

CIRCULAR

```
#include<stdio.h>
#include<stdlib.h>

#define que_size 5
int item,front=0,rear=-1,q[que_size],count=0;
void insertrear()
{
    if(count==que_size)
    {
        printf("queue overflow\n");
        return;
    }
    printf("enter the element to be inserted\n");
    scanf("%d",&item);
    rear=(rear+1)%que_size;
    q[rear]=item;
    count++;
}
void deletefront()
{
    if(count==0) {
        printf("Queue is EMPTY\n");
    }
    else{

        item = q[front];
        printf("The ITEM deleted is = %d \n",item);
        front=(front+1)%que_size;
        count=count-1;
    }

}
void displayq()
{
    int i,f;
    if(count==0)
    {
        printf("Queue is Empty\n");
        return;
    }
    f=front;
    printf("ITEMS of Queue \n");
    for(i=0;i<=count;i++)
    {
        printf("%d\t",q[f]);
        f=(f+1)%que_size;
    }
}
int main()
{
```

```

    int choice;
    for(;;)
    {
        printf("\n Enter the choice of Operation \n1.INSERT REAR
\n2.DELETE FRONT \n3.DISPLAY  \n4.EXIT \n ");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:insertrear();
                break;
            case 2:deletefront();
                break;
            case 3:displayq();
                break;
            default:exit(0);
        }
    }
}

```

```

2
The ITEM deleted is = 54

Enter the choice of Operation
1.INSERT REAR
2.DELETE FRONT
3.DISPLAY
4.EXIT
2
The ITEM deleted is = 32

Enter the choice of Operation
1.INSERT REAR
2.DELETE FRONT
3.DISPLAY
4.EXIT
2
Queue is EMPTY

Enter the choice of Operation
1.INSERT REAR
2.DELETE FRONT
3.DISPLAY
4.EXIT
1
enter the element to be inserted
54

Enter the choice of Operation
1.INSERT REAR
2.DELETE FRONT
3.DISPLAY
4.EXIT
1
enter the element to be inserted
54

Enter the choice of Operation
1.INSERT REAR
2.DELETE FRONT
3.DISPLAY
4.EXIT
189

```

PRIORITY

```

#include <stdio.h>
#include<stdlib.h>
#define MAX_SIZE 5

int Pque[MAX_SIZE];
int n=-1;
void enqueue(int);
int dequeue();
void display();
int main(int argc, char **argv)
{

```

```

int option, item;
do{

    printf("\n1. Enqueue\n");
    printf("2. Dequeue\n");
    printf("3. Display\n");
    printf("4. Exit\n");
    printf("Enter the option:");
    scanf("%d",&option);
    switch(option)
    {
        case 1: printf("\nEnter the item:");
                scanf("%d",&item);
                enqueue(item);
                break;
        case 2: item=dequeue();
                printf("Removed element is : %d\n",item);
                break;
        case 3: display();
                break;
        case 4: exit(0);
    }
}while (option!=4);
}

void enqueue(int item) {
    // Check if the queue is full
    if (n == MAX_SIZE - 1) {
        printf("%s\n", "ERROR: Queue is full");
        return;
    }
    n++;
    Pque[n] = item;
}

// removes the item with the maximum priority
// search the maximum item in the array and replace it with
// the last item
int dequeue() {
    int item;
    // Check if the queue is empty
    if (n == -1) {
        printf("%s\n", "ERROR: Queue is empty");
        return -999999;
    }
    int i, max = 0;
    // find the maximum priority
    for (i = 1; i <= n; i++) {
        if (Pque[max] < Pque[i]) {
            max = i;
        }
    }
}

```

```
        item = Pque[max];

        // replace the max with the last element
        Pque[max] = Pque[n];
        n = n - 1;
        return item;
    }

void display()
{
    int i;
    if(n==-1)
        printf("Queue is empty");
    printf("The Content:");
    for(i=0;i<=n;i++)
        printf(" %d",Pque[i]);
}
```

```
1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:1

Enter the item:25

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:1

Enter the item:45

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:1

Enter the item:78

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:3
The Content: 25 45 78

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:2
Removed element is : 78

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:2
Removed element is : 45

1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter the option:2
Removed element is : 25
```