#include <iostream>

using namespace std;

class CircularQueue {

private:

    string\* queue;

    int front, rear, capacity;

public:

    CircularQueue(int size) {

        queue = new string[size];

        capacity = size;

        front = rear = 0;

    }

    ~CircularQueue() {

        delete[] queue;

    }

    int isFull() {

        return (rear + 1) % capacity == front;

    }

    int isEmpty() {

        return front == rear;

    }

    void enqueue(const string& customerName) {

        if (isFull()) {

            cout << "Checkout counter is full. Please wait." << endl;

            return;

        }

        queue[rear] = customerName;

        rear = (rear + 1) % capacity;

        cout << "Customer '" << customerName << "' has arrived." << endl;

    }

    void dequeue() {

        if (isEmpty()) {

            cout << "No customers in line." << endl;

            return;

        }

        cout << "Customer '" << queue[front] << "' has checked out." << endl;

        front = (front + 1) % capacity;

    }

    void closeCounter() {

        cout << "Checkout counter is closed." << endl;

        front = rear = 0; // Reset the queue

    }

    void viewCustomers() {

        if (isEmpty()) {

            cout << "No customers in line." << endl;

            return;

        }

        cout << "Current Customers in Line:" << endl;

        int i = front;

        while (i != rear) {

            cout << "- " << queue[i] << endl;

            i = (i + 1) % capacity;

        }

    }

};

int main() {

    int size;

    cout << "Enter the size of the checkout queue: ";

    cin >> size;

    CircularQueue checkoutQueue(size);

    int choice;

    string customerName;

    do {

        cout << "\nSupermarket Checkout System\n";

        cout << "1. Customer Arrival\n";

        cout << "2. Customer Checkout\n";

        cout << "3. Close Checkout Counter\n";

        cout << "4. View Customers\n";

        cout << "5. Exit\n";

        cout << "Enter your choice: ";

        cin >> choice;

        switch (choice) {

            case 1:

                cout << "Enter customer name: ";

                cin.ignore();

                getline(cin, customerName);

                checkoutQueue.enqueue(customerName);

                break;

            case 2:

                checkoutQueue.dequeue();

                break;

            case 3:

                checkoutQueue.closeCounter();

                break;

            case 4:

                checkoutQueue.viewCustomers();

                break;

            case 5:

                cout << "Exiting the system." << endl;

                break;

            default:

                cout << "Invalid choice. Please try again." << endl;

        }

    } while (choice != 5);

    return 0;

}