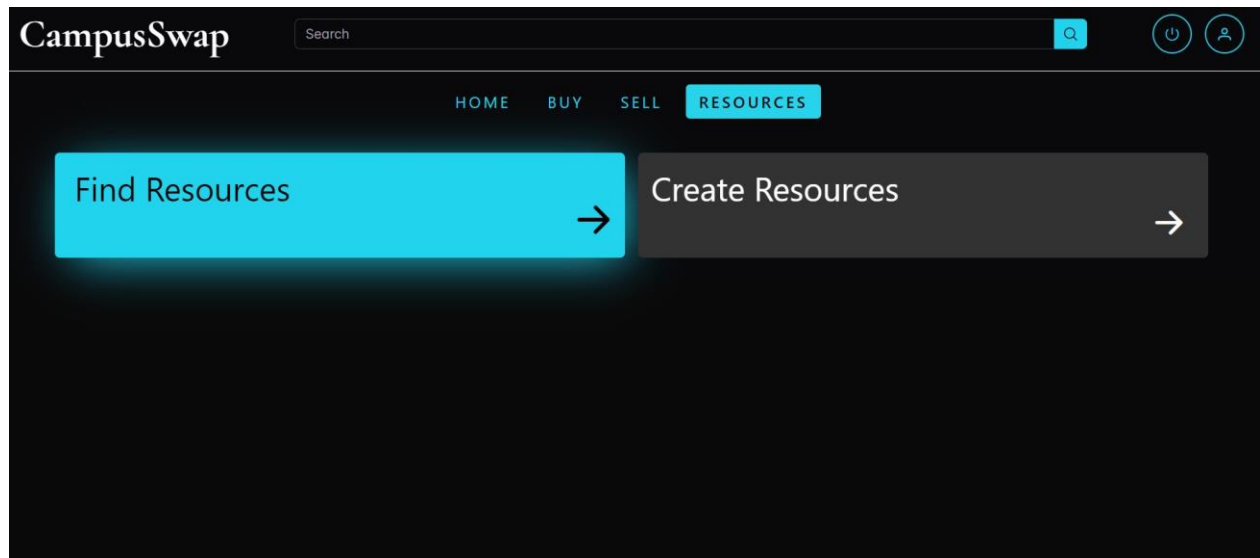


Fig. 5.3.6 Resources Page – Find Resources

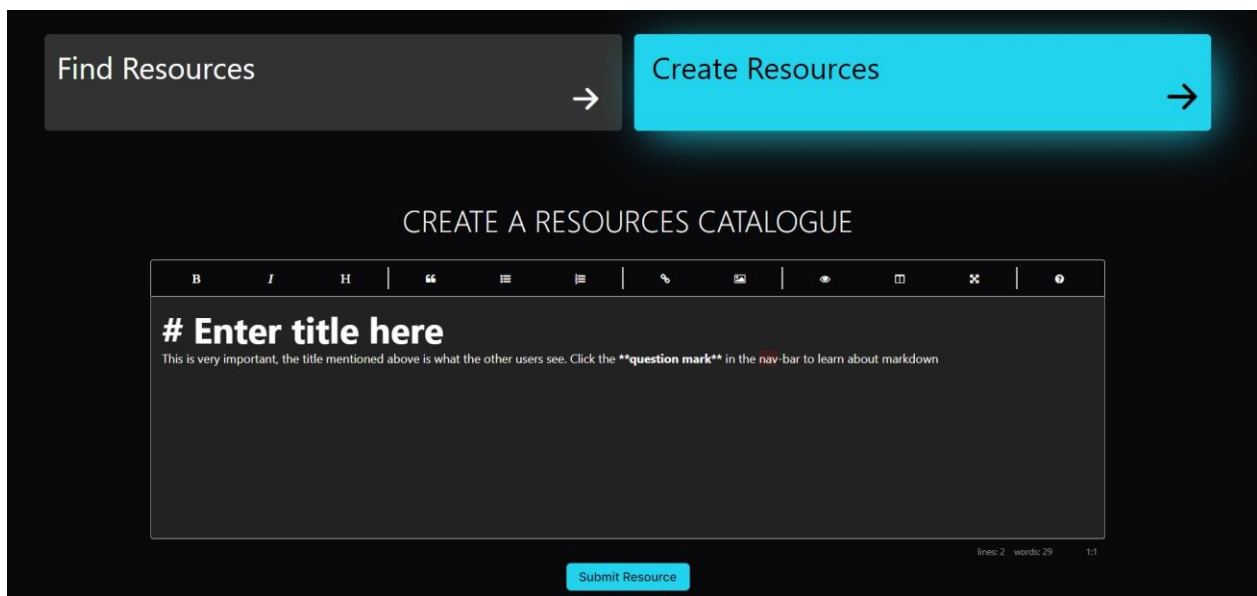


