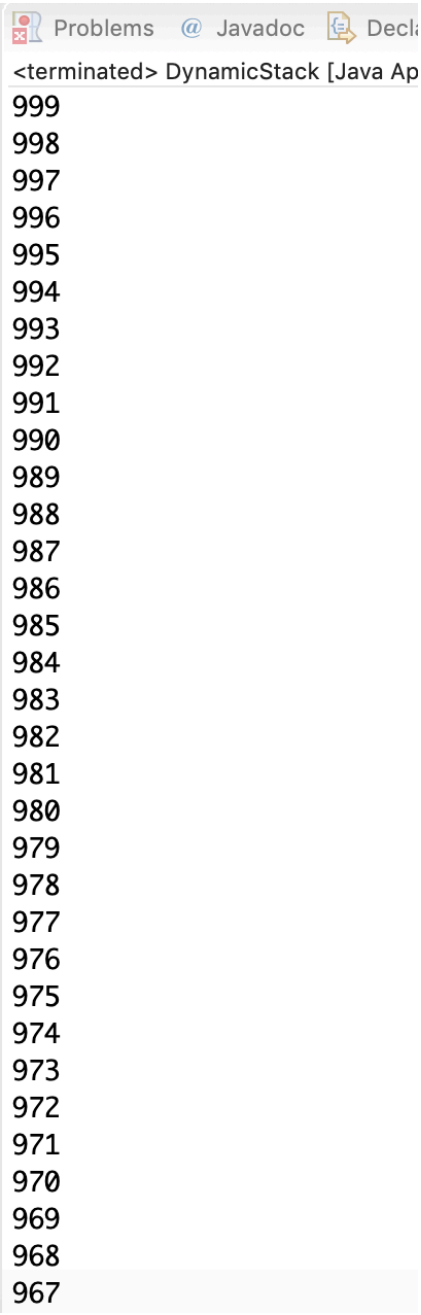
DynamicStack.java

Push 1000 big integer and pop them one by one.

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    DynamicStack test = new DynamicStack();
    for(int i = 0; i<1000; i++){
        test.push(BigInteger.valueOf(i));
    }
    for(int i = 0; i<1000; i++){
        System.out.println(test.pop());
    }



}
```



The result is **correct.**

RedBlackTree.java

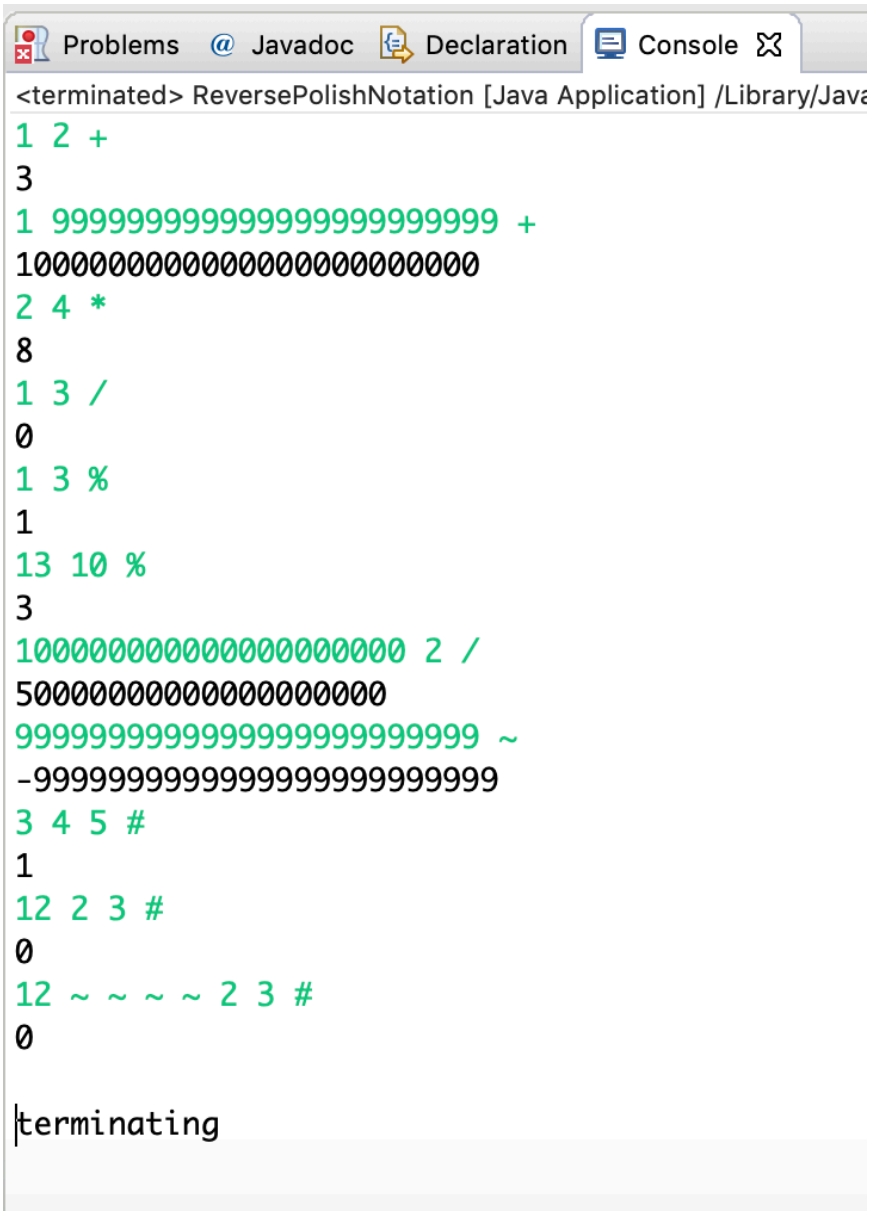
```
public static void main(String[] args) {

