#include <stdio.h>

#include <stdlib.h>

#define SIZE 5 // Maximum size of queue

int queue[SIZE];

int front = -1, rear = -1;

// ENQUEUE function

void enqueue(int item) {

if (rear == SIZE - 1) {

printf("Queue Overflow! Cannot insert %d\n", item);

return;

}

if (front == -1) {

front = 0; // first element

}

rear++;

queue[rear] = item;

printf("Enqueued: %d\n", item);

}

// DEQUEUE function

void dequeue() {

if (front == -1 || front > rear) {

printf("Queue Underflow! Cannot delete.\n");

return;

}

printf("Dequeued: %d\n", queue[front]);

front++;

if (front > rear) { // reset queue when empty

front = rear = -1;

}

}

// DISPLAY function

void display() {

if (front == -1) {

printf("Queue is Empty!\n");

return;

}

printf("Queue elements: ");

for (int i = front; i <= rear; i++) {

printf("%d ", queue[i]);

}

printf("\n");

}

// Main menu-driven program

int main() {

int choice, item;

while (1) {

printf("\n--- Queue Menu ---\n");

printf("1. ENQUEUE\n2. DEQUEUE\n3. DISPLAY\n4. EXIT\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice) {

case 1:

printf("Enter element to enqueue: ");

scanf("%d", &item);

enqueue(item);

break;

case 2:

dequeue();

break;

case 3:

display();

break;

case 4:

exit(0);

default:

printf("Invalid choice! Try again.\n");

}

}

return 0;

}