CPE13 Object Oriented Programming

Activity 1: Control and Iterative Statements

Name: REIMARC G. CORPUZ   Date: SEPT. 27, 2022

Section: BSCpE GF   Score:_____

Eclipse Neon 2 Environment Familiarization

1.1 Requirements:

- You need a 32 or 64-bit installed Java Development Kit 1.8 or better
- You also need a 32 or 64-bit eclipse Neon 2.

1.2 Environment Familiarization

Creation of New Project

- Open Eclipse Neon 2.
- Select "Create a New Java Project".
- Enter Project Name
  - Define New Location
  - Select JavaSE-1.8 as JRE
  - Project Layout should be Create Separate folders for sources and class files
- Click Finish

Creation of New Class

- Click File, Select New and Click Class.
- Type the name of the Class (Your Surname and the Number of Activity
- Click Finish and you will notice you created your class.

Creation and Execution of Codes

- Type your codes in your created class
- After typing, save your work.
- Press Ctrl + F11 to run or execute the program.
- You will see the output at the console below.

1.3 Introduction

        Control Statements alters the flow of the program. Instead of the usual execution of program starting from top to bottom, it makes the program skip some codes. Iterative statements are control statements that save several lines of codes and putting them into a loop.

1.4 Objective

- To use Java programming language to create a program that exhibits control and iterative statements
- To conceptualize the process and manipulate the program
- To distinguish different control and iterative statements

1.5 Problem

Write a program that prints a square or rectangle pattern. Include comments and method calling.

Flow of the program:

1. Ask the user if 1 - square and 2 - rectangle.
2. For square, ask for the size of the side.
3. For rectangle, ask for the length and width.
4. Print either square or rectangle and terminate the program.

Output of the Program: (Square with side of 7 SS)

If square

```
IDENTIFY WETHER THE SHAPE IS A SQUARE OR A RECTANGLE
1. SQUARE
2. REACTANGLE

Enter the number of the shape: 1

Give the size of the square
Enter the unit: inches

Side: 5

Shape: "SQUARE with the equal sides of 5.0 inches"


PROGRAM FINISHED
```

If rectangle

```
IDENTIFY WETHER THE SHAPE IS A SQUARE OR A RECTANGLE
1. SQUARE
2. REACTANGLE

Enter the number of the shape: 2

Give the length and the width of a rectangle
Enter the unit: cm

Length: 15.392
Width: 11.1

Shape: "RECTANGLE with the length of 15.392 cm and the width of 11.1 cm"


PROGRAM FINISHED
```
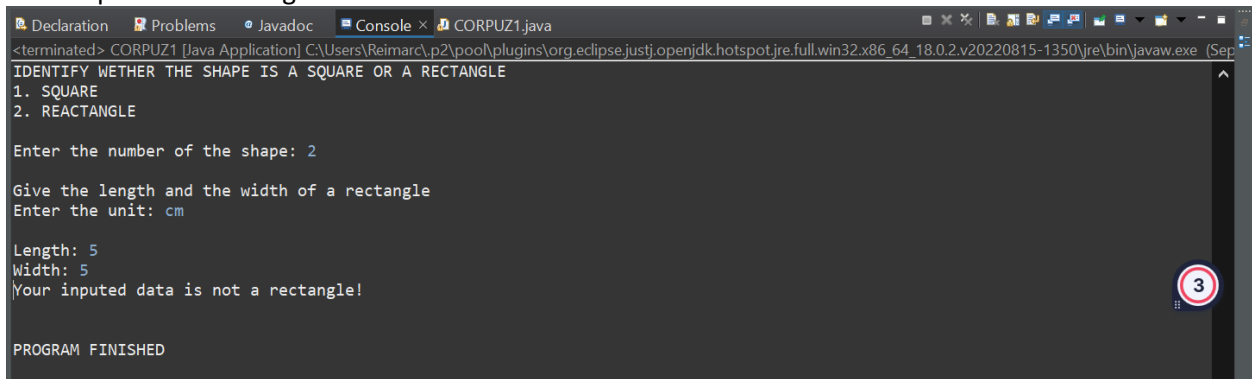
If none of the choices (square and rectangle)

```
IDENTIFY WETHER THE SHAPE IS A SQUARE OR A RECTANGLE
1. SQUARE
2. REACTANGLE

Enter the number of the shape: 3

WRONG INPUTED NUMBER!


PROGRAM FINISHED
```

If the input data for length and width are the same

```
IDENTIFY WETHER THE SHAPE IS A SQUARE OR A RECTANGLE
1. SQUARE
2. REACTANGLE

Enter the number of the shape: 2

Give the length and the width of a rectangle
Enter the unit: cm

Length: 5
Width: 5
Your inputed data is not a rectangle!


PROGRAM FINISHED
```

