

Group Work:

This case study offers a practical and real-world scenario for software engineering students to apply their skills, covering various aspects of software design, development, security, scalability, and maintenance. It also encourages teamwork, project management, and problem-solving.

Activity: Developing an E-Commerce Platform for a Small Business

Background:

A small local business, "Green Boutique," specializes in selling handmade and environmentally friendly products, including clothing, accessories, and home goods. Over the years, the business has gained popularity, and the owner, Jane, is looking to expand her customer base by launching an e-commerce platform. Emma envisions a user-friendly online store that will enable customers to browse, purchase, and review products. She has hired your team of software engineering students to design and develop the e-commerce platform.

Project Scope:

System Design:

Collaboratively design the architecture and database schema for the e-commerce platform.

Define user roles and permissions (admin, customer, and vendor).

Create wireframes and prototypes for the website's user interface.

Functionality:

Implement user registration and authentication.

Develop product catalog and search functionality.

Enable customers to add products to a shopping cart and proceed to checkout.

Implement a payment gateway for processing orders.

Allow vendors to upload product listings and manage their inventory.

Develop a review and rating system for products.

Security and Privacy:

Ensure secure data transmission and storage.

Implement measures to protect user data and financial information.

Incorporate user privacy controls and data access restrictions.

Scalability and Performance:

Optimize the platform for high traffic and a growing number of products.

Conduct load testing to ensure the system can handle multiple simultaneous users.

Testing and Quality Assurance:

Perform rigorous testing, including unit testing, integration testing, and user acceptance testing.

Identify and rectify software defects and vulnerabilities.

Documentation:

Prepare user manuals and system documentation for both customers and administrators.

Deployment and Maintenance:

Deploy the e-commerce platform to a web server.

Set up continuous monitoring and regular maintenance procedures.

Provide training to the client's team for ongoing content management.

Deliverables:

Detailed system design documents, including architecture diagrams and database schemas.

User-friendly web interface with a fully functional e-commerce platform.

Comprehensive user manuals and documentation.

A deployment plan and ongoing maintenance schedule.

Required

Conduct an analysis of the above scenario and come with the following:

1. The skills that you will require to do this project
2. The best process model to be used in developing this project
3. The challenges you may come across when doing this project
4. The tools that you will use to do this project
5. The data gathering techniques that you will use

6. The detailed requirement specification documents list out all the requirements e.g user requirements, functional requirements, non-functional requirement, domain requirement etc.
7. The design specification e.g architectural design