Name: Tung Do   Lab #2   Date: September 24, 2022
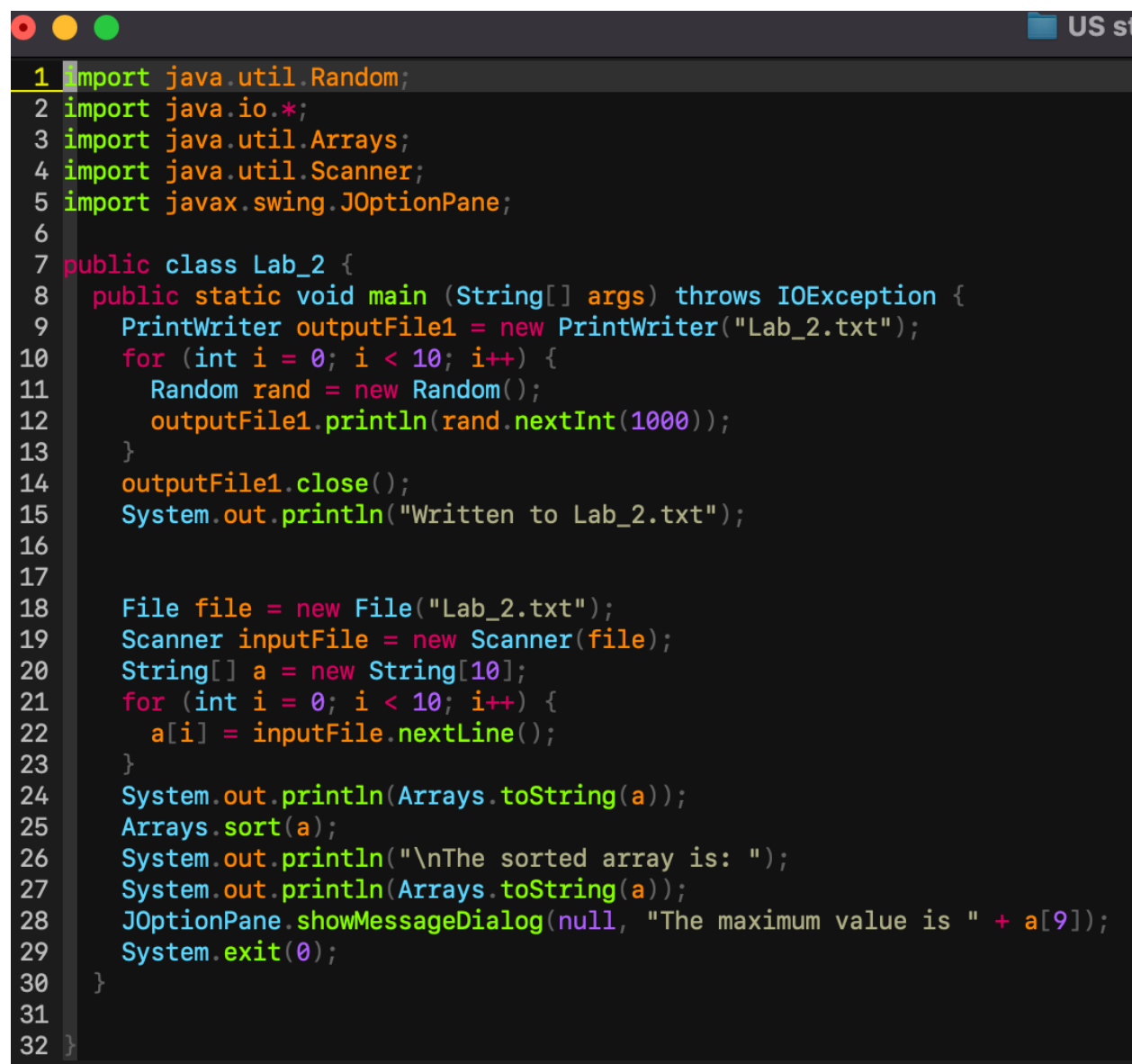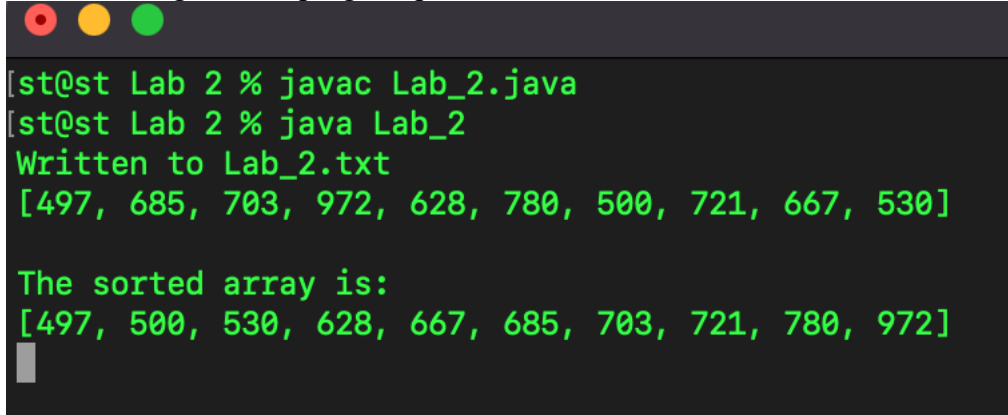
Objectives: The objective of this lab was to use FileWriter and PrintWriter class to create text file then store 10 random numbers inside it. Then use ReadFile class to read the data from the created file and feed it to the program in the form of an array. After that, sort the array and print it and output the maximum value in the array using message dialog box. Thus, in order to perform this lab, I had to learn how to code file, create file, printwrite, read file, random, sort, and output dialog message box classes. My goal was to create a program that can create a file, generate 10 random numbers, store them in the file, read the file to get the numbers, sort them, and print out the maximum value.

