

Lab Programs - 3

c) Programs to stimulate the working of queue of integers using an array; provide

```

#include <stdio.h>
#include <conio.h>
#include <stdlib.h>
#define QUE_SIZE 3

int item, v[10];
int front=0, rear=-1;
void insertrear()
{
    if (rear == QUE_SIZE - 1)
    {
        printf("Queue Overflow\n");
        return;
    }
    rear = rear + 1;
    v[rear] = item;
}

int deletefront()
{
    if (front > rear)
    {
        front = 0;
        rear = -1;
        return -1;
    }
    return v[front++];
}

```

```
void display()
```

```
{  
    int i;
```

```
    if (front > rear)
```

```
{
```

```
    printf("Queue is Empty\n");
```

```
    return;
```

```
}
```

```
printf("Contents of the Queue\n");
```

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

```
{
```

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

```
}
```

```
}
```

```
int 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 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 : exit(0);
```

```
}
```

```
}
```

```
return 0;
```

```
}
```

```
~\Des... (JAVA)
  age_main.java
  Bookmain.java
  EmpMain.java
  Stude...n.java
~\Des...w folder
  arr.c
  Book_...in.java
  fac.c
  GCD.c
  hanoi.c
  n.c
  ne.c
  p.c
  Player...n.java
  post.c
  pref.c
  queue.c

1 #include<stdio.h>
2 #include<conio.h>
3 #include<stdlib.h>
4 #define QUE_SIZE 3
5 int item,q[10];
6 int front=0,rear=-1;
7 void insertrear()
8 {
9   if(rear==QUE_SIZE-1)
10  {
11    printf("Queue Overflow\n");
12    return ;
13  }
14  rear=rear+1;
15  q[rear]=item;
16 }
17 int deletefront()
18 {
19   if(front>rear)
20  {
21    front=0;
22    rear=-1;
23    return -1;
24  }
25  return q[front++];
26 }
27 void displayQ()
28 {
29   int i;
30   if(front>rear)
31  {
32    printf("Queue is Empty\n");
33    return;
34  }
35  printf("Contents of the Queue\n");
36  for(i=front;i<=rear;i++)
37  {
38    printf("%d\n",q[i]);
```

Status gcc -Wall -c "queue.c" (in directory: C:\Users\DELL\Desktop\New folder)

Compiler Compilation finished successfully.

Messages

Scribble

```
~\Desk...(JAVA)
  age_main.java
  Bookmain.java
  EmpMain.java
  Stude...n.java
~\Desk...w folder
  arr.c
  Book_...in.java
  fac.c
  GCD.c
  hanoi.c
  n.c
  ne.c
  p.c
  Player...n.java
  post.c
  pref.c
  queue.c

28  {
29    int i;
30    if(front>rear)
31    {
32      printf("Queue is Empty\n");
33      return;
34    }
35    printf("Contents of the Queue\n");
36    for(i=front;i<=rear;i++)
37    {
38      printf("%d\n",q[i]);
39    }
40  }
41  int main()
42  {
43    int choice;
44    for(;;)
45    {
46      printf("\n1:Insert rear\n2:Delete front\n3:Display\n4:exit\n");
47      printf("Enter the choice\n");
48      scanf("%d",&choice);
49      switch(choice)
50      {
51        case 1: printf("Enter the Item to be Inserted :\n");
52          scanf("%d",&item);
53          insertrear();
54          break;
55        case 2: item=deletefront();
56          if(item==1)
57            printf("Queue is Empty\n");
58          else
59            printf("Item Deleted =%d\n",item);
60          break;
61        case 3: displayQ();
62          break;
63        default : exit(0);
64      }
65    }

```

Status gcc -Wall -c "queue.c" (in directory: C:\Users\DELL\Desktop\New folder)

Compiler Compilation finished successfully.

Messages

Scribble

1:Insert rear
2:Delete front

3:Dxisplay

4:exit

Enter the choice

3

Queue is Empty

1:Insert rear
2:Delete front

3:Dxisplay

4:exit

Enter the choice

C:\WINDOWS\SYSTEM32\cmd.exe

4:exit

Enter the choice

1

Enter the Item to be Inserted :

10

1:Insert rear

2>Delete front

3:Dxisplay

4:exit

Enter the choice

1

Enter the Item to be Inserted :

20

1:Insert rear

2>Delete front

3:Dxisplay

4:exit

Enter the choice

1

Enter the Item to be Inserted :

30

1:Insert rear

2>Delete front

3:Dxisplay

4:exit

Enter the choice

C:\WINDOWS\SYSTEM32\cmd.exe

1
Enter the Item to be Inserted :

20

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

1

Enter the Item to be Inserted :

30

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

3

Contents of the Queue

10

20

30

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

C:\WINDOWS\SYSTEM32\cmd.exe

1:Insert rear
2>Delete front
3:Dxisplay
4:exit

Enter the choice

2

Item Deleted =10

1:Insert rear
2>Delete front
3:Dxisplay
4:exit

Enter the choice

2

Item Deleted =20

1:Insert rear
2>Delete front
3:Dxisplay
4:exit

Enter the choice

2

Item Deleted =30

1:Insert rear
2>Delete front
3:Dxisplay
4:exit

Enter the choice

Item Deleted =20

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

2

Item Deleted =30

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

3

Queue is Empty

1:Insert rear
2:Delete front
3:Dxisplay
4:exit

Enter the choice

4

(program exited with code: 0)

Press any key to continue . . .

C:\WINDOWS\SYSTEM32\cmd.exe

Enter the choice

1

Enter the Item to be Inserted :

20

1:Insert rear

2:Delete front

3:Dxisplay

4:exit

Enter the choice

1

Enter the Item to be Inserted :

30

1:Insert rear

2:Delete front

3:Dxisplay

4:exit

Enter the choice

1

Enter the Item to be Inserted :

40

Queue Overflow

1:Insert rear

2:Delete front

3:Dxisplay

4:exit

Enter the choice