

## JAVA INSTALL:

```
Terminal — -bash — 80x5
[callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ java --version
]
java 13.0.2 2020-01-14
Java(TM) SE Runtime Environment (build 13.0.2+8)
Java HotSpot(TM) 64-Bit Server VM (build 13.0.2+8, mixed mode, sharing)
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$
```

## JAVA\_HOME VARIABLE SET:

```
Terminal — -bash — 80x5
[callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ echo $JAVA_HOME
]
/Library/Java/JavaVirtualMachines/jdk-13.0.2.jdk/Contents/Home
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$
```

## JAVAFX VARIABLE SET:

```
Terminal — -bash — 80x5
[callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ echo $JAVAFX
]
home/callisto/javafx-sdk-11.0.2/lib
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$
```

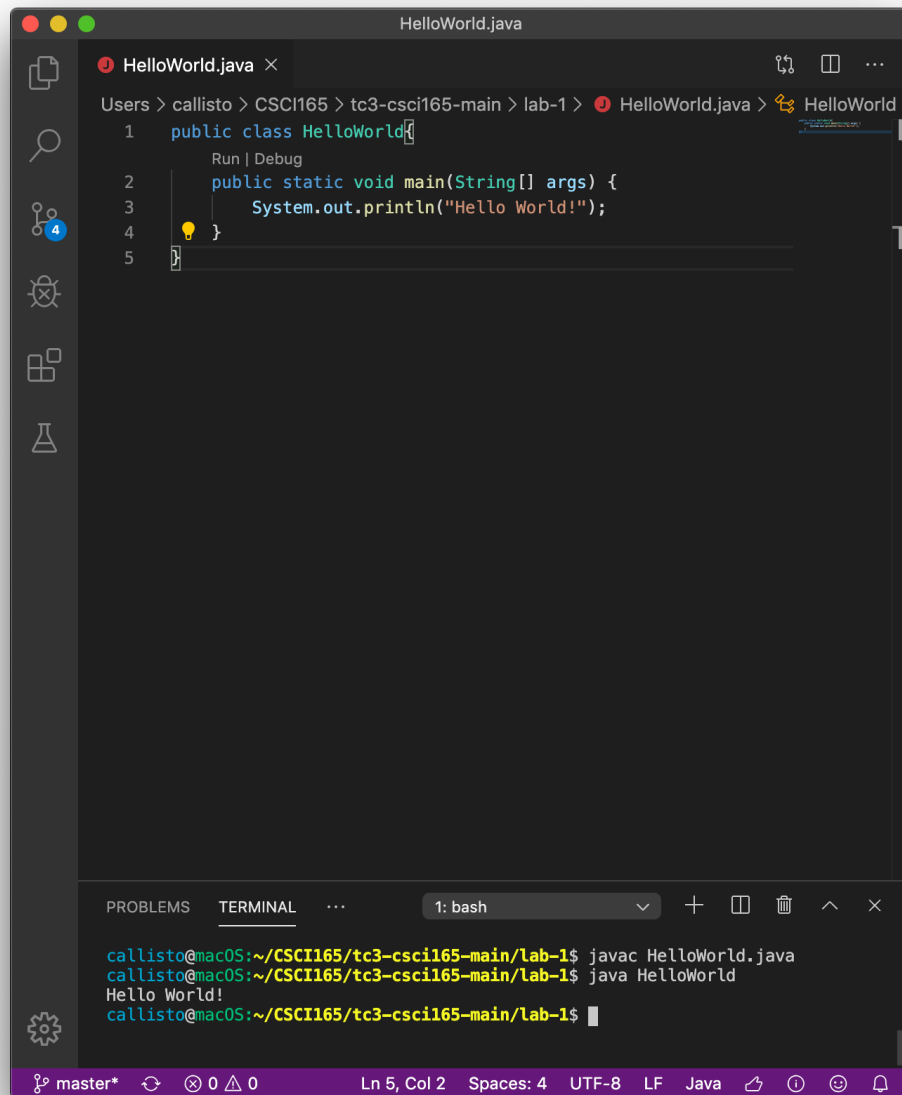
## JAVAFX APPLICATION COMPILING:

```
Terminal — -bash — 84x5
lab-1 — -bash      lib — -bash      +
[callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ javac --module-path $JAVAFX --add-m]
odules javafx.controls HelloFX.java
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ java --module-path $JAVAFX --add-mo
dules javafx.controls HelloFX
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ ls
]
```

