Random Test Data Generation

Final Iteration Report



Course: Bachelor of Science (Honours) in Software Development

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**My laptop broke: The story how it happened**

On the 15th of April I was working on my project, as I normally do, I was minding my own business and out of the blue my laptop just started to show coloured lines and my whole laptop froze. When this all happened I was in complete shock, as I did nothing wrong for my laptop to act this way. As any normal human would do, I opened up Google and Youtube and many websites to try and find out what might have caused this to occur. After about 2 hours of research I couldn’t find any useful information to help me.

This is exactly why you must constantly be backing up your work that you have done, either to a portable usb or a cloud service such as GitHub, I would really like to thank the GitHub cloud service platform.

The work I had done on the 12th of April (my String and Char code) and the work I had done on the 13th and 14th of April(some of my int[][] array code), I hadn't backed up to anything. This was really bad as I could have potentially lost all of that work because I didn’t back it up and my laptop was not turning on at all. When I would go to try and turn on my laptop my power button would just keep flashing and you would hear my laptop trying to boot but for some reason it couldn’t boot my laptop at all, I kept trying and after a few hours I got my laptop on, I immediately did a commit of my code that I had did from the 12th - 15th of April to my GitHub account. But then I realised that I won’t be able to code my project because my laptop has broken. After all of this had happened I explained the whole story to my parents and they said to me that they have a laptop that I can use for the remaining time left in the project. This was very good news for me because I can now continue to work on my project. So I downloaded eclipse, configured it and got my code from my GitHub and I just continued to write more code and try to get my project done as soon as possible.

The timing of this incident was extremely unlucky. I say this because my project is to be submitted on the 25th of April and this incident happened eleven days before I had to submit everything. That is how my laptop broke and most of the backstory behind what happened. Just remember to **always back up your work regularly!** During this whole project I have been using a remote repository called GitHub, this is a cloud service platform for hosting your own code and any many others peoples code. This is a very good service for exactly this reason.

**Revisiting functionality for appending, overwriting or making a new Java file.**

After my demonstration of my project after the ending of the second iteration, I got some very good feedback on what to do and what I needed to update, but during the second iteration I worked on a feature for the tester(user) to be able to overwrite a file if the file exists or if they don’t want to overwrite a file, they will be able to append new content to the end of that file. I worked on this feature for about two days. On the second day of trying to get the feature to work, I was having lots of difficulties but I was able to get the overwriting of a file to work, but for some reason the appending to the end of the file didn’t want to work. But after my demo of the project at the end of the second iteration I got some feedback about this and I was advised to try and go back and to try and get it to work. So I put it onto my to-do list to revisit this feature at some point during the third and final iteration of the project. One of the days during the final iteration, I worked for one whole day on this feature and I was able to get the overwriting of a file to work perfectly, and I was able to append new tests to the end of the file, but a extra curly bracket would always get wrote to the file, so I tried to debug this issue for hours but nevertheless I was unable to fix this issue.

So because this issue was stopping me from making this feature, I decided to withdraw from the appending to a file because no matter what I did it wouldn’t work. But out of nowhere I thought of an idea, what if I just make a new Java file with the new tests. So I went off and developed this feature into my software and after a few hours of development I had my feature all created.

**Confusion of Boundary Values: My understanding of “Boundary Values”.**

During the second iteration I was trying to get an understanding on what exactly boundary values are. I proceeded to the internet to do some research on what a boundary value is [1]. After watching the video on what a boundary value is, I started to do some programming based on my understanding of the video. During one of my meetings with my supervisor I showed my supervisor what code I have for the boundary value [1], and what it is doing and my supervisor basically said to me this is not correct. Then after the meeting I was trying to figure out why it is wrong, but I was just totally confused, I was very confused due to what I had watched in the YouTube video [1] and what I was told to do for boundary values from my supervisor, I couldn't seem to get a good understanding on what I had to do for boundary values.

It was starting to come the end of the second iteration and I had programmed out my boundary values to what I thought was correct, but on the day of my demo of my software, most of the things I had developed in the second iteration was correct but my boundary values where completely wrong based off the feedback that was provided to me. I was told by my supervisor what to do for boundary values, but for me I couldn't understand them. So at my next meeting with my supervisor, I asked for the final time “what do I need to do for boundary values?”, and I was told that for types like int, float, long and many more the boundary values are “-1, 0, 1”. And for types such as “String, char and int[][]” the boundary values are “null, empty, one value, many values”, I had a big issue with this. But finally after many attempts to try and get an understanding of boundary values, it just clicked with me after my meeting with my supervisor. But at this point there were only two weeks left in the entire project. This was a little bit stressful as I had to try and update some of my previous work from the last iteration and I had to also work on my boundary values, but I tried not to panic and I just continued to work on my project and eventually I got my boundary values to work, based off the feedback that was given to me at the end of the second iteration.

During the final iteration I developed my boundary values for the types, int, float, double, long and boolean. Then I tried to make my boundary values for String, char and int[][] but for some bizarre reason I was not able to randomly generate a null value, an empty value, one value and many values, and because I could not get these values randomised, ment that I was not able to make boundary tests for these types String, char and int[][]. I have to be able to randomise these values in order for me to be able to use these values for a boundary value test.

**Issues with installation process.**

During this iteration one of my main focuses was to be able to download my software onto my machine, and if I can get it downloaded onto my machine, I just need to write some instructions into my read-me file in my GitHub so anyone that wants to use my tool has the flexibility to do so. But only if this was that simple, firstly I would like to mention that trying to install your own software, on your own, with absolutely no documentation for help from eclipse, absolutely no help from Google and Youtube, makes this process almost impossible. One day I was just messing around because I didn’t have any clue what to do, I accidentally installed my software onto my machine. At first I was incredibly happy, but when I went to test to see if my software works, I got an error. Then for the next two whole days I spent trying to fix this error that I was getting but I couldn’t get it to work, no matter what I did.

Due to the fact that I couldn't fix the error that I was getting I decided to discard the idea of downloading my software to my machine, also meaning that anyone that would want to download my software to their machine, wouldn't be able to do so. So if you want to use my software on your machine, please go to my GitHub and read the read-me file on what to do.

You can access my GitHub from this link here: <https://github.com/KyleKinsella/Random-Test-Data-Generation/>

**References**

1. YouTube. (2024). Boundary value analysis (BVA). Retrieved from: <https://www.youtube.com/watch?v=x2fXxiLTbSE>