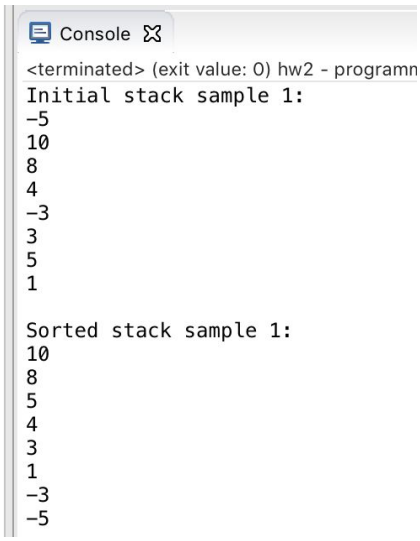
Programming Assignment 2

a) Algorithm sort(Stack & input
//input: stack filled with integers
//output: stack s with with integers sorted in ascending order

```
Stack s;

//pops top element
while (!input.empty())
        StackElement sElement = input.top()
        input.pop();

        // while top of s is greater than sElement and s is not empty,
        //pops from s and pushes into inputted stack
        while (!s.empty() && (s.top() > sElement))
                input.push(s.top());
                s.pop();

        //push sElement into s stack
        s.push(sElement);

//returns stack s with sorted elements
return s;
```

b) Algorithm implementation

i) Sample Input 1:*Sample input 1 is pushed into the first stack. The stack is then inputted into the algorithm and is returned as a new stack with the elements sorted in ascending order*



ii) Sample Input 2: *Sample input 2 is pushed into the first stack. The stack is then inputted into the algorithm and is returned as a new stack with the elements sorted in ascending order*

```
Initial stack sample 2:
2
6
-4
5
1

Sorted stack sample 2:
6
5
2
1
-4
```

iii) Sample Input 3: *Sample input 3 is pushed into the first stack. The stack is then inputted into the algorithm and is returned as a new stack with the elements sorted in ascending order*

```
Initial stack sample 3:
9
6
6
-4
-4
-1

Sorted stack sample 3:
9
6
6
-1
-4
-4
```