Activity No. 4.2	
Hands-on Activity 4.2 Stacks	
Course Code: CPE010	**Program:** Computer Engineering
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6. Output

Avila.cpp [*] stack.h

```cpp
#include <iostream>
#include "stack.h"

int main(){
    stack <int> s1;

    s1.peek();
    s1.push(10);
    s1.push(9);
    s1.push(8);
    s1.push(7);
    s1.push(6);
    s1.peek();
    s1.pop();
    s1.display();
    return 0;
}
```

Avila.cpp stack.h

```
#ifndef STACK_H
#define STACK_H
#define MAX 10
#include <iostream>
template <typename T>
class stack{
    private:
        int top = -1;
        int arr[MAX];



    public:
        bool isEmpty() {
            return (top < 0);
        }
        //isFull
        bool isFull(){
            return (top >= MAX-1);
        }
        //peek
        void peek(){
            if (isEmpty()){
                std::cout<<"The stack is Empty\n";

            }
            else{
                std::cout<<"The value of the top is: " <<arr[top]<< std::endl;
            }

        }
        //push
        void push(T value){
            if (isFull()){
                std::cout<<"STACK OVERFLOW!!"<<std::endl;

            }
            else{
                arr[++top]=value;
                std::cout<<"Successfully pushed"<<value<<std::endl;
            }
        }
        //pop
        void pop(){
            if (isEmpty()){
                std::cout<<"The Stack is Empty. ";
            }
            else {
```

```
48              else {
49                  std::cout<<"Successfully popped " <<arr[--top] <<std::endl;
50
51              }
52          }
53          //display
54          void display(){
55              if (isEmpty()){
56
57                  std::cout<<"The stack is Empty. " <<std::endl;
58              }
59              else{
60                  for(int i=top;  i >=0; i--){
61                      std::cout<< arr[i] <<std::endl;
62                  }
63              }
64
65          }
66
67
68      };
69
70
71  #endif
72
```

```
C:\Users\TIPQC\Documents\A
The stack is Empty
Successfully pushed10
Successfully pushed9
Successfully pushed8
Successfully pushed7
Successfully pushed6
The value of the top is: 6
Successfully popped 7
7
8
9
10

--------------------------------
Process exited after 0.01432 seconds with return value 0
Press any key to continue . . .
```

8. Conclusion

For my conclusion this activity let me understand more about stacks on how to use //isFull, //peek, //push, //pop, and //display we briefly code step by step procedure in order for the stack to be successfully pushed, pop, and show the value of the code. I am still practicing and understand more about stacks concepts.

9. Assessment Rubric