

## Java Programming

### 2-4: Exceptions and Assertions

#### Practice Activities

##### Lesson Objectives:

- Use exception handling syntax to create reliable applications
- Recognize common exception classes and categories
- Create custom exception and auto-closeable resources
- Test invariants by using assertions
- Use try and throw statements
- Use the catch, multi-catch, and finally statements

##### Vocabulary:

Identify the vocabulary word for each definition below.

	A certain kind of try statement that contains resources.
	An invariant used to evaluate the assumptions of the class instances.
	Certain types of boolean statements that allow you to test specific aspects of your code.
	Key statement for handling exceptions in Java.
	An invariant that handles boolean statements to test internal values.
	An invariant that handles conditions in control flow statements.
	A statement that allows you to handle multiple exceptions.
	An optional addition to a try-catch statement that will always be executed.
	Run-time errors that can be handled inside the program.

##### Try It/Solve It:

1. You have included exception handling for the create button in the JavaBank application. Do the same for the make transaction button.
2. Create an exception class in the JavaBank application called "myException" that accepts a String message as a parameter in its constructor and passes the message to the super class to be printed out when an error message is thrown.
3. Update all of the `catch(Exception e)` statements in JavaBank.java to create a MyException object named newExc that sends the message "An unhandled error occurred!!" into the object.

4. Surround both the method calls for the transaction and create operations in try catch statements displaying the error message in a JOptionPane if a custom exception is thrown.
5. To test the custom exception, comment out all other catch statements so that only Exception e is left to handle any run time errors. Enter incorrect data for both the create and transaction functions. Uncomment the other catch statements when you have completed your tests.