



**Faculty of Cyber Physical System
Dept. of IoT and Robotics Engineering (IRE)**

Project Proposal

Project title: Cloud Kitchen Management System

Course Title: Software Engineering Lab

Course code: ICT 4354

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Abstract

This proposal outlines the development of a web application designed to streamline virtual restaurant management and facilitate online food ordering. The application will provide a user-friendly platform for customers to search for restaurants, browse menus, and place orders. For restaurant owners, it will offer tools to manage their virtual restaurants, list food items, and process orders efficiently.

Project Objectives

- Develop a scalable and user-friendly web application for cloud kitchen management.
- Enable customers to filter restaurants, browse menus, and place orders online.
- Provide virtual restaurant or cloud kitchen owners with a platform to manage their virtual restaurants, list food items, and process orders efficiently.
- Integrate with payment gateways to facilitate secure online transactions.

Target Audience

- **Customers:** Individuals seeking to order food online from local restaurants.
- **Restaurant Owners:** Businesses looking to expand their reach through online ordering.

Proposed Features

Customer-Facing Features:

- **User Registration and Login:** Users can create accounts and log in to the application.
- **Restaurant Search:** Users can search for restaurants by location, cuisine, or other criteria.
- **Menu Browsing:** Users can view detailed menus with descriptions, prices, and images.
- **Food Ordering:** Users can select food items, customize orders, and add them to their carts.
- **Checkout and Payment:** Users can proceed to checkout, enter payment information, and complete their orders.
- **Order Tracking:** Users can track the status of their orders and receive notifications.

Restaurant Owner Features:

- **Restaurant Registration:** Restaurant owners can create virtual restaurants and provide detailed information.
- **Menu Management:** Restaurant owners can add, edit, and remove food items from their menus.
- **Order Management:** Restaurant owners can view and manage incoming orders, update order status, and communicate with customers.
- **Analytics:** Restaurant owners can access data on sales, customer preferences, and peak ordering times.

Technology Stack

- **Frontend:** React Native or Next.js
- **Backend:** Node.js with Express.js or a similar framework
- **Database:** MongoDB or PostgreSQL
- **State Management:** Redux or Context API or Zustand
- **Authentication:** Firebase Authentication or JWT
- **Payment Gateway:** Stripe

Conclusion

This project proposal outlines a comprehensive solution for restaurant management and online food ordering. By providing a user-friendly platform for both customers and restaurant owners, the application aims to enhance the dining experience and drive business growth.