IT PROJECT YEAR 3

FACULTY OF INFORMATION TECHNOLOGY

MOCKETSI PARKIES

Contents

1. Purpose of the Project

1.1 Introduction

The e-commerce industry has witnessed remarkable growth over the years, revolutionizing how people buy, sell, and connect globally. However, the closure of Gumtree—a once-thriving online marketplace—highlights the significant challenges that such platforms face. Gumtree struggled primarily due to liquidity issues, insufficient funding to sustain operations, and declining user engagement caused by security concerns and outdated features. These challenges left sellers and buyers alike searching for a reliable alternative.

The proposed project seeks to address these issues by creating a cutting-edge online marketplace designed to be financially sustainable, highly secure, and globally accessible. Unlike conventional platforms, this system will integrate advanced technologies to provide seamless updates, enhanced user experience, and a robust security framework that fosters trust among users.

 By leveraging innovative solutions, the new marketplace aims to reimagine how online commerce is conducted, ensuring longevity and continuous growth. By addressing the weaknesses of Gumtree, particularly in financial and security aspects, this project aims to redefine the standards of online marketplaces.

1.2 Objectives

- Developing a platform that fosters financial sustainability through diverse revenue streams, including advertising, subscription models, and transaction fees.

- Building a scalable system capable of global accessibility to accommodate diverse user bases.

- Enhancing security protocols to protect user data, transactions, and platform integrity.

- Delivering a modular design that enables effortless updates and integrations.

- Creating a user-centric interface that promotes engagement and satisfaction.

2. Implementation Language

2.1 Chosen Technologies

Frontend

React.js for interactive and scalable user interfaces.

Backend

Node.js with Express.js for reliable server-side operations and API management.

Database

MySQL or PostgreSQL for managing structured data efficiently.

Payment Processing

Integration of Stripe and PayPal to support secure transactions.

Security Measures

Implementation of OAuth for authentication, SSL encryption, and AI-driven fraud detection mechanisms.

Hosting & Deployment

Utilization of AWS or Azure cloud platforms for scalability and robust performance.

2.2 Justification for Chosen Technologies

The technologies selected ensure the platform meets modern standards for performance, usability, and security:

i. React.js offers a dynamic and responsive user experience essential for engaging users.

ii. Node.js facilitates real-time interactions, crucial for seamless communication and transactions.

iii. MySQL/PostgreSQL provides reliable and scalable data handling for an expanding marketplace.

iv. AWS/Azure guarantees high availability, security, and global reach to support diverse user demographics.

3. SDLC Model Chosen

3.1 Agile SDLC Model

The Agile approach will drive iterative development, continuous improvements, and fast adaptation to user needs and market trends.

3.2 Justification for Agile SDLC

- Encourages frequent releases and rapid integration of user feedback.

- Reduces the risk of delays or project failures through functional increments.

- Supports evolving requirements, ensuring the platform remains competitive.

4. Systems Planning and Initiation

4.1 Project Identification

Gumtree's closure highlights the need for a financially resilient and technically robust platform. This project aims to bridge the gap left by Gumtree by addressing liquidity issues and ensuring long-term sustainability. The new system will be designed to avoid similar pitfalls by prioritizing user trust, technological adaptability, and economic viability.

4.2 Project Scope

The platform will enable:

- Secure user registration and account management.

- Product listings with advanced categorization and filtering options.

- Real-time payment processing with multiple gateway integrations.

- Order management capabilities for seamless buyer-seller interactions.

- Administrative tools for oversight and system optimization.

Additional Features

In addition to the outlined functionalities, the proposed marketplace will include:

- AI-powered recommendation engines to enhance product discovery.

- Multi-language support to cater to global users.

- Analytics dashboards for sellers to track performance metrics.