3. b Program to simulate the working of a circular queue

#include<stdio.h>

#define size 5

int items[size];

int f = -1, r= -1;

int isFull(){

if(( f == r+1) || (f==0 && r==size -1))

return 1;

return 0;

}

int isEmpty(){

if(f== -1)

return 1;

return 0;

}

void enqueue(int ele){

if (isFull())

printf("\n QUEUE IS FULL !!\n");

else{

if(f==-1)

f=0;

r = (r+1) % size;

items[r] = ele;

printf("\n INSERTED -> %d",ele);

}

}

int dequeue(){

int ele;

if(isEmpty()){

printf("\nQueue is empty!!\n");

return(-1);

}

else{

ele = items[f];

if( f==r){

f = -1;

r = -1;

}

else{

f = (f+1)%size;

}

printf("\nDeleted element -> %d\n", ele);

return(ele);

}

}

void display(){

int i;

if(isEmpty())

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

else{

printf("\n Front = %d",f);

printf("\n Items = ");

for(i=f; i!= r; i=(i+1)%size){

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

}

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

printf("\nRear = %d \n",r);

}

}

main()

{

int ch,x;

printf("DISHA D S, 1BM23CS094\n");

while(1)

{

printf("1.INSERT\n");

printf("2.DELETE\n");

printf("3.DISPLAY\n");

printf("4.EXIT\n");

printf("Enter your choice: ");

scanf("%d",&ch);

switch(ch)

{

case 1:

printf("\nENTER THE ELEMENT TO BE INSERTED: ");

scanf("%d",&x);

enqueue(x); break;

case 2: dequeue(); break;

case 3: display(); break;

case 4: exit(10);

default: printf("INVALID CHOICE \n");

}

}

}



