The following are 3 separate coding tests that should be developed using Java. Submit the code to your GitHub account and send a link to your account to the sender of this document. If you do not have a GitHub account, please create one first.

Given the following Shape interface:

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

public interface Shape {

public double getArea();

public double getPerimeter();

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Implement the classes: Triangle, Circle, and Rectangle

Write test classes for each implementation using the JUnit testing library.

(For more information: https://github.com/junit-team/junit4/wiki/Getting-started)

Extra bonus: Implement ellipse, square and/or quadrilateral

Given the following Java collection questions, implement the following using the Java Collection Framework.

Define the following 2 collections

* one contains integers 1 thru 10 (random order)
* one contains 6 thru 15 (random order)
* Print both collections
* Print the size of both collections

Combine the above two collections into a third collection

* Collection cannot have any duplicates
* Collection must be sorted
* Remove the middle entry
* Print the collection in reverse order
* Print the size of the collection

Define a collection that contains a key/value pair

* Add 5 key/value pairs to the collection
* Add a duplicate key/value pair (one of the five that was added)
  + - Check for duplicate key and print key/value if found (do not add it to the collection)
* Print the key/value pairs
* Print the size of the collection when done
* Comment the code and explain why the specific collection type was chosen.

Given the following lines of code:

for (int i = 1; i <= 5; i++) {

for (int j = 1; j <= (5 - i); j++) {

System.out.print(".");

}

for (int k = 1; k <= i; k++) {

System.out.print(i);

}

System.out.println();

}

Output:

....1

...22

..333

.4444

55555

Rewrite the code to only use 1 control structure (You can use any Java built-in library you want).

How would you rewrite this for the nth number instead of ending at 5?

FAQ:

Q: What if I have questions about this test?

A: Contact us with any questions via email to the sender of this document.

Q: What programming languages can I use?

A: Java only.

Q: How should I submit my test?

A: Submit the code to your GitHub account and send a link to your account to the sender of this document. If you do not have a GitHub account, please create one first.