

1. Time taken for pushing elements using StackArray: 334.000 seconds

Stack: 8 10 5 11 15 23 6 18 20 17

Stack: 8 10 5 11 15

Stack: 8 10 5 11 15 4 30 3 1

...Program finished with exit code 0

Press ENTER to exit console

2. Time taken for pushing elements using StackLinkedList: 1203.000nanoseconds

Stack: 8 10 5 11 15 23 6 18 20 17

Stack: 8 10 5 11 15

Stack: 8 10 5 11 15 4 30 3 1

...Program finished with exit code 0

Press ENTER to exit console

```
main.cpp
10 int data;
11 Node next;
12 Node(int x) {
13     data = x;
14     next = nullptr;
15 };
16 };
17
18 class StackLinkedList {
19 private:
20     Node* head;
21     Node* top;
22 public:
23     StackLinkedList() {
24         head = nullptr;
25         top = nullptr;
26     }
27     ~StackLinkedList() {
28         Node* temp = head;
29         while(temp != nullptr) {
30             head = head->next;
31             delete temp;
32             temp = head;
33         }
34     }
35     void push(int x) {
36         Node* new_node = new Node(x);
37         new_node->next = head;
38         head = new_node;
39     }
40     void pop() {
41         if (head == nullptr) return;
42         Node* temp = head;
43         head = head->next;
44         delete temp;
45     }
46     void display() {
47         Node* temp = head;
48         while(temp != nullptr) {
49             cout << temp->data << " ";
50             temp = temp->next;
51         }
52         cout << endl;
53     }
54 };
55
56 int main() {
57     StackLinkedList sll;
58     sll.push(8);
59     sll.push(10);
60     sll.push(5);
61     sll.push(11);
62     sll.push(15);
63     sll.push(23);
64     sll.push(6);
65     sll.push(18);
66     sll.push(20);
67     sll.push(17);
68     sll.display();
69     sll.pop();
70     sll.push(4);
71     sll.push(30);
72     sll.push(3);
73     sll.push(1);
74     sll.display();
75     return 0;
76 }
```

Time taken for pushing elements using StackLinkedList: 1203.000nanoseconds  
Stack: 8 10 5 11 15 23 6 18 20 17  
Stack: 8 10 5 11 15  
Stack: 8 10 5 11 15 4 30 3 1  
...Program finished with exit code 0  
Press ENTER to exit console

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main.cpp

```
18 class StackLinkedList {
19     private:
20         Node* head;
21         Node* top;
22     public:
23         StackLinkedList() {
24             head = nullptr;
25             top = nullptr;
26         }
27         ~StackLinkedList() {
28             Node* temp = head;
29             while(temp != nullptr) {
30                 head = head->next;
31                 delete temp;
32                 temp = head;
33             }
34         }
35         void push(int x) {
36             Node* newNode = new Node(x);
37             if(head == nullptr) {
38                 head = newNode;
39                 top = newNode;
40             } else {
41                 top->next = newNode;
42                 top = newNode;
43             }
44         }
45     };
```

Input

Time taken for pushing elements using StackLinkedList: 1203.000nanoseconds  
Stack: 0 10 5 11 15 23 6 18 20 17  
Stack: 0 10 5 11 15  
Stack: 0 10 5 11 15 4 30 3 1

...Program finished with exit code 0  
Press ENTER to exit console.