Program:

```java
import java.util.Random;
import java.io.*;
import java.util.Arrays;
import java.util.Scanner;
import javax.swing.JOptionPane;

public class Lab_2 {
  public static void main (String[] args) throws IOException {
    PrintWriter outputFile1 = new PrintWriter("Lab_2.txt");
    for (int i = 0; i < 10; i++) {
      Random rand = new Random();
      outputFile1.println(rand.nextInt(1000));
    }
    outputFile1.close();
    System.out.println("Written to Lab_2.txt");


    File file = new File("Lab_2.txt");
    Scanner inputFile = new Scanner(file);
    String[] a = new String[10];
    for (int i = 0; i < 10; i++) {
      a[i] = inputFile.nextLine();
    }
    System.out.println(Arrays.toString(a));
    Arrays.sort(a);
    System.out.println("\nThe sorted array is: ");
    System.out.println(Arrays.toString(a));
    JOptionPane.showMessageDialog(null, "The maximum value is " + a[9]);
    System.exit(0);
  }
}
```

Results:

- The console log that the program printed out.

```
[st@st Lab 2 % javac Lab_2.java
[st@st Lab 2 % java Lab_2
Written to Lab_2.txt
[497, 685, 703, 972, 628, 780, 500, 721, 667, 530]

The sorted array is:
[497, 500, 530, 628, 667, 685, 703, 721, 780, 972]
```

- The dialog message box to indicate the maximum value in the array.

Message

The maximum value is 972

OK
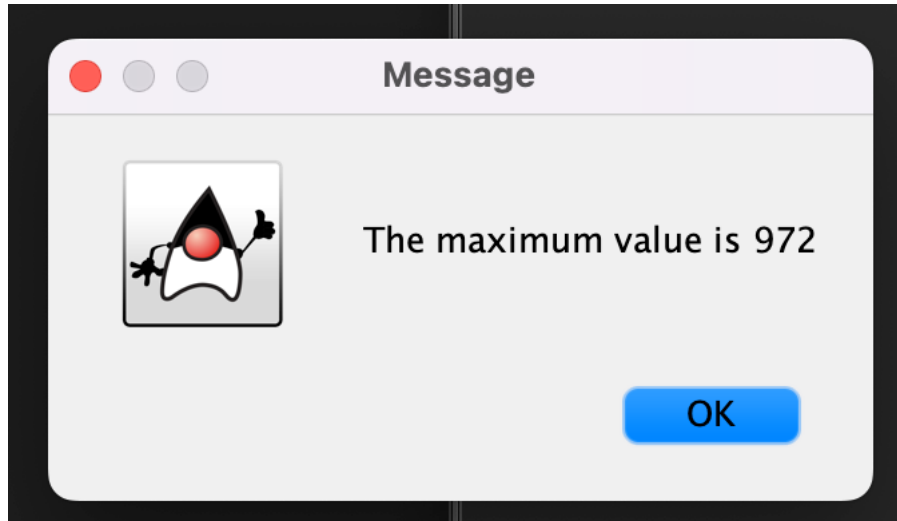
- The file that the program created and store 10 random numbers in it.

```
 1  497
 2  685
 3  703
 4  972
 5  628
 6  780
 7  500
 8  721
 9  667
10  530
11
~
~
~
~
~
~
~
~
~
~
~
Lab_2.txt [+]
```

Conclusion:
During the coding process, I have some problems with the Scanner method. Then I realize that for PrintWriter class, I can assign the file name directly in the "" mark, but I cannot do that with the Scanner. In fact, I have to write "File file = new File("Lab_2.txt");" before write "Scanner inputfile = new Scanner(file);". As a result, my program is able to create a file, store 10 random numbers inside it, then read the number from the file and sort them, print out the maximum value in a message dialog box. So the objective of tha lab 2 has been done.