

Single linked List Queue operation.c - Code::Blocks 20.03

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Start here X Single linked list Stack operation.c X Single linked List Queue operation.c X

```
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 struct Node {
5     int data;
6     struct Node* next;
7 };
8
9 void enqueue(struct Node** front, struct Node** rear, int value) {
10    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
11    newNode->data = value;
12    newNode->next = NULL;
13
14    if (*rear == NULL) {
15        *front = *rear = newNode;
16    } else {
17        (*rear)->next = newNode;
18        *rear = newNode;
19    }
20    printf("%d enqueued to queue\n", value);
21}
22
23 int dequeue(struct Node** front, struct Node** rear) {
24    if (*front == NULL) {
25        printf("Queue Underflow\n");
26        return -1;
27    }
28    struct Node* temp = *front;
29    int value = temp->data;
30
31    *front = (*front)->next;
32    if (*front == NULL)
33        *rear = NULL;
34
35    free(temp);
36    return value;
37}
38
39 void display(struct Node* front) {
```

E:\Monisha\BMSCE\SEM-III\DS\Single linked List Queue operation.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 38, Col 1, Pos 823 Insert Read/Write default

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```
40 if (front == NULL) {
41     printf("Queue is empty\n");
42     return;
43 }
44 struct Node* temp = front;
45 printf("Queue: ");
46 while (temp != NULL) {
47     printf("%d -> ", temp->data);
48     temp = temp->next;
49 }
50 printf("NULL\n");
51 }

52 int main() {
53     struct Node *front = NULL, *rear = NULL;
54     int choice, value;
55
56     while (1) {
57         printf("\nQUEUE MENU\n");
58         printf("1. Enqueue\n");
59         printf("2. Dequeue\n");
60         printf("3. Display\n");
61         printf("4. Exit\n");
62         printf("Enter your choice: ");
63         scanf("%d", &choice);
64
65         switch (choice) {
66             case 1:
67                 printf("Enter value: ");
68                 scanf("%d", &value);
69                 enqueue(&front, &rear, value);
70                 break;
71             case 2:
72                 value = dequeue(&front, &rear);
73                 if (value != -1)
74                     printf("Dequeued element: %d\n", value);
75                 break;
76             case 3:
77                 display(front);
78 }
```

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Start here X Single linked list Stack operation.c X Single linked List Queue operation.c X

```
49     }
50     printf("NULL\n");
51 }
52
53 int main() {
54     struct Node *front = NULL, *rear = NULL;
55     int choice, value;
56
57     while (1) {
58         printf("\nQUEUE MENU\n");
59         printf("1. Enqueue\n");
60         printf("2. Dequeue\n");
61         printf("3. Display\n");
62         printf("4. Exit\n");
63         printf("Enter your choice: ");
64         scanf("%d", &choice);
65
66         switch (choice) {
67             case 1:
68                 printf("Enter value: ");
69                 scanf("%d", &value);
70                 enqueue(&front, &rear, value);
71                 break;
72             case 2:
73                 value = dequeue(&front, &rear);
74                 if (value != -1)
75                     printf("Dequeued element: %d\n", value);
76                 break;
77             case 3:
78                 display(front);
79                 break;
80             case 4:
81                 exit(0);
82             default:
83                 printf("Invalid choice\n");
84         }
85     }
86 }
87 }
```

"E:\Monisha\BMSCE\SEM-III\I" X + V - O X

```
QUEUE MENU
1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter your choice: 2
Queue Underflow

QUEUE MENU
1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter your choice: 1
Enter value: 45
45 enqueueed to queue

QUEUE MENU
1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter your choice: 1
Enter value: 18
18 enqueueed to queue

QUEUE MENU
1. Enqueue
2. Dequeue
3. Display
4. Exit
Enter your choice: 1
Enter value: 99
99 enqueueed to queue

QUEUE MENU
1. Enqueue
2. Dequeue
3. Display
4. Exit
```

```
"E:\Monisha\BM5CCE\SEM-III\" + ▾ - ▾ X  
QUEUE MENU  
1. Enqueue  
2. Dequeue  
3. Display  
4. Exit  
Enter your choice: 1  
Enter value: 73  
73 enqueued to queue  
  
QUEUE MENU  
1. Enqueue  
2. Dequeue  
3. Display  
4. Exit  
Enter your choice: 3  
Queue: 45 -> 18 -> 99 -> 73 -> NULL  
  
QUEUE MENU  
1. Enqueue  
2. Dequeue  
3. Display  
4. Exit  
Enter your choice: 2  
Dequeued element: 45  
  
QUEUE MENU  
1. Enqueue  
2. Dequeue  
3. Display  
4. Exit  
Enter your choice: 3  
Queue: 18 -> 99 -> 73 -> NULL  
  
QUEUE MENU  
1. Enqueue  
2. Dequeue  
3. Display  
4. Exit  
Enter your choice: 4  
  
Process returned 0 (0x0) execution time : 69.442 s
```