NED UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Centre of Multidisciplinary Postgraduate Programmes (CMPP)

Empowering For Professional Excellence

Postgraduate Diploma (PGD) Programmes

PROPOSAL FOR POSTGRADUATE DIPLOMA (PGD) PROJECT

(To be submitted to Project Supervisor)

a. Proposed Title

Development of a Cloud-Based Point of Sale (POS) System for Multi-Branch General Stores

b. Brief Outline

This project aims to develop a comprehensive, cloud-based Point of Sale (POS) system specifically designed for general stores with multiple branches. The system will serve as a central application, enabling seamless management of sales, inventory, and product data across all locations. By leveraging the MERN (MongoDB, Express, React, Node.js) stack and Tailwind css, the application will provide a modern, responsive user interface and a robust backend. The primary goal is to centralize business operations, providing real-time data visibility and improving efficiency for store owners and managers.

c. Objectives

1. To design and develop a user-friendly, cloud-based POS application using the MERN stack and Tailwind css.
2. To implement a centralized inventory management system that tracks stock levels in real-time across multiple store branches.
3. To enable CRUD (Create, Read, Update, Delete) operations for products, allowing for easy management of the product catalog.
4. To create a functional billing module that generates receipts for customers and records sales data.
5. To ensure the application is scalable and accessible to multiple users from different locations.

d. Scope

The project will focus on the core functionalities required for a general store POS system. It will include:

1. A centralized dashboard for managing multiple store branches.Product management with CRUD operations.
2. Real-time inventory tracking across all branches.
3. A billing interface for processing sales and generating receipts.
4. User authentication to manage access levels for different store employees (e.g., cashiers, managers).

e. Methodology

The project will follow an Agile development methodology, allowing for an iterative and flexible approach. The MERN stack has been chosen for its modern capabilities and cohesive JavaScript ecosystem.

Frontend: The user interface will be built using ReactJS and Tailwind css, providing a dynamic and responsive experience.

Backend: Node.js and the Express.js framework will be used to create a RESTful API for handling data requests.

Database: MongoDB, a NoSQL database, will be used to store product, sales, and inventory data, offering scalability and flexibility.

Cloud Hosting: The application will be deployed on a cloud platform to ensure accessibility for multiple branches.

f. Expected Outcomes of the proposed project

The successful completion of this project will result in a fully functional, cloud-based POS system that can be used by general stores. The final deliverable will be a web application that demonstrates the project's ability to:Manage a central product catalog and inventory. Perform sales and generate digital or printed bills.Provide a central management view for multiple store branches.A detailed report documenting the project's design, development process, and outcomes.