Fig. 5.3.7 Resources Page – Create Resources

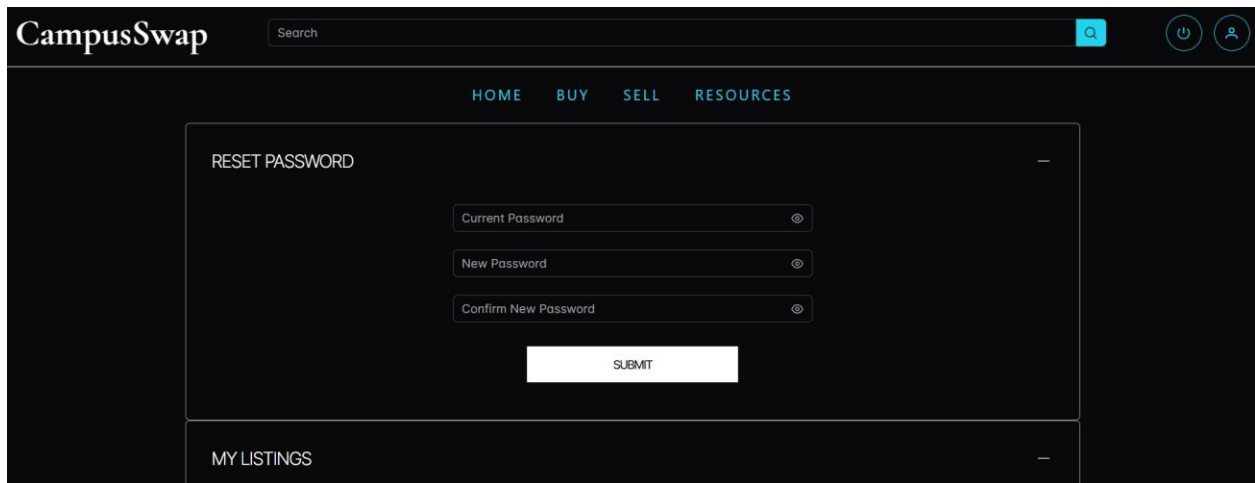


Fig. 5.3.8 The Reset Password page.

