

PROJECT SYNOPSIS

Project Title

ShopX: A Secure Premium E-Commerce Marketplace

Introduction

ShopX is a modern e-commerce platform designed to address key challenges in security, scalability, and user experience. Traditional e-commerce systems rely on password-based authentication, which is vulnerable to cyber threats and often inconvenient for users. This project introduces a secure authentication mechanism using Email-based One-Time Password (OTP) along with a password-based login system to enhance both security and usability.

The platform is developed using Django framework for backend processing and MySQL database for scalable data management. The frontend is designed using modern UI principles to provide a premium and responsive user experience.

Problem Statement

Existing e-commerce platforms suffer from weak authentication systems that rely solely on passwords. These systems are prone to attacks such as credential stuffing and brute-force attacks. Additionally, users often face difficulties in remembering passwords, leading to poor user experience.

Moreover, many systems use non-scalable databases such as SQLite, which are not suitable for handling large-scale applications with multiple users and vendors.

Objectives

The main objectives of the project are:

- To implement a secure authentication system using Email OTP
- To provide a password-based login feature
- To design a modern and responsive user interface
- To integrate MySQL database for scalability
- To develop a secure and scalable e-commerce platform using Django

Methodology

The project follows Agile development methodology, allowing iterative development and continuous improvement. The system implements an OTP-based authentication flow where users are required to verify a one-time password sent to their registered email address.

The backend is developed using Django, which handles authentication, session management, and business logic. The frontend is designed using HTML, CSS, and Bootstrap to ensure responsiveness and usability.

Technologies Used

- Backend: Django (Python)
- Frontend: HTML, CSS, Bootstrap
- Database: MySQL
- Tools: Visual Studio Code

Expected Outcome

The project is expected to deliver a secure and scalable e-commerce platform with enhanced authentication mechanisms. Users will be able to log in securely using OTP or password.

The system will also provide a modern user interface and efficient data management, making it suitable for real-world applications.

Conclusion

The ShopX project aims to demonstrate how modern security techniques and scalable architecture can be integrated into an e-commerce platform. The implementation of OTP-based and password-based login significantly improves both security and user experience.

This project serves as a foundation for developing secure and scalable web applications in real-world scenarios.