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Pencil & Paper 04

1. Write the code to compute the remainder when 99 is divided by 25. Declare an appropriate variable (named according to Java rules and conventions) to store the result of this computation.

The following code will compute the remainder of 99/25:

```
int remainderValue;
remainderValue = 99 % 25;
```

2. Write the code to convert the Fahrenheit temperature 98.6 to Celsius. The formula for doing so is ((FAHRENHEIT_TEMPERATURE - 32)/1.8). Declare an appropriate variable (named according to Java rules and conventions) to store the result of this conversion.

The following code will convert 98.6 degrees Fahrenheit to Celsius and store it in a variable:

```
float fahrenheitTemp = 98.6f;
float celsiusTemp = 0.0f;
celsiusTemp = ((fahrenheitTemp – 32.0f) / 1.8f);
```

3. Write the code to display the celsius temperature from the problem above to the console, formatted into a 5 character output width and 2 decimal places.

The following code will print the Celsius temperature to the console in the appropriate format:

```
System.out.printf( "%5.2f\n", celsiusTemp );
```

4. Declare a new String named *entireName* and assign it the value of the variables *firstName* and *lastName* concatenated, with a space in between.

```
String firstName = "The";
String lastName = "Dude";
```

The following code will concatenate the two strings and store the resulting string in a new object:

```
String entireName;
entireName = firstName + " " + lastName;
```

5. Write the Java code to display the 'T' and 'D' from the String *entireName* (created above) to the console.

The following code will print the 'T' and 'D' characters from the new string to the console:

```
System.out.printf( "%c%c", entireName.charAt(0), entireName.charAt(4) );
```

6. Alter the line of code below so that the words "this is how to do it" are commented out.

```
int x = -1; this is how to do it
```

The following line of code shows these words commented out:

```
int x = -1;     // this is how to do it
```

7. Alter the line of code below so that the section "/ 10" of the expression are commented out.

int y = ((x + 10) / 10) + (z * 5);

The following line of code has the division by 10 operation commented out:

int y = ((x + 10) / / 10 */ + (z * 5);*

8. Is *main* a method? If so, is it invoked? If it is invoked, when is it invoked?

Yes, *main* is a method within a class that is invoked automatically when a Java program is executed.

9. Given a class named *Animal*, write the Java code to create an instance of *Animal* named *horse*.

The following line of code will instantiate the class *Animal* and then assign it to an object named *horse*:

Animal horse = new Animal();

10. Given that the class *Animal* has a method named *eat()*, use the instance *horse* you created above to invoke the method *eat()*.

The following line of code will invoke the method *eat()* of the horse object:

horse.eat();