Ex. ArrayFunction.java

Recall: Every program has 3 data streams.

We can, from within a Java program, create new streams, pointing to other places, like files.
Ex: FileIO.java

There are 2 kinds of exceptions in Java:

- **Unchecked exceptions**
  - Represent defects in program that are "programmer's fault".
  - Subclasses of RuntimeException
  - Methods are not obliged to handle these exceptions (by the compiler)

- Example: ArrayIndexOutOfBoundsException
- Checked exceptions
  - Result errors outside control of programmer.
  - Subclasses of Exception, but not of RuntimeException
  - Methods are required (by the compiler) to handle these.
  - Example: FileNotFoundException
How can we handle an Exception?

1. Declare itself to throw that exception, thus obligating the caller to handle it, or

2. Catch the exception and handle it locally, use a try-catch block.

```java
try {
    // Some of that might throw an exception
} catch (ExceptionType e) {
    // Do something with e
}
```
Note: Some operations can throw more than one type of exception.

```java
try {
    // something bad
    try {
        // deal with e1
        catch (ExceptionType1 e1) {
            // deal with e1
        }
        // deal with e2
        catch (ExceptionType2 e2) {
            // deal with e2
        }
    }
    // finally
d    // deal with any other problems
}
```