JAVAFX APPLICATION RUNNING:



## HELLO WORLD COMPILED AND RUNNING:



The screenshot shows an IDE window titled 'HelloWorld.java'. The editor displays the following code:

```
1 public class HelloWorld {  
2     public static void main(String[] args) {  
3         System.out.println("Hello World!");  
4     }  
5 }
```

Below the editor is a terminal window with the following output:

```
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ javac HelloWorld.java  
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$ java HelloWorld  
Hello World!  
callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1$
```

## ADDITIONAL PROBLEMS:

- 1.)
  - Initialize a counter at 0
  - For every score:
    - add it to a sum in memory
    - increment the counter
  - When the counter is equal to 10, stop adding scores
  - Divide sum of scores by 10

- 2.)
  - Initialize a list of all letters [A-Z]
  - Initialize a blank string
  - For every character in the given word
    - get the index of the character in the list, store it in memory
    - add 5 to the index
    - perform modulus division of 26 on the value
    - add the character in the letter list at the index of the value to the blank string
- 3.)
  - “PUZZLES ARE FUN”
  - Initialize a list of all letters [A-Z]
  - Initialize a blank string
  - Get index of the first character in the string, in the list (“S” would become 18)
  - Get index of P in the list (18)
  - For each character in the given word:
    - Check to see if character is a space, if not proceed with remainder of loop
    - Get value of index of string character - index of “P” in list (“S” -> 18 - “P” -> 15 = 3)
    - Subtract previous value from index value of character
    - Perform modulus division of 26 on the value
    - Add the character in the letter list at the index of the value to the blank string
- 4.)
  - Replace single 4-digit number on chalkboard with one 1-digit number and one 3-digit number. The 3-digit number will be used to represent the sum, and the 1-digit number will represent the quantity of assignments.
  - For each homework grade given by brother:
    - Convert grade to hexadecimal format
    - add grade to sum of grades
    - set number of grades to quantity + 1, converted to hex
  - When finished, divide grade sum by quantity
  - Convert result back to decimal
- 5.)

Note: not all of these are printed to terminal, I just wanted to display the flow of execution

  - 15
  - 46
  - 23
  - 70
  - 35
  - 106
  - 53
  - 160
  - 80
  - 40
  - 20
  - 10
  - 5
  - 16
  - 8
  - 4
  - 2
  - 1 <- result

6.) Note: not all of these are printed to terminal, I just wanted to display the flow of execution

- 6
- 3
- 10
- 5
- 16
- 8
- 4
- 2
- 1 <- result

8.)

<b>Circle</b>
- radius: double
+ calculateArea(double): double

9.)

<b>Triangle</b>
- sideOne: double - sideTwo: double - sideThree: double
+ createTriangle(double, double, double): void + calculateArea(double, double, double): double + calculatePerimeter(double, double, double): double

10.)

```
1 public class Symbols{
2     Run | Debug
3     public static void main(String[] args) {
4         f_shapedThing();
5         o_shapedThing();
6         x_shapedThing();
7     }
8
9     public static void f_shapedThing(){
10        for(int i = 5; i > 0; i--){
11            for(int j = i; j > 0; j--){
12                System.out.print("*");
13            }
14            System.out.println();
15        }
16    }
17
18    public static void o_shapedThing(){
19        for(int i = 5; i > 0; i--){
20            if(i == 5 || i == 1){
21                for(int j = 5; j > 0; j--){
22                    System.out.print("*");
23                }
24                System.out.println();
25            }
26            else{
27                for(int k = 5; k > 0; k--){
28                    if(k == 5 || k == 1){
29                        System.out.print("*");
30                    }
31                    else{
32                        System.out.print(" ");
33                    }
34                }
35                System.out.println();
36            }
37        }
38    }
39
40    public static void x_shapedThing(){
41        for(int i = 5; i > 0; i--){
42            if(i == 5 || i == 1){
43                System.out.println("* * * * *");
44            }
45            else if(i == 4 || i == 2){
46                System.out.println(" * * * ");
47            }
48            else{
49                System.out.println("  * *  ");
50            }
51        }
52    }
53 }
```

callisto@macOS:~/CSCI165/tc3-csci165-main/lab-1\$ java Symbols.java

```
*****
*****
****
***
**
*
*****
*  *
*  *
*  *
*****
* * * * *
* * *
* *
* * *
* * * * *
```

