

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 3

Prog 3 - Modify the following code to:

- * Create a Driver Class

- * Create a FACTORIAL class.

```
package Prog3;

class prog3 {
    public static void main(String[] args) {
        Factorial factorialCalc = new Factorial(6);
        factorialCalc.getFactorial();
        System.out.println("Philip Pesic 3/19/23");
    }
}

package Prog3;

public class Factorial {
    private int num;
    private long factorial;

    public Factorial(int num) {
        this.num = num;
        factorial = 1;
    }

    public void getFactorial() {
        for(int i = 1; i <= num; ++i) {
            factorial *= i;
        }

        System.out.printf("Factorial of %d = %d", num, factorial);
        System.out.println("");
    }
}
```

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 3

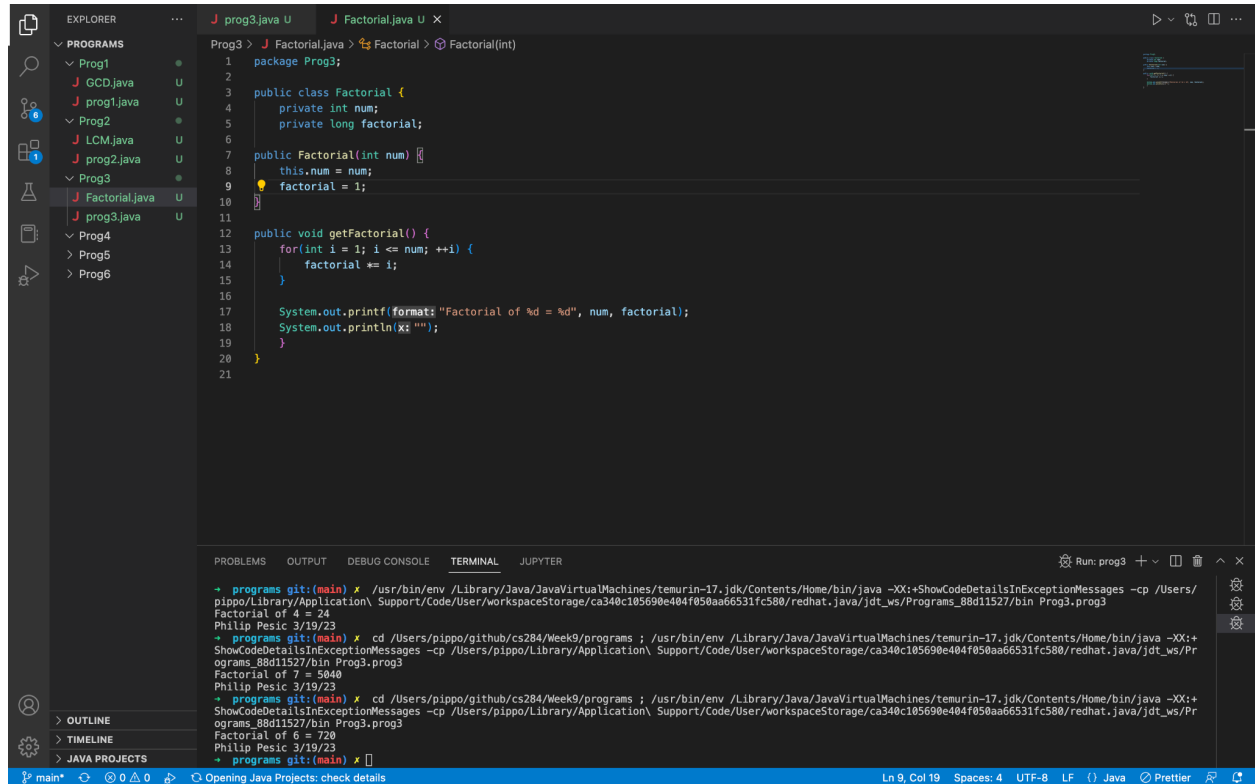


Philip Pesic

Week 9

March 19 2023

Week 9 Prog 3



The screenshot shows an IDE with a project explorer on the left containing several Java files. The main editor displays the code for `Factorial.java` in the `Prog3` package. The code defines a `Factorial` class with a `num` attribute, a `factorial` attribute, a constructor, and a `getFactorial()` method that uses a loop to calculate the factorial. The bottom panel shows the terminal output of running the program, which prints the factorial of 4 (24), 7 (5040), and 6 (720).

```
1 package Prog3;
2
3 public class Factorial {
4     private int num;
5     private long factorial;
6
7     public Factorial(int num) {
8         this.num = num;
9         factorial = 1;
10    }
11
12    public void getFactorial() {
13        for(int i = 1; i <= num; ++i) {
14            factorial *= i;
15        }
16
17        System.out.printf(format: "Factorial of %d = %d", num, factorial);
18        System.out.println("");
19    }
20 }
21
```

