LAB-3-PROGRAM

```
#include <stdio.h>
#include <stdlib.h>
#define Q_SIZE 3
int item,front=0,rear=-1,q[5];
void insert()
{
   if(rear==Q_SIZE -1)
   {
    printf("queue overflow\n");
    printf("contents of queue are:\n");
    for(int i=front;i<=rear;i++)
    {
      printf(" %d \n",q[i]);
    }
    return;
   }
   rear = rear + 1;
   q[rear]=item;
}
int delete()
{
   if(front>rear)
   {
      front = 0;
      rear = -1;
      return -1;
   }
   return q[front++];
}
void display()
{
   int i;
   if(front>rear)
   {
      printf("queue is empty");
      return;
   }
   printf("contents of queue are:\n");
   for(i=front;i<=rear;i++)
   {
      printf(" %d \n",q[i]);
   }
}
void main()
{
```

```
    int choice;
    for(;;)
    {
       printf(" \n1.insert rear\t"
                "2.delete front\t"
                "3.display \t"
                "4.exit\n");
      printf("\nEnter your choice:");
      scanf("%d",&choice);
      switch(choice)
      {
         case 1:printf("Enter item to be inserted:\n");
                scanf("%d",&item);
                insert();
                break;
         case 2: item = delete();
                if(item == -1)
                printf("queue is empty");
                else
                printf("item deleted is %d\n",item);
                break;
         case 3:display();
                break;
         default:exit(0);
      }
    }
}
```

```
1.insert rear   2.delete front  3.display       4.exit

Enter your choice:1
Enter item to be inserted:
10

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:1
Enter item to be inserted:
20

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:1
Enter item to be inserted:
30

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:3
contents of queue are:
 10
 20
 30
```

```
1.insert rear   2.delete front  3.display       4.exit

Enter your choice:1
Enter item to be inserted:
40
queue overflow
contents of queue are:
 10
 20
 30

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:2
item deleted is 10

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:2
item deleted is 20

1.insert rear   2.delete front  3.display       4.exit

Enter your choice:2
item deleted is 30
```

```
1.insert rear   2.delete front  3.display       4.exit

Enter your choice:2
queue is empty
1.insert rear   2.delete front  3.display       4.exit

Enter your choice:4


...Program finished with exit code 0
Press ENTER to exit console.
```