**Discussion Question: Coding: Defensive and Secure.**

For this module's discussion board assignment, select **one** of the following to discuss:

* **Explain how exception handling works with a specific language of your choice. Provide an example of the code.**
* Find at least two applications that act as code analyzers. Do they analyze statically or dynamically? Which would you prefer? Why?
* In Chapter 8, the text mentions input validation. Provide a description and an example for at least three types of data validation checks.
* What are some security provisions to manage sessions? Describe at least two and which attack they can guard against.

***Before you submit your thread, put your name in the subject line.***

Exception handling is a valuable piece of knowledge to possess when programming. Depending on the programming language being utilized, exceptions are handled differently. The focus of this discussion will be on exception handling in Java. There are different ways to handle exceptions and errors in Java.

According to Oracle (2019), “an exception is an event that occurs during the execution of a program that disrupts the normal flow of instructions (sect. What Is an Exception?). An exception may be caused by “wrong data entered by the user, hardware failure, network connection failure, or a database server that is down” (Pankaj, 2022).

Within Java, there is the ability to use catch, try, or finally, blocks when handling exceptions (Oracle, 2019). An exception can also be thrown using a throw statement or throwable class (Oracle, 2019). A throw statement detects when an error happens. A try-with-resource statement declares resources or a resource object (Oracle, 2019). A benefit of exception handling is identifying the error in a program by specifying potential issues that may be occurring. If an error occurs, another course of code could be executed instead. An exception is a good way to anticipate user actions and prepare for what should happen next (Pankaj, 2022). However, a runtime exception occurs when something is wrong within a program (Pankaj, 2022). An error code can be printed in this case or others. Some exception classes can be invoked, like IOException, FileNotFoundException, and EOFException (Pankaj, 2022).

Here is a code example provided by (Pankaj, 2022):

package com.journaldev.exceptions;

import java.io.FileNotFoundException;

import java.io.IOException;

public class ExceptionHandling {

public static void main(String[] args) throws FileNotFoundException, IOException {

try {

testException(-5);

testException(-10);

} catch(FileNotFoundException e) {

e.printStackTrace();

} catch(IOException e) {

e.printStackTrace();

} finally {

System.out.println("Releasing resources");

}

testException(15);

}

public static void testException(int i) throws FileNotFoundException, IOException {

if (i < 0) {

FileNotFoundException myException = new FileNotFoundException("Negative Integer " + i);

throw myException;

} else if (i > 10) {

throw new IOException("Only supported for index 0 to 10");

}

}

}

**References**

Oracle. (2019). *Lesson: Exceptions (The JavaTM Tutorials > Essential Classes)*. Oracle.com. https://docs.oracle.com/javase/tutorial/essential/exceptions/index.html

Pankaj. (2022, October 7). *Exception Handling in Java | DigitalOcean*. Www.digitalocean.com. https://www.digitalocean.com/community/tutorials/exception-handling-in-java

**Assignment Requirements and Grading:**

1. An initial post of the diagram is due by **Thursday, 11:59 p.m., CT**.
2. Submit your post by clicking on the **Assignment Link** above, then **Create Thread**. You must create a thread in order to view your peers' posts.
3. A minimum of three (3) responses, **to the original threads of other students**, of 100-200 words each are due by **Sunday, 11:59 p.m., CT**.
4. To view the rubric grading criteria, click on the following link: [Discussion Board Grading Rubric](https://content.bellevue.edu/cst/csd/rubricdbv3.pdf).

**(50 points)**