Code of the Program:

```java
import java.util.Scanner;
public class CORPUZ1 {

        public static void main (String args[]) {

                Scanner shape_input = new Scanner(System.in);
                //Scanner of which shape is to be identify
                System.out.print("IDENTIFY WETHER THE SHAPE IS A SQUARE OR A
RECTANGLE\n1. SQUARE\n2. REACTANGLE\n");
                System.out.print("\nEnter the number of the shape: ");
                int shape = shape_input.nextInt();
                //Input shape

                switch(shape) {
                //switch statement depending to what shape is selected
                case 1:
                    System.out.print("\nGive the size of the square\n");

                    Scanner square_input = new Scanner(System.in);
                    System.out.print("Enter the unit: ");
                    String squareunit = square_input.nextLine();
                    //I add a string input for the unit

                    squareshape(squareunit);
                    //method to assign the size of the side of the square
                break;
                case 2:
                    System.out.print("\nGive the length and the width of a
rectangle\n");

                    Scanner rectangle_input = new Scanner(System.in);
                    System.out.print("Enter the unit: ");
                    String rectangleunit = rectangle_input.nextLine();
                    //I added a string input for the unit

                    rectangleshape(rectangleunit);
                    //method to assign the length and the width of a rectangle
                break;
                default:
                    System.out.print("\nWRONG INPUTED NUMBER!");
                    //A default statement if the user did not choose 1 or 2 base on
the given 2 cases
                }

                System.out.print("\n\n\nPROGRAM FINISHED");

        }

        //I used the data type double for the sizes with decimal points
```

```java
        private static void rectangleshape String rectangleunit ) {
                // TODO Auto-generated method stub
                //I used the declared string variable rectangleunit for the final result
of the program
                Scanner size_input = new Scanner System.in ;

                System.out.print "\nLength: " );
                double length = size_input.nextDouble();
                //Input the length

        System.out.print "Width: " );
        double width = size_input.nextDouble();
        //Input the width

        //I added if statement to make sure that the possible length and width is
different
        if (length!=width) {
                System.out.print "\nShape: \"RECTANGLE with the length of " +length+ " "
+rectangleunit+ " and the width of " +width+ " " +rectangleunit+ "\"" );
          else {
                System.out.print "Your inputed data is not a rectangle!" );
                //Else statement if the inputed data for length and width is similar
                }
        }


        private static void squareshape String squareunit ) {
                // TODO Auto-generated method stub
                //I used the declared string variable squareunit for the final result of
the program
                Scanner size_input = new Scanner System.in ;

                System.out.print "\nSide: " );
                double sides = size_input.nextDouble();

                //Since the square is only asking the side of it and it is equal sides,
I just print the final result
                System.out.print "\nShape: \"SQUARE with the equal sides of " +sides+ "
" +squareunit+ "\"" );
                }
}
```

1.6 Follow-up Questions:

1. What do you notice in the Eclipse environment?

From the last first semester of my second year until now, I noticed a lot in the environment of Eclipse. First is how to create a file or a new project. Because there are many tabs that ask for the file name, file location, modifiers, package, etc. I noticed that I should differentiate what is the difference between package and class in creating a new java project. Since I explored Eclipse, I already know how to change the theme, font size, and colors. When it comes to coding there is a signal on the right side indicated in the number of lines for error while you coding. There are automatic suggestions while you are typing a statement whether it is an if statement, assignment statement, used for the switch, or even in the method. It detects what are you going to do next.

2. What Control or Iterative Statements do you use?
and what for?

In my program, the control that I used to simulate the given problem is Scanner for assignment statement for the input of data, Switch Statement to show the user what the given problem is, and two Methods for assigning the shape of square and rectangle. I also added an if statement for the possible outcomes if the user will input the wrong data or it is not applicable for what is asked in the program. Additionally, I included another data type like string and some other commands to make my output clean and easy to understand.

1.7 Conclusion

Every time that I am creating a program or a code, there is always something that I concluded and learned about. It is always about creating the syntax of my code. Every time that I am solving a problem using code it includes different syntax, I tried not to look in google or in our module so that if I solve with my own understanding, I know that I learned and I concluded some way of coding by myself. For example, using a curly bracket, I concluded that it serves as a boundary of the statement or the line. Another one is I cannot use the input data in a private method back to the main program. Next, I always need to remember the separation of the names of variables depending on the syntax or iterative statement. When it comes to the interface of Eclipse, I concluded that I can immediately create a syntax that is detected in the program. Again, even though I have some basic knowledge of Java Programming, there is always a thing or idea that I always concluded every time that I code and for the next project.