**Summary**

As technology advances with the latest and greatest tech released to the public it being a smartphone or a new program instillation unit testing is an important aspect in developing the newest product. Having a form of unit testing benefits the project in many ways. It adds the element of Quality assurance of the code developed process. Junit testing adds the state of on the go testing without having to connect to a database to check if the function is running properly. Working with real data can be very risky to use for testing purposes.

In this term, I have learned and implement J-Unit testing into to a full CRUD function project. The purpose of implement J-Unit testing in a program is to identify if a programs code function is functioning and running properly with little to no errors. Working on the testing on a program to ensure that the logic of the program is free from defects and eliminates the possibility of security breaches form malicious activity from unwanted threat. The approach to the software requirements that align with the previous assignments is understanding the core concept of the clients demands and interpret them into code. Having the understanding of the functionality testing will benefit in way to ensure that the test case is properly utilized.

Regarding the previous project, was the first time applying a full test on a big project. The process of me testing the effectiveness of the test and the test subject is fine tuning the code to relate to the test eliminating the complexity of the logic given in am still a beginner and following the guidance of videos from Udemy course I Purchased and the available documentation from Spring-boot. To get the effective coverage I set up the function as a Boolean where if the logic passes with out fail it will run true and display fails if the logic returns false. I have ensured that I have created test case for every function that I have made and evaluated them running a pass.

To ensure that my test case was technically sound was to keep the naming convention. When naming a function as for the example I provided createApp() responsibility is to create the and append it to the Array list for storage. For the test coverage I used the same name as before but adding a test for its purpose for instance createAppointmentTest(). Having this naming method makes the project more readable and much easier to work without getting lost and jumbling through code.

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Graphical user interface, text, application, email

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When I first learned java programming from a previous course, I have never used a Boolean for a function type. I have started using Boolean for this term as learned from examples from the course and other recourse. For the code example I will be using the creating function from the appointment class. Using this function was much more of a challenge due to using the date built- in method.

**Reflection**

Working on the previous assignments and complementing project one assignment this term, the software testing techniques that I employed are behavior vs static unit testing, another technique that I put in place is keeping Junit naming Convention pertaining to the function. Another software testing technique I used is dynamic testing, which falls more in the lines of black box testing and white box testing. The characteristics of black box techniques is the internal working structure of that application this is unknow. the characteristics of white box techniques is the internal working structure is known.

The software testing techniques that I did not integrate in my project is testing for errors. I unfortunately was very limited in time where I could not implement the proper syntax without getting a red-light error. Testing for errors in the project one Assignment, we have a conditional statement where it will check if the value input length is 10 characters long, we can creating an assert error to evaluate if the code block is properly evaluating true or false. In the case of testing for error we need to have a input that is greater than 10 if the code runs false we have passed the test and the test was successful.

The first technique I have mentioned was keeping naming convention having this in place helps other developers in the team work on a larger scale project. The next technique I mentioned was white box development. Creating a function that will create a task contact and appointment, we created a test with a set of items that we will use in place to be stored into an array.

The mindset I adapted while working on the projects is to not be bias of your work logic can be flawed due to human error. Revisiting the logic of the function with a test bench help exploit the vulnerabilities. While this experience humbled me greatly, I have learned to slow down and revisit the functions with a clear mind and create test for pass and test check for errors. Understanding the principles in developing test cases is crucial. With the internet accessible to the public, it can be a target to malicious activity. SQL injections are a primary cause of vulnerability. The process of eliminating bias is to identify that code has flaws and the possibility of interpreting your thought into code. There will always be a form of entry for data leaks that can be exploited by an attack. Practicing caution in the project is the first layer of defense in the project as it gets passed down to the other phases in the project cycle.

In the scenario in working for a company, it is important to have a program that is running efficiently and accurately as requested by the client. Having the client and user in mind and implanting a form of testing we can eliminate the problem of faulty code. Being negligent in programming can lead to very damaging program that will lead to very heavy fines and loss of trust of a program from its users.

How I would plan to avoid technical debt is, first never trust that a program is running properly. I do recall many incidents in the past where faulty code had led to companies undergo penalties such as lawsuits and heavy fines that can lead to a company’s demise. Creating a function for a simple calculator can be a simple task but when facing large numbers, it can become susceptible to errors, which will tie into a full-length program that is handling large set of users. As for what I have done in the previous project this term and what will come in projects in the future creating test to analysis the program I write is functioning properly with the necessary tools available.

Work cited page

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