Final Paper for CS231

1. *Objective section*

- The primary goal of the College Marketplace Project is to create a user-friendly online platform that facilitates the buying and selling of various items within a college community.
- To develop a platform that is easy to navigate, and ensuring all transactions conducted on the platform are secure, protecting both buyers and sellers.

2. *Motivation*

- *Community and Entrepreneurship*: Enhances student community and encourages entrepreneurship by providing a platform for students to sell their creations, goods or services and learn business skills.
- *Sustainability and Convenience*: Promotes sustainability through the sale of used items and offers convenience by facilitating transactions within the safety of the student community.
- *Learning Opportunity*: Provides practical experience in web development and project management, contributing to students' skill development.

3. *Tasks*

- *Product Listings*:
  - Design the product listing form.
  - Implement functionality for users to add descriptions, prices, and images.
  - Create categories, condition, and delivery options for listings.

- *Search and Filter*:
  - Develop a search function that allows users to find items using keywords.
  - Implement filters for refining search results based on price range, location, and other criteria.
- *User Profiles*:
  - Design the user profile page.
  - Enable users to manage their listings, view their purchase history, and update personal information.
- *Messaging System*:
  - Design the messaging interface.
  - Implement functionality for buyers and sellers to communicate directly.
- *Secure Transactions*:
  - Research and implement secure transaction methods.
  - Integrate payment options such as PayPal and credit cards.

4. *Challenges*

- *Understanding Web Development Concepts*: The project involves various aspects of web development, including front-end (HTML, CSS, JavaScript), back-end (server-side programming, database management), and possibly full-stack development. These concepts can be challenging for beginners.
- *Implementing User Authentication*: Creating a secure user authentication system that protects user data is a complex task. It involves understanding encryption, session management, and secure coding practices.
- *Creating a User-Friendly Interface*: Designing an intuitive and user-friendly interface requires knowledge of user experience (UX) principles. This can be difficult without prior experience or training.

- *Ensuring Secure Transactions*: Implementing secure transactions involves understanding payment gateways, SSL certificates, and secure coding practices. Mistakes can lead to serious security issues.
- *Database Management*: Designing and managing a database to store user data, product listings, transaction details, etc., requires understanding of database management systems and SQL.
- *Time Management*: Managing time and prioritizing tasks can be challenging, especially when working on a large project with multiple features.

5. *Timeline*

- Week 1 (March 18 - March 24): Understand web development concepts and start designing the back-end architecture.
- Week 2 (March 25 - March 31): Continue with back-end development, focusing on user authentication and profile management.
- Week 3 (April 1 - April 7): Implement the database and ensure it communicates effectively with the back end.
- Week 4 (April 8 - April 14): Develop the product listing feature on the back end and start working on the search and filter functionality.
- Week 5 (April 15 - April 21): Complete the back-end work for search and filter functionality.
- Week 6 (April 22 - April 28): Start developing the messaging system on the back end.
- Week 7 (April 29 - May 5): Finish the back-end work for the messaging system and start implementing secure transactions on the back end.
- Week 8 (May 6 - May 12): Finalize secure transactions on the back end.
- Week 9 (May 13 - May 19): Start designing the user interface and implement front-end functionality for user profiles and product listings.
- Week 10 (May 20 - May 26): Implement front-end functionality for search, filter, and messaging system.

- Week 11 (May 27 - June 2): Implement front-end functionality for secure transactions and start testing.
- Week 12 (June 3 - June 4): Conduct thorough testing, fix any bugs, and prepare for project submission.

6. *Related Work*

- *Amazon Student*: This is a version of Amazon that's tailored for students. It offers a marketplace where students can buy and sell items, including secondhand textbooks.
- *Chegg*: Chegg is an online platform that allows students to rent textbooks for cheaper prices than the bookstore. It also provides help with assignments.
- *Poshmark*: Poshmark is an online marketplace where users can buy and sell clothes. It's not specifically for students, but it's used by many.
- *Facebook* Marketplace: Facebook Marketplace is a convenient destination to discover, buy and sell items with people in your community.
- *eBay*: eBay is a well-known online marketplace where users can buy and sell a wide variety of items.

7. *Future Work*

- *Reviews and Ratings*: Implement a system where buyers can rate and review sellers and their products. This can help ensure the quality of products and the reliability of sellers.
- *Advanced Search and Filter*: Enhance the search and filter functionality with more advanced options, such as searching by seller, product ratings, or delivery time.
- *Recommendation System*: Develop a recommendation system that suggests products to users based on their browsing history, purchase history, and preferences.

- *Mobile Application*: Create a mobile application for the platform to provide users with a more convenient and accessible way to browse and purchase products.
- *Integration with social media*: Allow users to share their listings on social media to increase visibility and sales.
- *Live Chat Support*: Implement a live chat support system to help users with any issues or questions they may have in real-time.
- *Promotions and Discounts*: Develop a system for sellers to offer promotions and discounts on their products.