Finish Demonstration: FunnyIntegerSet

This class has some bugs. Let’s test it with JUnit!

```java
public FunnyIntegerSet()
Instantiates an “empty” set

public void add(int x)
Adds a value to the set

public int findClosest(int x)
Returns the value in the set that is “closest” to x
```
Recommendations

• Lots of tests!
• Keep test code “simple”
Observations

• Tests are run in an arbitrary order!
• Two ways to fail:
  • Failing an assertion
  • Throwing an exception (more about this later)
• All tests will run, even if one (or more) fail
• If an assertion fails, the test is aborted. (Subsequent assertions are not attempted).

• Note: Project #3 does NOT lend itself to use of JUnit.
Memory Diagram for Method Calls

• What is a “stack”?  
  • push  
  • pop  
• What is the “call stack” used by the Java Virtual Machine?  
• What are frames?

Example: PassingParameters.java

Observations:  
• Primitives are passed “by value”  
• Objects are passed “by reference” (local copy can be modified!)
What is “this”? 

1. Using “this” to access the current object 
   Examples: 
   • Accessing the state of the “current object”  
     (Demonstrate with Student class) 
   • Writing a constructor with parameter names matching instance variables  
     (Demonstrate with Student class) 
   • Passing the current object as an argument to a method  
     (Demonstrate with SubmitServer, Student classes)