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```c
/*WAP to simulate the working of a queue of integers using an array. Provide the following
operations
a) Insert b) Delete c) Display
The program should print appropriate messages for queue empty and queue overflow
conditions*/
#include<stdio.h>
#include<process.h>
#define QUE_SIZE 3
int item,front=0,rear=-1,q[10];
void insert(){
if(rear==QUE_SIZE-1){
    printf("Queue Overflow\n");
    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\n");
        return;
    }
    printf("Contents of queue:\n");
    for(i=front;i<=rear;i++)
    printf("%d\n",q[i]);
}
```

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```
34      printf("%d\n",q[i]);
35  }
36  int main(){
37      int count=0;
38      int choice;
39      for(;;){
40          printf("\n1.insert\n2.delete\n3.display\n4.display size of queue\n5.exit\n");
41          printf("Enter your choice\n");
42          scanf("%d",&choice);
43          switch(choice){
44              case 1:{
45              printf("Enter the item to be inserted\n");
46              scanf("%d",&item);
47              insert();
48              count++;
49              break;}
50              case 2:
51                  item=delete();
52                  if(item==-1)
53                  printf("Queue is empty");
54                  else
55                  printf("Item deleted is %d\n",item);
56                  count--;
57                  break;
58              case 3:display();
59              break;
60              case 4:
61              printf("The size of the queue is %d",QUE_SIZE);
62              break;
63              default:
64              exit(0);
65          }
66      }
67      return 0;
68  }
```

line: 34 / 68 col: 0 sel: 0 INS TAB MOD mode: CRLF encoding: UTF-8 filetype: C scope: display

```
1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
4
The size of the queue is 3
1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
1
Enter the item to be inserted
1

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
1
Enter the item to be inserted
2

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
1
Enter the item to be inserted
3

1.insert
2.delete
```

C:\WINDOWS\SYSTEM32\cmd.exe

```
Enter your choice
1
Enter the item to be inserted
3

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
1
Enter the item to be inserted
4
Queue Overflow

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
3
Contents of queue:
1
2
3

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
2
Item deleted is 1

1.insert
2.delete
3.display
4.display size of queue
```

```
2
Item deleted is 1

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
2
Item deleted is 2

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
2
Item deleted is 3

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
3
Queue is empty

1.insert
2.delete
3.display
4.display size of queue
5.exit
Enter your choice
2
Queue is empty
1.insert
2.delete
3.display
```