lab_3.c

```c
/*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.
*/
#include<stdio.h>
#include<conio.h>
#include<process.h>
#define QUE_SIZE 3
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(){
```

lab_3.c

```
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.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 items 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: exit(0);
}
}
}
```

```
1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
1
Enter the items to be inserted
10

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
1
Enter the items to be inserted
20

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
1
Enter the items to be inserted
30

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
3
**Contents of Queue**
 10
 20
 30

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
1
Enter the items to be inserted
40
QUEUE OVERFLOW

1.Insert Rear
```

```
1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
3
**Contents of Queue**
 10
 20
 30

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
Item Deleted = 10

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
Item Deleted = 20

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
Item Deleted = 30

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
QUEUE IS EMPTY

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
3
```

```
Item Deleted = 10

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
Item Deleted = 20

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
Item Deleted = 30

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
2
QUEUE IS EMPTY

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
3
QUEUE IS EMPTY

1.Insert Rear
2.Delete front
3.Display
4.Exit
Enter the choice
4

Process returned 0 (0x0)   execution time : 72.916 s
Press any key to continue.
```