

Single linked list Stack operation.c - Code::Blocks 20.03

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<global> push(struct Node** head, int data) : void

Start here x Single linked list Stack operation.c x

```
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  struct Node {
5      int data;
6      struct Node *next;
7  };
8  struct Node* createNode(int data) {
9      struct Node *newNode = (struct Node*)malloc(sizeof(struct Node));
10     newNode->data = data;
11     newNode->next = NULL;
12     return newNode;
13 }
14
15 void push(struct Node **head, int data) {
16     struct Node *newNode = createNode(data);
17     newNode->next = *head;
18     *head = newNode;
19     printf("%d pushed to stack.\n", data);
20 }
21
22 int pop(struct Node **head) {
23     if (*head == NULL) {
24         printf("Stack underflow.\n");
25         return -1;
26     }
27     struct Node *temp = *head;
28     int val = temp->data;
29     *head = (*head)->next;
30     free(temp);
31     return val;
32 }
33
34 void display(struct Node *head) {
35     if (head == NULL) {
36         printf("List is empty.\n");
37         return;
38     }
39     struct Node *temp = head;
```

```
40 while (temp != NULL) {
41     printf("%d -> ", temp->data);
42     temp = temp->next;
43 }
44 printf("NULL\n");
45 }
46
47 int main() {
48     struct Node *stack = NULL;
49     int choice, value;
50
51     while (1) {
52         printf("\nStack Menu:\n");
53         printf("1. Push\n");
54         printf("2. Pop\n");
55         printf("3. Display\n");
56         printf("4. Exit\n");
57         printf("Enter your choice: ");
58
59         scanf("%d", &choice);
60
61         switch (choice) {
62             case 1:
63                 printf("Enter value to push: ");
64                 scanf("%d", &value);
65                 push(&stack, value);
66                 break;
67
68             case 2:
69                 value = pop(&stack);
70                 if (value != -1)
71                     printf("Popped: %d\n", value);
72                 break;
73
74             case 3:
75                 printf("Stack: ");
76                 display(stack);
77                 break;
78         }
```

```
51 while (1) {
52     printf("\nStack Menu:\n");
53     printf("1. Push\n");
54     printf("2. Pop\n");
55     printf("3. Display\n");
56     printf("4. Exit\n");
57     printf("Enter your choice: ");
58
59     scanf("%d", &choice);
60
61     switch (choice) {
62     case 1:
63         printf("Enter value to push: ");
64         scanf("%d", &value);
65         push(&stack, value);
66         break;
67
68     case 2:
69         value = pop(&stack);
70         if (value != -1)
71             printf("Popped: %d\n", value);
72         break;
73
74     case 3:
75         printf("Stack: ");
76         display(stack);
77         break;
78
79     case 4:
80         printf("Exiting program...\n");
81         exit(0);
82
83     default:
84         printf("Invalid choice, try again.\n");
85     }
86 }
87 return 0;
88 }
89 }
```

Stack Menu:

1. Push
2. Pop
3. Display
4. Exit

Enter your choice: 1

Enter value to push: 56

56 pushed to stack.

Stack Menu:

1. Push
2. Pop
3. Display
4. Exit

Enter your choice: 1

Enter value to push: 89

89 pushed to stack.

Stack Menu:

1. Push
2. Pop
3. Display
4. Exit

Enter your choice: 3

Stack: 89 -> 56 -> NULL

Stack Menu:

1. Push
2. Pop
3. Display
4. Exit

Enter your choice: 2

Popped: 89

Stack Menu:

1. Push
2. Pop
3. Display
4. Exit

Enter your choice: 2

```
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1. Push  
2. Pop  
3. Display  
4. Exit  
Enter your choice: 2  
Popped: 89  
  
Stack Menu:  
1. Push  
2. Pop  
3. Display  
4. Exit  
Enter your choice: 2  
Popped: 56  
  
Stack Menu:  
1. Push  
2. Pop  
3. Display  
4. Exit  
Enter your choice: 2  
Stack underflow.  
  
Stack Menu:  
1. Push  
2. Pop  
3. Display  
4. Exit  
Enter your choice: 3  
Stack: List is empty.  
  
Stack Menu:  
1. Push  
2. Pop  
3. Display  
4. Exit  
Enter your choice: 4  
Exiting program...  
  
Process returned 0 (0x0)   execution time : 37.616 s  
Press any key to continue.
```