

COP2800C Module 10 Practice Exercise

Design a Java class named LambdaTester which includes a main method that declares a lambda expression reference which implements the following interface:

```
interface SimpleDouble {  
    //returns doubled value of parameter d  
    double doubleValue(double d);  
}
```

The program must declare an array of six Double values, followed by the declaration of an ArrayList which is instantiated using the declared array. Remember to program to the interface: declare the ArrayList as a List of Double objects but instantiate it as an ArrayList.

Then write a foreach loop (not an integer-based index for loop) which iterates through each element of the ArrayList, calls the lambda expression reference with the element and displays the resulting doubled value.

Sample output follows for a double array declared as

```
Double[] dArray = { 1.0, 1.5, 2.0, 2.5, 3.0, 3.5 };
```

Remember that your doubled values must come from an ArrayList created from an array similar to the one shown above.

Expected output:

```
Double of 1.0: 2.0  
Double of 1.5: 3.0  
Double of 2.0: 4.0  
Double of 2.5: 5.0  
Double of 3.0: 6.0  
Double of 3.5: 7.0
```

```
// LambdaTester.java  
// D. Singletary  
// 11/12/23  
// Implements and tests SimpleDouble functional interface  
  
import java.util.*;  
  
interface SimpleDouble {  
    double doubleValue(double d);  
}  
  
public class LambdaTester {  
    public static void main(String[] args) {  
  
        // declare the data array  
        Double[] dArray = { 1.0, 1.5, 2.0, 2.5, 3.0, 3.5 };
```

```
// create the ArrayList from the array
List<Double> dList = new ArrayList<>(Arrays.asList(dArray));

// use a lambda to define the interface behavior
SimpleDouble sd = val -> val * 2.0;

// apply the lambda behavior to each element
for (Double d : dList)
    System.out.println("Double of " + d + ": " + sd.doubleValue(d));
}
}
```