LAB 3 EXECUTION:SIMULATE THE WORKING OF A QUEUE OF INTEGERS WITH BASIC OPERATIONS

```
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#define QUE_SIZE 3
int front=0,rear=-1,c=0;
char item[30];
struct
{
   char s[30];
}q[10];
void insertrear()
{
   if(rear == QUE_SIZE - 1)
   {
      printf("-------------------\n");
      printf("Queue OVERFLOW!!\n");
      printf("-------------------\n");
      return;
   }
```

```
    rear++;


    strcpy(q[rear].s,item);
}
int deletefront()
{
    if(front>rear)
    {
        front = 0;
        rear = -1;
        return -1;
    }
    strcpy(item,q[front++].s);
}
void displayQ()
{
    if(front>rear)
    {
        printf("-------------------\n");
        printf("Queue is empty\n");
        printf("-------------------\n");
        return;
```

```
    }
    printf("Contents of Queue\n");
    for(int i = front;i<=rear;i++)
    {
        puts(q[i].s);
    }
}
void main()
{
    int choice;
    for(;;)
    {
        printf("Enter \n1.for insertion\n2.for deletion\n3.for display\n4.exit\n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1: printf("Enter the item to be inserted\n");
                    scanf("%s",&item);
                    insertrear();
                    break;
            case 2: c = deletefront();
                    if(c == -1)
```

```
            {
               printf("-------------------\n");
               printf("Queue is empty\n");
               printf("-------------------\n");
            }
            else
               printf("Item deleted = %s\n",item);
            break;
        case 3: displayQ();
            break;
        default: exit(0);
      }
   }
}
```

OUTPUT:

1.INSERTION

```
Enter
1.for insertion
2.for deletion
3.for display
4.exit
1
Enter the item to be inserted
2
Enter
1.for insertion
2.for deletion
3.for display
4.exit
1
Enter the item to be inserted
3
Enter
1.for insertion
2.for deletion
3.for display
4.exit
1
Enter the item to be inserted
4
--------------------
Queue OVERFLOW!!
--------------------
```

2.Deletion

```
Enter
1.for insertion
2.for deletion
3.for display
4.exit
2
Item deleted = 1
Enter
1.for insertion
2.for deletion
3.for display
4.exit
3
Contents of Queue
2
3
```

3.Display

```
1.for insertion
2.for deletion
3.for display
4.exit
3
Contents of Queue
1
2
3
```