(1) Student and Computing Information

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- Advance Programming Theory and Assignment 5.

- Completed on a MacBook Pro running macOS Monterey version 12.3.1 and JDoodle Online Java Compiler (https://www.jdoodle.com/online-java-compiler/).

(2) Purpose statement:

The purpose of this assignment is for students to convert the c++ code into java code using a complete method overloading. The point of overloading allows the programmer to have multiple methods that can have the same name with different parameters. When running the program, the input values come from the ‘class many\_names,’ the variables ‘gross’, ‘pi’, ‘payroll’, ‘length’, and ‘width’ are declared from the function display parameters. Next, the program outputs:

Guess, which function that has been invoked???

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small.display(void)

From void display() function, Area = 64

small.display(100)

From int display() function, Area = 800

small.display(gross, 100)

From two int display() function, Area = 14400

small.display(payroll)

From float display() function, Area = 100.0

medium.display(void)

From void display() function, Area = 80

large.display(pi)

From float display() function, Area = 47.1225

Lastly, the process of this program begins with implementing the class ‘many\_names.’ After implementing the class, the function display takes in the parameters of length, width, one, and two that calculates the function area. In the overloading method, I created instances of the class that allowed for the different inputs from small, medium, and large.

(3) Copy/paste your C++ code into the Word file:

*// declare class*

class many\_names{

int length; *//Length*

int width; *//Width*

*// implementation part*

public many\_names() {

*//Declaring variables*

length = 8;

width = 8;

}

*// single parameter signature*

public many\_names(int len) {

*//Declaring variables*

length = len;

width = 8;

}

*// two parameter signature*

public many\_names(int len, int wid) {

*//Declaring variables*

length = len;

width = wid;

}

*// void for display signature*

void display() {

System.out.println("From void display() function, Area = " + length \* width);

}

*// 1 parameter signature*

void display(int one) {

System.out.println("From int display() function, Area = " + one \* width);

}

*// 2 parameters signature*

void display(int one,int two) {

System.out.println("From two int display() function, Area = " + one \* two);

}

*// 1 parameter signature*

void display(double number) {

System.out.println("From float display() function, Area = " + number \* width);

}

}

public class overLoading {

*// main program*

public static void main(String[] args) {

*// calling public many\_names() with input variables for small, medium, and large*

many\_names small = new many\_names();

many\_names medium = new many\_names(10); *// 10 came from c++ file*

many\_names large = new many\_names(12,15); *// 12 and 15 came from c++ file*

*// creating and declaring variables*

int gross = 144;

double pi = 3.1415;

double payroll = 12.50;

System.out.println("Guess, which function that has been invoked???");

System.out.println("------------------------------------------ \n");

System.out.println("small.display(void)");

small.display(); *// display function call*

System.out.println("\nsmall.display(100)");

small.display(100); *// display function call*

System.out.println("\nsmall.display(gross, 100)");

small.display(gross,100); *// display function call*

System.out.println("\nsmall.display(payroll)");

small.display(payroll); *// display function call*

System.out.println("\nmedium.display(void)");

medium.display(); *// display function call*

System.out.println("\nlarge.display(pi)");

large.display(pi); *// display function call*

}

}

(4) Screenshots: copy/paste all output screenshots into the Word file