



MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY

WEB DESIGN AND DEVELOPMENT

SEMESTER PROJECT

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Identifying a Topic or Problem

My problem will be about E-commerce(helping small businesses expand their online presence)

Introduction

The rapid growth of digital economy has transformed how businesses operate, yet many small businesses in Uganda still struggle to establish an online presence. The project proposes an e-commerce platform designed specifically for small businesses to sell their products online.

Identify the problem

1. Limited market reach: Without an online presence, businesses rely only on walk-in customers.
2. High operational costs: Physical stores require rent, maintenance and staffing making them expensive.

3. Lack of digital skills: Many small business owners are unfamiliar with web technologies and online sales platform
4. Payment processing issues: Without online payment options, businesses lose potential sales from customers who prefer digital transactions.

Proposed Web-Based Solution

1. User authentication & profile management
 - Business owners can register and create an online store
 - Customers can sign up to browse and purchase products
 - Secure login/logout system with password protection.
2. Product catalog & search functionality
 - Business can upload product details (images, description, prices)
 - Customers can search and filter products based on categories.
3. Shopping cart & checkout process
 - Customers can add products to a shopping cart and proceed to checkout.
 - Multiple payment options, including PayPal, Mobile Money and credit cards.
4. Order management & tracking
 - Business owners can view and manage orders in a dashboard.
 - Customers receive order confirmation and tracking updates.
5. Mobile responsiveness
 - The platform will be fully responsive to work on smartphones, tablets and desktops.
6. Security & data protection
 - SSL encryption for secure transactions.
 - Two-factor authentication (2FA) for additional security.
 - Database encryption for user data protection.

Technology stack

Frontend technologies, backend, and database technologies to ensure efficiency and scalability.

Component	Technology
Frontend	HTML, CSS (Bootstrap), JavaScript
Backend	PHP (Laravel) or Node.js (Express)
Database	MySQL or Firebase
Hosting	GitHub Pages, Netility, or AWS
Payment Gateway	PayPal, Mobile Money API, Stripe

The system architecture will follow the **Model-View-Controller(MVC) pattern**, ensuring scalability and maintainability.

Research and References

1. Academic Articles on e-commerce adoption by small businesses.
2. MDN Web Docs for front-end development standards.
3. W3C Guidelines to ensure accessibility and usability.
4. Case Studies on successful online stores in Africa.
5. Developer Forums (Stack Overflow, GitHub Discussions)for troubleshooting and optimization tips.

Conclusion& reflection

The project aims to provide a user-friendly e-commerce for small businesses, enabling them to sell products efficiently online.

As a developer, I have gained hands on experience in **full-stack web development, API integration, and e-commerce security.**

My GitHub link: https://github.com/account_verifications/confirm/93f0c4b4-31a9-44b9-b304-9fe4ed8c96ae/31214395

Reference

- ✓ “Business, Technology and Society” Kenneth C Laudon & Carol Guercio Traver
- ✓ “The lean Startup” Eric Ries
- ✓ World Wide Web Consortium (W3C), “Web Content Accessibility Guidelines,” at <https://www.w3.org>