PRACTICAL-6

Write a program to implement Circular Queue using arrays that performs the following operations.

(a)INSERT (b)DELETE (c)DISPLAY

SOURCE CODE:

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

#define N 2
int r=-1,f=-1,queue[N];

void insert();
void del();
int i;
void main()
{
        Int ch;
        while(1)
        {

        printf("\n What operation would you like to do on your queue?");
        printf("\n 1. INSERT");
        printf("\n 2. DELETE");
        printf("\n 3. EXIT");
        printf("\n Enter choice :");
        scanf("%d",&ch);
        switch(ch)
```

```
        {
                case 1:
                        insert();
                        break;
                case 2:
                        del();
                        break;
                case 3:
                        exit(0);
        }
        }
}
void insert(void)

{
 if((f==0 && r==N-1) || (f==r+1))
    {
         printf("\n Overflow");
         return;
     }
else
    {
        if(f==-1)
        f=r=0;
       else if(r==N-1)
       r=0;
else
         r=r+1;
         printf("\n Enter element :");
```

```
            scanf("%d",&queue[r]);
              printf("\n Elements in queue are:");
             if(f<=r)
              for(i=f;i<=r;i++)
             printf("%d ",queue[i]);
            else
        {
              for(i=f;i<=N-1;i++)
              printf("%d ",queue[i]);
             for(i=0;i<=r;i++)
             printf("%d ",queue[i]);
        }
     }
}

void del(void)
{
            int item;
            if(f==-1)
            {
                        printf("\n Underflow");

                        return;
            }
            item = queue[f];
            if(f==r)
              f=r=-1;
            else if(f==N-1)
              f=0;
```

```
        else
          f=f+1;
          printf("\n Elements in queue are:");
        if(f<=r)
             for(i=f;i<=r;i++)
            printf("%d ",queue[i]);
        else
        {
            for(i=f;i<=N;i++)
            printf("%d ",queue[i]);
            for(i=1;i<=r;i++)
            printf("%d ",queue[i]);
        }
}
```

OUTPUT:

```
What operation would you like to do on your queue
1. INSERT
2. DELETE
3. EXIT
Enter choice :1

Enter element :2

Elements in queue are:2
What operation would you like to do on your queue
1. INSERT
2. DELETE
3. EXIT
Enter choice :1

Enter element :3

Elements in queue are:2 3
What operation would you like to do on your queue
1. INSERT
2. DELETE
3. EXIT
Enter choice :1

Overflow
```

```
Overflow
What operation would you like to do on your queue
1. INSERT
2. DELETE
3. EXIT
Enter choice :2

Elements in queue are:3
```