Week 4

Circular queue

#include <stdio.h>

#include <stdlib.h>

#define N 5

int cq[N];

int front = -1, rear = -1;

void enque(int x);

void deque();

void display();

void enque(int x) {

if ((rear + 1) % N == front) {

printf("Queue is full\n");

return;

}

if (front == -1 && rear == -1) {

front = 0;

rear = 0;

cq[rear] = x;

} else {

rear = (rear + 1) % N;

cq[rear] = x;

}

}

void deque() {

if (front == -1 && rear == -1) {

printf("Queue is empty\n");

return;

} else if (front == rear) {

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

front = -1;

rear = -1;

} else {

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

front = (front + 1) % N;

}

}

void display() {

printf("Ruqaiyya Mahreen 1BM23EE044\n");

if (front == -1 && rear == -1) {

printf("Empty queue\n");

return;

} else {

printf("Queue is: \n");

int i = front;

while (i != rear) {

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

i = (i + 1) % N;

}

printf("%d\n", cq[rear]);

}

}

int main() {

enque(44);

enque(2);

enque(3);

enque(1);

enque(4);

deque();

enque(100);

display();

return 0;

}

