

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;
```

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```
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 }
```

E:\Monisha\BMSCE\SEM-III\DS\Single linked list Stack operation.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 16, Col 45, Pos 376 Insert Read/Write default

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

Start here X Single linked list Stack operation.c X

```
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
88 return 0;
89 }
```

```
E:\Monisha\BMSCE\SEM-II\  X + ▾ - ⌂ ×
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
```

```
"E:\Monisha\BMSCE\SEM-III\" + ▾ — X
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.
```