WAP to simulate the working of a circular queue of integers using an array. Provide the following operations.
a) Insert
b) Delete
c) Display
This program should print appropriate message for queue empty and queue overflow conditions.

```
#include <stdio.h>
#include <conio.h>
#include <stdlib.h>
#define QUE_SIZE 3
int item, front = 0, rear = -1, q[QUE_SIZE], count = 0;
void insertrear ( )

{
 if (count == QUE_SIZE)
  {
   printf ("queue overflow \n");
   return;

  }
 rear = (rear+1) % QUE_SIZE;
 q[rear] = item;
 count++;
}
int deletefront()
{
 if (count == 0) return -1;
 item = q[front];
 front = (front+1)% QUE_SIZE;
 count = count - 1;
 return item;
}
```

```
void displayq()
{
 int i,j;
 if(count==0)
 {
   printf("queue is empty\n");
   return;
 }
 j=front;
 printf("contents of queue\n");
 for(i=1; i<=count; i++)
 {
   printf("%d\n",q[j]);
   j=(j+1)%QUE_SIZE;
 }
}
void main()
{
 int choice;
 for(;;)
 {
   printf("\n 1:insert rear\n2:delete front\n3:display\n4:exit\n
   printf("enter the choice\n");
   scanf("%d",&choice);
   switch(choice)
   {
    case 1: printf("enter the item to be inserted\n");
            scanf("%d",&item);
            insertrear();
            break;
    case 2: item=deletefront();
            if(item==-1)
            printf("queue is empty\n");
            else
            printf("item deleted=%d\n",item);
            break;
```

```
        case 3: display Q();
                break;
         default: exit(0);
        }
     }
}
```