

Philip Pesic

Week 7

March 5 2023

Week 7 Prog 4

Exercise 4 – Write a function that inputs a 4 digit year and outputs the ROMAN numeral year

```
package Prog4;
import java.util.Scanner;

class prog4 {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter a year: ");
        int num = input.nextInt();
        input.close();

        String[] romanNumerals = {"M", "CM", "D", "CD", "C", "XC", "L", "XL", "X",
"IX", "V", "IV", "I"};
        int[] values = {1000, 900, 500, 400, 100, 90, 50, 40, 10, 9, 5, 4, 1};

        StringBuilder result = new StringBuilder();

        for (int i = 0; i < values.length; i++) {
            while (num >= values[i]) {
                result.append(romanNumerals[i]);
                num -= values[i];
            }
        }

        System.out.println("Roman numerals: " + result.toString());
        System.out.println("Philip Pesic 3/5/23");
    }
}
```

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The screenshot shows an IDE with a Java project named 'Prog4'. The Explorer panel on the left shows a folder 'PROGRAMS' containing files 'Prog1', 'Prog2', 'Prog3', and 'Prog4'. The main editor displays the code for 'Prog4.java', which is a Java class named 'prog4' with a 'main' method. The code prompts the user to enter a year, converts it to Roman numerals using a loop and a 'StringBuilder', and prints the result. The output console shows the execution of the program, where the user entered '2001' and the program outputted 'Roman numerals: MMI' and 'Philip Pesic 3/5/23'. The terminal panel at the bottom shows the command prompt and the execution of the program.

```
Prog4 > J prog4.java > prog4 > main(String[])
1 package Prog4;
2 import java.util.Scanner;
3
4 class prog4 {
5     public static void main(String[] args) {
6         Scanner input = new Scanner(System.in);
7
8         System.out.print("Enter a year: ");
9         int num = input.nextInt();
10        input.close();
11
12        String[] romanNumerals = {"M", "CM", "D", "CD", "C", "XC", "L", "XL", "X", "IX", "V", "IV", "I"};
13        int[] values = {1000, 900, 500, 400, 100, 90, 50, 40, 10, 9, 5, 4, 1};
14
15        StringBuilder result = new StringBuilder();
16
17        for (int i = 0; i < values.length; i++) {
18            while (num >= values[i]) {
19                result.append(romanNumerals[i]);
20                num -= values[i];
21            }
22        }
23
24        System.out.println("Roman numerals: " + result.toString());
25        System.out.println("Philip Pesic 3/5/23");
26    }
27 }
28
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

Run: prog4

→ Programs git:(main) * /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pippo/Library/Application\ Support/Code/User/workspaceStorage/25f417367d41eaaac1fdb465f5bca/redhat.java/jdt_ws/Programs_a03e32e9/bin Prog4.prog4

Enter a year: 2001

Roman numerals: MMI

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→ Programs git:(main) * cd /Users/pippo/github/cs284/Week7/Programs ; /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pippo/Library/Application\ Support/Code/User/workspaceStorage/25f417367d41eaaac1fdb465f5bca/redhat.java/jdt_ws/Programs_a03e32e9/bin Prog4.prog4

Enter a year: 1892

Roman numerals: MDCCCXCII

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→ Programs git:(main) *

Opening Java Projects: check details

Ln 10, Col 23 Spaces: 4 UTF-8 LF Java Prettier

I learned: how to use string builder