Random Test Data Generation

Research and Design Document



Course: Bachelor of Science (Honours) in Software Development

Name: Kyle Kinsella

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Supervisor: Chris Meudec

**JUnit: A brief Overview**

JUnit is a unit testing open source framework for the Java programming language that is used for writing and executing automated tests. Unit testing involves testing certain pieces of code that we are trying to test [1]. For example, we could test one line of code, a method, or one big class. Smaller units are preferred in order for faster execution and easier to identify potential failures. Anytime there is a new piece of code added, all of the JUnit tests must run again, this is because if the new code that we have added has an error, our tests must be able to detect that there is a problem within the software. Below are a few more potential examples that could be used to test to see if a number can either subtract, multiply or divide.

public class App {

public static int sub(int num1, int num2) {

return num1 - num2;

}

}

public class AppTest {

@Test

public void subtract() {

int num1 = 1;

int num2 = 3;

Int ans = App.sub(num1, num2);

}

}

public class App {

public static int mul(int num1, int num2) {

return num1 \* num2;

}

}

public class AppTest {

@Test

public void multiply() {

int num1 = 33;

int num2 = 30;

Int ans = App.mul(num1, num2);

}

}

public class App {

public static int div(int num1, int num2) {

return num1 / num2;

}

}

public class AppTest {

@Test

public void divide() {

int num1 = 32.3;

int num2 = 5;

Int ans = App.div(num1, num2);

}

}

**Choosing an IDE**

The target IDE I am going to choose for my project is Eclipse that was developed by IBM [2]. In order for me to start making an extension I did some research to see how to add an extension within Eclipse [3]. To add an extension to eclipse you click on “Help” -> “Eclipse Marketplace” from there you can install any plugins [3].

**References**

1. Simpl;learn. (2024). What is JUnit. Retrieved from:

<https://www.simplilearn.com/tutorials/java-tutorial/what-is-junit>

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1. Eclipse. (2024). Installing Eclipse. Retrieved from: <https://www.eclipse.org/downloads/>

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1. YouTube. (2024). Install plugins. Retrieved from: <https://www.youtube.com/watch?v=dNc1uJxsJqM&list=PL82FQWeDS43DEFig1OpPFutu_4r5S8w59&index=3&t=74s>

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