Lab Exercise 2
Implement and run the IntArrayBag Class

This lab exercise will have you finish implementing a partially implemented `IntArrayBag` class which uses a dynamically sized array as its underlying data structure. You will also use unit tests and write invariants to test and find bugs in the `add` and `remove` methods.

1 Implement the IntArrayBag Class

   1. Import lab2:

```
/afs/cs.uwm.edu/users/classes/cs351/401/pantherid/git/lab2.git
```

   2. Implement the `ensureCapacity` method for the `IntArrayBag` class. A stub for this method exists at the bottom of the provided file.

   3. Within `TestIntArrayBag.java`, we have already provided a test case for the `ensureCapacity` method. Ensure your implementation passes this test case.

2 Find the Error with JUnit

Using `testAdd` you should have a failed test that will help uncover the error in the method.

Note: DO correct the bug in the `IntArrayBag.java`.

3 Find the Error with Invariant

   1. Within `IntArrayBag.java`, you need to add the 2nd invariant checker to `_wellFormed`. This will also help point out bugs in your program.

   2. After writing the 2nd invariant, run assertions by right-click on the project, and click `Run Configurations`. This will open the Run Dialog. Displayed in Figure 1 on the following page.

   3. Click the `Arguments` tab, and in the `VM Arguments` box, enter

```
-ea
```

Similar to the Figure 2 on the following page.

   4. Click Run

   Note: Do NOT correct the bug in `IntArrayBag.java` though you must be able to explain what is wrong.

Once these steps have been completed, please see your TA to receive credit for this lab.
Figure 1:

Figure 2: