LAB 5 TASKS ASSIGNMENT

MUHAMMAD ARSAL

2022350

# Code Logic Explanation

This C++ code uses a queue to model a supermarket checkout process. It initializes a queue to represent the checkout line, adds customers, serves them in a first-in-first-out order, and prints the order of service. The program will also handle edge cases, such as an empty queue, and communicate relevant messages throughout the process.

//MUHAMMAD ARSAL

//2022350

#include <iostream>

#include <queue>

using namespace std; // Use the standard namespace for convenience.

int main() {

    // Step 1: Initialize a queue to represent the checkout line.

    queue<string> checkoutQueue;

    // Step 2: Simulate the arrival of customers by adding them to the queue.

    checkoutQueue.push("Customer 1");

    checkoutQueue.push("Customer 2");

    checkoutQueue.push("Customer 3");

    // Step 3: Simulate the serving of customers by removing them from the queue.

    while (!checkoutQueue.empty()) {

        // Print the customer being served.

        cout << "Serving: " << checkoutQueue.front() << endl;

        // Remove the served customer from the queue.

        checkoutQueue.pop();

    }

    // Step 4: Print a message when the checkout queue is empty.

    if (checkoutQueue.empty()) {

        cout << "Checkout queue is empty. No more customers." << endl;

    }

    return 0;}

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The program also handles edge cases, such as an empty queue, and communicates

relevant messages throughout the process.

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