**OBJECTIVE:**-To implement circular queue using c

#include <stdio.h>

#include <stdlib.h>

#define maxsize 50

void insert();

void delete ();

void display();

int front = -1, rear = -1;

int queue[maxsize];

void main()

{

int choice;

while (choice != 4)

{

printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Main Menu\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

printf("\n=================================================================\n");

printf("\n1.insert an element\n2.Delete an element\n3.Display the queue\n4.Exit\n");

printf("\nEnter your choice ?");

scanf("%d", &choice);

switch (choice)

{

case 1:

insert();

break;

case 2:

delete ();

break;

case 3:

display();

break;

case 4:

exit(0);

break;

default:

printf("\nEnter valid choice??\n");

}

}

}

void insert()

{

int item;

printf("\nEnter the element\n");

scanf("%d", &item);

if ((rear + 1) % maxsize == front)

{

printf("\nOVERFLOW");

return;

}

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

{

front = 0;

rear = 0;

}

else if (rear == maxsize - 1 && front != 0)

{

rear = 0;

}

else

{

rear = (rear + 1) % maxsize;

}

queue[rear] = item;

printf("\nValue inserted ");

}

void delete ()

{

int item;

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

{

printf("\nUNDERFLOW\n");

return;

}

else if (front == rear)

{

front = -1;

rear = -1;

}

else if (front == maxsize - 1)

{

front = 0;

}

else

front = front + 1;

}

void display()

{

int i;

if (front == -1)

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

else

{

i = front;

printf("\nCircular Queue Elements are : \n");

if (front <= rear)

{

while (i <= rear)

printf("%d %d %d\n", queue[i++], front, rear);

}

else

{

while (i <= maxsize - 1)

printf("%d %d %d\n", queue[i++], front, rear);

i = 0;

while (i <= rear)

printf("%d %d %d\n", queue[i++], front, rear);

}

}

}

**Output:-**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Main Menu\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

=================================================================

1.insert an element

2.Delete an element

3.Display the queue

4.Exit

Enter your choice ?1

Enter the element

12 22 33 44

Value inserted