

Hands-on-Activity 4.1

stacks

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6. Output

Modified code:

```
After the first PUSH top of stack is :Top of Stack: 1
After the second PUSH top of stack is :Top of Stack: 5
After the first POP operation, top of stack is:Top of Stack: 1
After the second POP operation, top of stack :Stack is Empty.
Stack Underflow.
```

PS C:\Users\nikko\Desktop>Data_structures.cxx

The output is still the same but I changed some conditions inside the code.

Source code:

```
#include<iostream>

class Node{
public:
    int data;
    Node *next;
};

Node *head = NULL, *tail = NULL;

void push(int newData){
    Node *newNode = new Node;
    newNode->data = newData;
    newNode->next = head;
    if (head == NULL) {
        head = tail = newNode;
    } else {
        newNode->next = head;
        head = newNode;
    }
}

int pop(){
    if (head == NULL) {
        std::cout << "Stack Underflow." << std::endl;
        return -1;
    }
}
```

```

Node *temp = head;
int tempVal = temp->data;
head = head->next;
delete temp;
if (head == NULL) tail = NULL;
return tempVal;
}

void Top() {
    if (head == NULL) {
        std::cout << "Stack is Empty." << std::endl;
        return;
    } else {
        std::cout << "Top of Stack: " << head->data << std::endl;
    }
}

int main() {
    push(1);
    std::cout << "After the first PUSH top of stack is :";
    Top();
    push(5);
    std::cout << "After the second PUSH top of stack is :";
    Top();
    pop();
    std::cout << "After the first POP operation, top of stack is:";
    Top();
    pop();
    std::cout << "After the second POP operation, top of stack :";
    Top();
    pop();
    return 0;
}

```

So in here I changed the else with another if so I can just put the conditions will be more easy to understand. The code also has a problem, and that is 1 of the reasons I changed the else condition on the pop part.

7. Supplementary Activity

8. Conclusion

The lesson I've learned here is how to use the stack, and how to implement a stack. Also we can use the pointer for our stack tho I'm having a hard time using a pointer since it is really hard to use unlike the other c++ operators. Using the built in function of the c++ it made this activity more easy and easy to understand.

9. Assessment Rubric