        RedBlackTree rbt = new RedBlackTree();
        BigInteger nullInteger = BigInteger.valueOf(0);
        rbt.insert("var1", BigInteger.valueOf(100));
        rbt.insert("var2", BigInteger.valueOf(0));
        //overwrite the previous key,value
        rbt.insert("var1", BigInteger.valueOf(1000));
        rbt.levelOrderTraversal();
        System.out.println(rbt.lookup("var1"));

    }
```

First, push string “var1” as key in to the rbt
Then, push string “var2” as key in to the rbt
Last, overwrite var1 value.

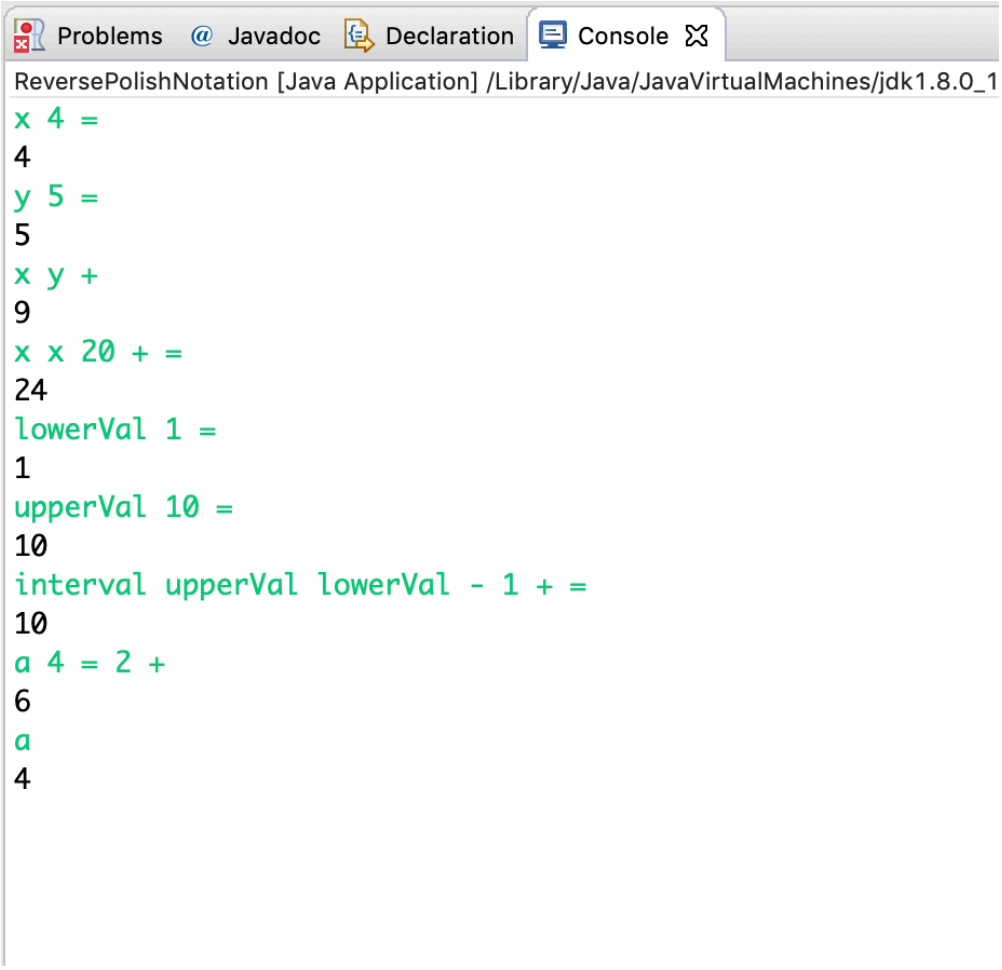
```
<terminated> RedBlackTree (1) [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_151.jdk/Contents/Home/bin/java (Mar 4, 2019,
[data = var1:Color = Black:Parent = -1: LC = -1: RC = var2]
[data = var2:Color = Red:Parent = var1: LC = -1: RC = -1]
value stored in var1 is: 1000
```

ReversePolishNotation.java

First example of successfully compiling



Second Example Successfully compiling



Third Example:

For error handling part, I throw exception and catch them, print corresponding message, and then halt the program.

```
<terminated> ReversePolishNotation [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_151.jdk/Co
a 1 =
1
a b +
Exception in thread "main" java.lang.Exception: error: no variable b
        at ReversePolishNotation.main(ReversePolishNotation.java:86)
```

```
<terminated> ReversePolishNotation [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_151.jdk/Contents/Hom
2 3 #
Exception in thread "main" java.lang.Exception: stack underflow exception
        at ReversePolishNotation.main(ReversePolishNotation.java:232)
```

```
<terminated> ReversePolishNotation [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_151.jdk/Contents/Home/bin/j
3 4 =
Exception in thread "main" java.lang.Exception: error: 3 not an lvalue
        at ReversePolishNotation.main(ReversePolishNotation.java:254)
```

For large integer input: