

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 5

Prog 5 - Create a Menu Class.

- * Create a new Drive class.

- * Create a Menu class.

- * The menu class will use the previous 4 classes you created in GCD, LCM, FACTORIAL,

DIGITS

The Menu will display a menu that give you the option of selecting:

1) Greatest Common Denominator

2) Lowest Common Multiple

3) Factorial

4) Number of Digits in an Integer

Enter 1,2,3 or 4:

When the User enter the choice,

then the correct function/method is called for the class and

asks the user for input(s) to use.

The system will then display the results

```
package Prog5;
import java.util.Scanner;
import Prog1.GCD;
import Prog2.LCM;
import Prog3.Factorial;
import Prog4.Digits;

public class Menu {

    private Scanner input = new Scanner(System.in);
```

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 5

```
private int option;
private GCD gcd;
private LCM lcm;
private Factorial factorial;
private Digits digits;

private int x;
private int y;

public Menu() {
    System.out.println("Select an option: \n Find GCF (1) \n Find LCM (2) \n Find
Factorial (3) \n Find number of Digits (4)");
    option = input.nextInt();
}

public void Option() {
    switch(option) {
        case 1:
            System.out.println("Enter input values: ");
            x = input.nextInt();
            y = input.nextInt();
            gcd = new GCD(x, y);
            gcd.findFactors();
            break;

        case 2:
            System.out.println("Enter input values: ");
            x = input.nextInt();
            y = input.nextInt();
            lcm = new LCM(x, y);
            lcm.getLCM();
            break;

        case 3:
            System.out.println("Enter input value: ");
            x = input.nextInt();
```

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 5

```
        factorial = new Factorial(x);
        factorial.getFactorial();
        break;

    case 4:
        System.out.println("Enter input value: ");
        x = input.nextInt();
        digits = new Digits(x);
        digits.getDigits();
        break;

    default:
        System.out.println("Invalid Input");
        System.exit(0);
    }
}

package Prog5;

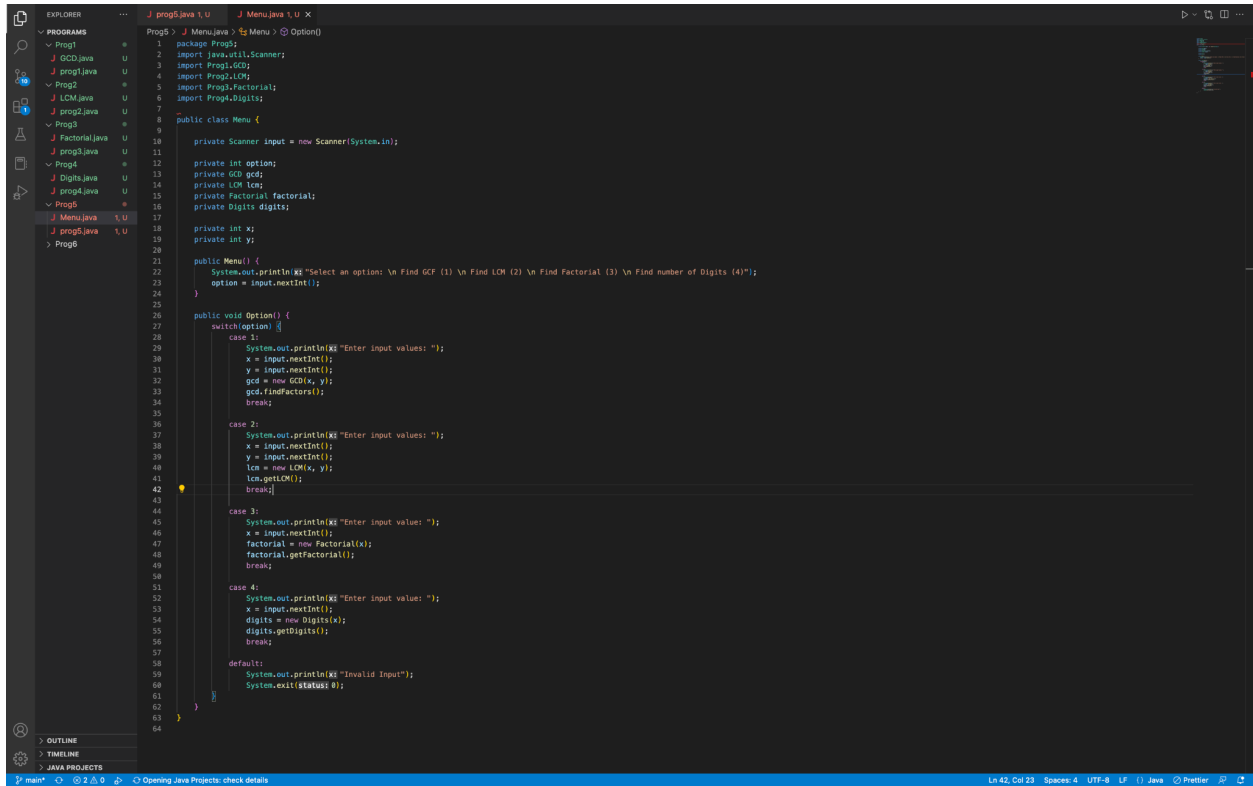
class prog5 {
    public static void main(String[] args) {
        Menu menu = new Menu();
        menu.Option();
        System.out.println("Philip pesic 3/19/23");
    }
}
```

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 5



The screenshot shows an IDE with a project explorer on the left and a code editor on the right. The project explorer shows a hierarchy of Java files under 'PROGRAMS' and 'Prog5'. The code editor displays the 'Menu.java' file, which contains a menu-driven program for finding GCD, LCM, Factorial, and Digits. The code is as follows:

```
1 package Prog5;
2 import java.util.Scanner;
3 import Prog1.GCD;
4 import Prog2.LCM;
5 import Prog3.Factorial;
6 import Prog4.Digits;
7
8 public class Menu {
9
10     private Scanner input = new Scanner(System.in);
11
12     private int option;
13     private GCD gcd;
14     private LCM lcm;
15     private Factorial factorial;
16     private Digits digits;
17
18     private int x;
19     private int y;
20
21     public Menu() {
22         System.out.println("Select an option: \n Find GCD (1) \n Find LCM (2) \n Find Factorial (3) \n Find number of Digits (4)");
23         option = input.nextInt();
24     }
25
26     public void Option() {
27         switch(option) {
28             case 1:
29                 System.out.println("Enter input values: ");
30                 x = input.nextInt();
31                 y = input.nextInt();
32                 gcd = new GCD(x, y);
33                 gcd.findGCD();
34                 break;
35             case 2:
36                 System.out.println("Enter input values: ");
37                 x = input.nextInt();
38                 y = input.nextInt();
39                 lcm = new LCM(x, y);
40                 lcm.getLCM();
41                 break;
42             case 3:
43                 System.out.println("Enter input value: ");
44                 x = input.nextInt();
45                 factorial = new Factorial(x);
46                 factorial.getFactorial();
47                 break;
48             case 4:
49                 System.out.println("Enter input value: ");
50                 x = input.nextInt();
51                 digits = new Digits(x);
52                 digits.getDigits();
53                 break;
54             default:
55                 System.out.println("Invalid Input");
56                 System.exit(status 0);
57         }
58     }
59 }
```

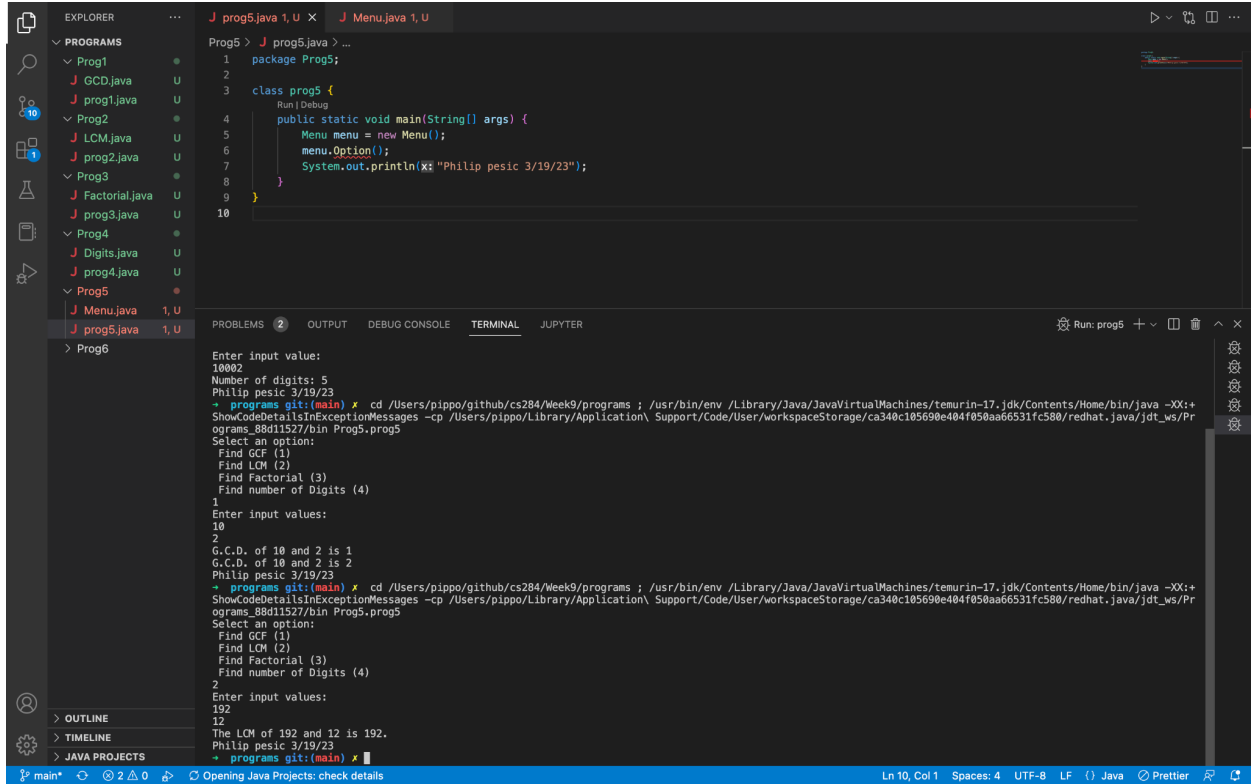
The status bar at the bottom indicates the current position is Line 42, Column 23, with 8 spaces, UTF-8 encoding, and the Java language.

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 5



The screenshot shows an IDE with a project explorer on the left containing several Java programs. The main editor displays the code for Prog5.java, which defines a package Prog5 and a class prog5 with a main method. The main method creates a Menu object and calls its Option() method, which prints a message. The terminal at the bottom shows the execution of the program, including input values and the output of the Menu.Option() method.

```
package Prog5;

class prog5 {
    public static void main(String[] args) {
        Menu menu = new Menu();
        menu.Option();
        System.out.println("Philip pesic 3/19/23");
    }
}
```

Enter input value:
10002
Number of digits: 5
Philip pesic 3/19/23
+ programs git:(main) * cd /Users/pippo/github/cs284/Week9/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/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Pr
ograms_88d11527/bin Prog5.prog5
Select an option:
Find GCF (1)
Find LCM (2)
Find Factorial (3)
Find number of Digits (4)
1
Enter input values:
10
2
G.C.D. of 10 and 2 is 1
G.C.D. of 10 and 2 is 2
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+ programs git:(main) * cd /Users/pippo/github/cs284/Week9/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/ca340c185690e404f050aa66531fc580/redhat.java/jdt_ws/Pr
ograms_88d11527/bin Prog5.prog5
Select an option:
Find GCF (1)
Find LCM (2)
Find Factorial (3)
Find number of Digits (4)
2
Enter input values:
192
12
The LCM of 192 and 12 is 192.
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+ programs git:(main) * █

I learned: how to use composition with multiple classes