# COMPUTER AND INFORMATION SCIENCES

# Java Chip

May 2024

TFB1033/TEB1043

## Object Oriented Programming
## Java Application Project
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## 1.0 Introduction

### 1.1 Purpose

The purpose of this proposal is to outline the development of an object-oriented coffee shop management system named "Java Chip." This system aims to streamline the operations of a coffee shop, enhancing efficiency, customer experience, and overall business management through the use of modern software development practices.

### 1.2 Problem Statement

Running a coffee shop involves managing numerous tasks such as order processing, inventory management, staff scheduling, and customer loyalty programs. Traditional manual methods or disjointed software solutions can lead to inefficiencies, errors, and customer dissatisfaction. Java Chip aims to address these challenges by providing a unified and robust management system.

### 1.3 Solution

Java Chip will be developed as an object-oriented software application, leveraging the principles of encapsulation, inheritance, and polymorphism to create a modular, maintainable, and scalable system. This system will include features such as order management, inventory tracking, employee scheduling, customer management, and sales reporting. By integrating these functionalities into a single platform, Java Chip will improve operational efficiency and enhance the customer experience.

## 2.0 Identify Needs & Establishing Requirements

## 2.1 Scope of Target Audience

Java Chip is designed for small to medium-sized coffee shops that aim to modernize their operations and enhance customer satisfaction. The target audience includes coffee shop owners and managers looking for an all-in-one solution to manage their business more effectively. Additionally, the system can cater to customers seeking a seamless and personalized coffee shop experience.

## 2.2 Functional Requirements

**Order Management:**

Customers can place orders for coffee and other menu items.

Orders can be customized based on customer preferences.

Staff can manage and track orders in real-time.

**Inventory Management:**

Track inventory levels of ingredients and supplies.

Automatically update inventory based on sales and usage.

Generate alerts for low stock levels.

**Employee Management:**

Manage employee information, roles, and schedules.

Track employee hours and generate payroll reports.

Assign tasks and monitor performance.

**Customer Management:**

Maintain a database of customer information.

Implement a loyalty program to reward frequent customers.

Send promotions and updates to customers.

**Sales and Reporting:**

Generate daily, weekly, and monthly sales reports.

Analyze sales data to identify trends and opportunities.

Provide financial summaries and forecasts.

## 3.0 Conclusion

Developing the Java Chip coffee shop management system using object-oriented programming principles will provide a comprehensive solution to the operational challenges faced by coffee shops. By integrating key functionalities into a single, cohesive system, Java Chip will enhance efficiency, improve customer satisfaction, and support the growth and success of coffee shop businesses.