#include <iostream>

#include <string>

using namespace std;

// Struct to represent a pizza

struct Pizza {

string name;

int price; // Price in rupees

};

// Class to implement a simple circular queue

class PizzaQueue {

private:

int front, rear, capacity;

Pizza\* queue;

public:

PizzaQueue(int size) {

capacity = size;

queue = new Pizza[capacity];

front = rear = -1;

}

~PizzaQueue() {

delete[] queue;

}

bool isEmpty() {

return front == -1;

}

bool isFull() {

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

}

void enqueue(Pizza pizza) {

if (isFull()) {

cout << "Order queue is full. Cannot place more orders.\n";

return;

}

if (isEmpty()) {

front = rear = 0;

} else {

rear = (rear + 1) % capacity;

}

queue[rear] = pizza;

cout << "Order placed: " << pizza.name << "\n";

}

void dequeue() {

if (isEmpty()) {

cout << "No pending orders.\n";

return;

}

cout << "Processing order for: " << queue[front].name << "\n";

if (front == rear) {

front = rear = -1;

} else {

front = (front + 1) % capacity;

}

}

};

// Function to display the pizza menu

void displayMenu(Pizza menu[], int size) {

cout << "\n--- Pizza Menu ---\n";

for (int i = 0; i < size; ++i) {

cout << i + 1 << ". " << menu[i].name << " - ₹" << menu[i].price << "\n";

}

cout << "------------------\n";

}

// Function to place an order

void placeOrder(PizzaQueue& orderQueue, Pizza menu[], int size) {

int choice;

cout << "Enter the number of the pizza you want to order: ";

cin >> choice;

if (choice < 1 || choice > size) {

cout << "Invalid choice. Please try again.\n";

return;

}

orderQueue.enqueue(menu[choice - 1]);

}

int main() {

// Array to hold menu items

Pizza menu[] = {

{"Margherita", 650},

{"Pepperoni", 800},

{"BBQ Chicken", 950},

{"Veggie Delight", 700},

{"Hawaiian", 850}

};

int menuSize = sizeof(menu) / sizeof(menu[0]);

PizzaQueue orderQueue(5); // max 5 orders in queue

int choice;

while (true) {

cout << "\n--- Pizza Ordering System ---\n";

cout << "1. View Menu\n";

cout << "2. Place Order\n";

cout << "3. Process Next Order\n";

cout << "4. Exit\n";

cout << "Choose an option: ";

cin >> choice;

switch (choice) {

case 1:

displayMenu(menu, menuSize);

break;

case 2:

placeOrder(orderQueue, menu, menuSize);

break;

case 3:

orderQueue.dequeue();

break;

case 4:

cout << "Exiting...\n";

return 0;

default:

cout << "Invalid choice. Please try again.\n";

}

}

}