

POOJA K

IDM19CS111

// Dequeue program

#include <stdio.h>

#include <stdlib.h>

#define qsize 5

int f=0, r=-1, ch;

int item, q[0];

int isfull()

{

return (r==qsize-1)?1:0;

}

int isempty()

{

return (f>r)?1:0;

}

void insert_rear()

{

if (isfull())

.. {

printf("queue overflow\n");

return;

}

r=r+1;

q[r]=item;

}

```
void delete-front()
```

```
{
```

```
    if (isEmpty())
```

```
    {
```

```
        printf("queue is empty\n");
```

```
        return;
```

```
    }
```

```
    printf("item deleted is %d\n", q[f++]);
```

```
    if (f > r)
```

```
    {
```

```
        f = 0;
```

```
        r = -1;
```

```
    }
```

```
}
```

```
void insert-front()
```

```
{
```

```
    if (f != 0)
```

```
    {
```

```
        f = f - 1;
```

```
        q[f] = item;
```

```
        return;
```

```
    }
```

```
    else if (f == 0 && r == -1)
```

```
    {
```

```
        q[++r] = item;
```

```
        return;
```

```
    }
```

```
    else
```

```
        printf("insertion not possible\n");
```

```
}
```



```
void delete_rear()
```

```
{
```

```
    if (isEmpty())
```

```
    {
```

```
        printf("queue is empty\n");
```

```
        return;
```

```
    }
```

```
    printf("item deleted is %d\n", q[r--]);
```

```
    if (r > -1)
```

```
    {
```

```
        f = 0;
```

```
        r = -1;
```

```
    }
```

```
}
```

```
void display()
```

```
{
```

```
    int i;
```

```
    if (isEmpty())
```

```
    {
```

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

```
        return;
```

```
    }
```

```
    for (i = f; i <= r; i++)
```

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

```
}
```

```
int main()
```

```
{
```

```
    for(;;)
```

```
{  
printf("1.insert_rear\n 2.insert_front\n  
3.delete_rear\n 4.delete_front\n 5.display  
6.exit\n");  
printf("enter choice");  
scanf("%d", &ch);  
switch(ch)  
{  
case 1: printf("enter the item\n");  
        scanf("%d", &item);  
        insert_rear();  
        break;  
case 2: printf("enter the item\n");  
        scanf("%d", &item);  
        insert_front();  
        break;  
case 3: delete_rear();  
        break;  
case 4: delete_front();  
        break;  
case 5: display();  
        break;  
        default: exit(0);  
}  
}  
return 0;  
}
```

Files

main.c

```
main.c
1 //dequeue
2 #include<stdio.h>
3 #define qsize 5
4 int f=0,r=-1,ch;
5 int item,q[10];
6
7 int isfull()
8 {
9     return(r==qsize-1)?1:0;
10 }
11 int isempty()
12 {
13     return(f>r)?1:0;
14 }
15 void insert_rear()
16 {
17     if(isfull())
18     {
19         printf("queue overflow\n");
20         return;
21     }
22     r=r+1;
23     q[r]=item;
24 }
25 void delete_front()
```

```
> clang 7 pthread -lm -o main main.c
> ./main
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
1
enter the item
10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
1
enter the item
10
1.insert_rear
2.insert_front
```


Files

main.c

```
main.c
26 {
27     if(isempty())
28     {
29         printf("queue empty\n");
30         return;
31     }
32     printf("item deleted is %d\n",q[(f++)]);
33     if(f>r)
34     {
35         f=0;
36         r=-1;
37     }
38 }
39 void insert_front()
40 {
41     if(f!=0)
42     {
43         f=f-1;
44         q[f]=item;
45         return;
46     }
47     else if((f==0)&&(r==1))
48     {
49         q[++(r)]=item;
50         return;
```

```
1
enter the item
20
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
1
enter the item
30
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
4
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
2
```

Files

- main.c




```
main.c
51  ,
52  else
53      printf("insertion not possible\n");
54  }
55  void delete_rear()
56  {
57      if(isempty())
58      {
59          printf("queue is empty\n");
60          return;
61      }
62      printf("item deleted is %d\n",q[(r)--]);
63      if(f>r)
64      {
65          f=0;
66          r=-1;
67      }
68  }
69  void display()
70  {
71      int i;
72      if(isempty())
73      {
74          printf("queue empty\n");
75          return;
```


```
1
enter the item
30
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
4
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
2
enter the item
40
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
```


```
Files
main.c


main.c
75     return;
76 }
77 for(i=f;i<=r;i++)
78     printf("%d\n",q[i]);
79 }
80 int main()
81 {
82
83     for(;;)
84     {
85         printf
86         ("1.insert_rear\n2.insert_front\n3.delete_rear\n4.
87         delete_front\n5.display\n6.exit\n");
88         printf("enter choice\n");
89         scanf("%d",&ch);
90         switch(ch)
91         {
92             case 1:printf("enter the item\n");
93                 scanf("%d",&item);
94                 insert_rear();
95                 break;
96             case 2:printf("enter the item\n");
97                 scanf("%d",&item);
98                 insert_front();
99         }
100     }
```

```
1
enter the item
30
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
4
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
2
enter the item
40
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
```


 Files   ⋮

 main.c ⋮





main.c

```
93     break;
94     case 2:printf("enter the item\n");
95         scanf("%d",&item);
96         insert_front();
97         break;
98     case 3:delete_rear();
99         break;
100    case 4:delete_front();
101        break;
102    case 5:display();
103        break;
104
105    }
106 }
107
108 }
```

```
1
enter the item
30
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
4
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
2
enter the item
40
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter choice
```