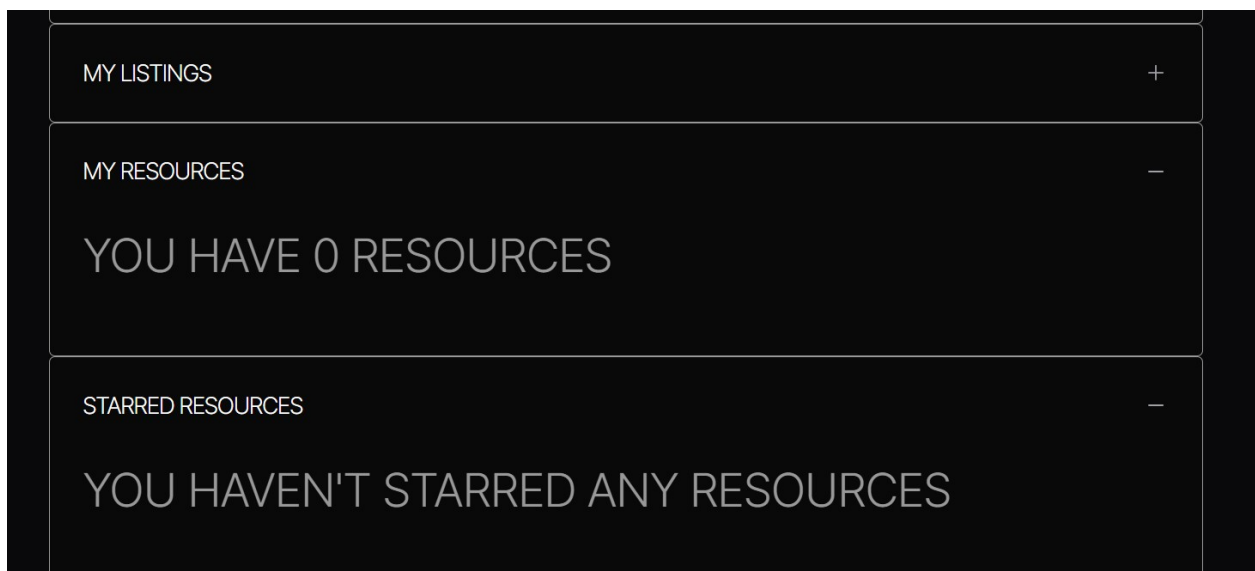


Fig. 5.3.9 Resources Dashboard

CHAPTER 6

CONCLUSION

6. CONCLUSION

In conclusion, our project aimed to develop an online marketplace tailored specifically for students within a campus environment, facilitating the exchange, purchase and sale of academic items such as textbooks, notes and equipment. Through the integration of various technologies and tools, including HTML, CSS, JavaScript, Vue.js, PrimeVue, PostgreSQL, Visual Studio Code, Git, GitHub and Anaconda, we successfully created a comprehensive solution to address the unique needs of our target users.

By leveraging HTML, CSS and JavaScript, we designed an intuitive and visually appealing user interface that enhances the browsing and shopping experience for students. Vue.js and PrimeVue allowed us to build dynamic and responsive components, enabling seamless interaction and efficient data management within the application. The integration of PostgreSQL as the backend database system ensured robust data storage and retrieval, supporting critical functionalities such as user authentication, item listings and transaction management. Anaconda facilitated the setup of a Python environment for backend development, enabling efficient handling of dependencies and ensuring compatibility across different platforms.

In summary, our project not only demonstrates the technical proficiency in utilizing a diverse set of technologies but also underscores our commitment to addressing real-world needs by providing a user-friendly and practical solution. By creating an online marketplace tailored specifically for students within a campus environment, we aim to foster a sense of community and facilitate the exchange of academic resources, ultimately contributing to the enhancement of the overall learning experience for our users.

REFERENCES

Research Papers:

[1] Mohd Fahmi Ismail, Maslina Abdul Aziz, Fatin Nur Syuhada Mohd Nor, Syaripah Ruzaini Syed Aris, Suzana Zambri. **Student online marketplace for university community**. The Indonesian Journal of Electrical Engineering and Computer Science (IJEECS) Vol 19, No 1 (2020)

<http://doi.org/10.11591/ijeecs.v19.i1.pp420-427>

[2] Woolf, B.P., Lesser, V., Eliot, C., Eyler-Walker, Z., Klein, M. **A Digital Marketplace for Education**. In: Chin, W., Patricelli, F., Milutinović, V. (eds) Electronic Business and Education. Multimedia Systems and Applications Series, vol 20. Springer, Boston, MA. (2019)

https://doi.org/10.1007/978-1-4615-1497-8_1