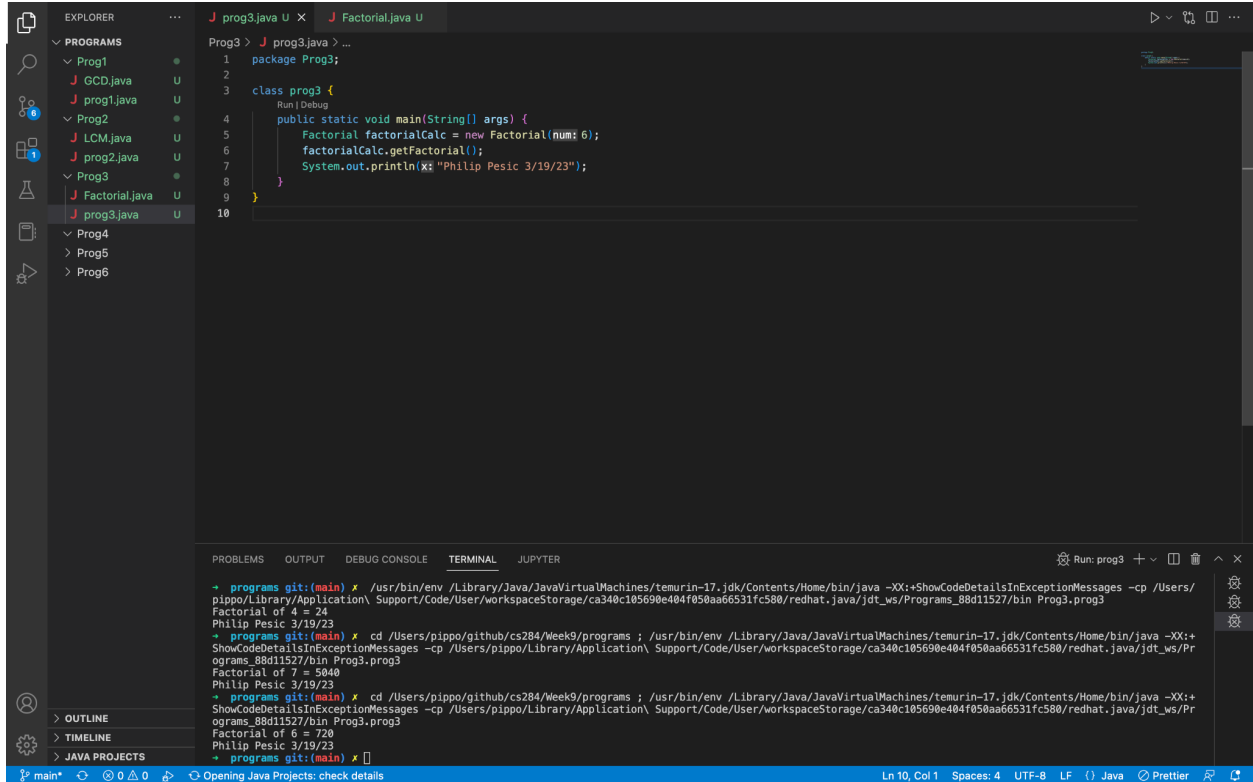
```
+ programs git:(main) x /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 4 = 24
Philip Pesic 3/19/23
+ programs git:(main) x cd /Users/pipipo/github/cs284/Week9/programs ; /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 7 = 5040
Philip Pesic 3/19/23
+ programs git:(main) x cd /Users/pipipo/github/cs284/Week9/programs ; /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 6 = 720
Philip Pesic 3/19/23
+ programs git:(main) x
```

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 3



The screenshot shows an IDE with a dark theme. On the left, the 'EXPLORER' sidebar lists a project structure with folders 'PROGRAMS' and 'PROG3', and files 'GCD.java', 'prog1.java', 'LCM.java', 'prog2.java', 'Factorial.java', and 'prog3.java'. The main editor displays the code for 'prog3.java':

```
1 package Prog3;
2
3 class prog3 {
4     public static void main(String[] args) {
5         Factorial factorialCalc = new Factorial(num: 6);
6         factorialCalc.getFactorial();
7         System.out.println("Philip Pesic 3/19/23");
8     }
9 }
10
```

Below the editor, the 'TERMINAL' tab shows the output of running the program:

```
+ programs git:(main) * /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 4 = 24
Philip Pesic 3/19/23
+ programs git:(main) * cd /Users/pipipo/github/cs284/Week9/programs ; /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 7 = 5040
Philip Pesic 3/19/23
+ programs git:(main) * cd /Users/pipipo/github/cs284/Week9/programs ; /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -XX:+ShowCodeDetailsInExceptionMessages -cp /Users/pipipo/Library/Application\ Support/Code/User/workspaceStorage/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Programs_88d11527/bin Prog3.prog3
Factorial of 6 = 720
Philip Pesic 3/19/23
+ programs git:(main) * []
```

The status bar at the bottom indicates 'Ln 10, Col 1', 'Spaces: 4', 'UTF-8', 'LF', 'Java', and 'Prettier'.

I learned: how to use composition to find the factorial of a number