LAB-3 PROGRAM

Write a Program to simulate the working of queue of integers using an array. Provide the following operations.

a) Insert Rear

b) Delete Front

c) Display the contents of queue

The program should print the appropriate messages for a queue empty and queue full condition.

CODE:

```
#include<stdio.h>

#include<conio.h>

#define QUE_SIZE 5

int item,front=0,rear=-1,q[10];

void insertrear()

{

   if(rear==QUE_SIZE-1)

   {

      printf("queue overflow\n");
```

```
        return;

    }

    rear=rear+1;

    q[rear]=item;

}

int deletefront()

{

    if(front>rear)

    {

        front=0;

        rear=-1;

        return-1;

    }
```

```
    return q[front++];

}

void displayQ()

{

    int i;

    if(front>rear)

    {

        printf("queue is empty\n");

        return;

    }

    printf("Contents of queue\n");

    for(i=front;i<=rear;i++)
```

```
    {

        printf("%d\n",q[i]);

    }

}

void main()

{

    int choice;



    for(;;)

    {

        printf("\n1:insertrear\n2:deletefront\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:displayQ();
```

```
            break;

        default:return;

}


}

}
```

```
1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted
1

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
2
item deleted =1

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
2
queue is empty

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
```

```
enter the item to be inserted
5

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted
6
queue overflow

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
3
Contents of queue
1
2
3
4
5

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
```