Jason Kremhelmer

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Module 2: Journal Entry

**Statis Testing**

Static testing is a type of testing where the code is verified, however it is not executed. This method checks for defects in the code. It is usually performed during the early stages of code development. There are many static testing techniques, here are a few:

* Informal reviews
* Walkthroughs
* Technical Reviews
* Code inspections

**Dynamic Testing**

Dynamic testing is performed to validate the dynamic behavior of the code. This would involve inputs and analysis of the outputs of the code. There are 2 ways to run dynamic testing and they are:

* White Box testing
* Black Box testing

Below is a table pulled from (Difference between Static and Dynamic Testing, (Updated)2024)

| **Parameters** | **Static Testing** | **Dynamic Testing** |
| --- | --- | --- |
| **Definition** | Static testing is performed to check the defects in the software without actually executing the code. | Dynamic testing is performed to analyze the dynamic behavior of the code. |
| **Objective** | The objective is to prevent defects. | The objective is to find and fix defects. |
| **Stage of execution** | It is performed at the early stage of software development. | It is performed at the later stage of the software development. |
| **Code Execution** | In static testing, the whole code is not executed. | In dynamic testing, the whole code is executed. |
| **Before/ After Code Deployment** | Static testing is performed before code deployment. | Dynamic testing is performed after code deployment. |
| **Cost** | Static testing is less costly. | Dynamic testing is highly costly. |
| **Documents Required** | Static Testing involves a checklist for the testing process. | Dynamic Testing involves test cases for the testing process. |
| **Time Required** | It generally takes a shorter time. | It usually takes a longer time as it involves running several test cases. |
| **Bugs** | It can discover a variety of bugs. | It exposes the bugs that are explorable through execution hence discovering only a limited type of bugs. |
| **Statement Coverage** | Static testing may complete 100% statement coverage incomparably in less time. | Dynamic testing only achieves less than 50% coverage. |
| **Techniques** | It includes Informal reviews, walkthroughs, technical reviews, code reviews, and inspections. | It involves functional and non-functional testing. |
| **Example** | It is a verification process. | It is a validation process. |

**Static and Dynamic testing benefits**

It is important to do both static and dynamic testing. They both testing in different ways and catch different vulnerabilities. During dynamic testing you may run into an issue where the code isn’t doing what is planned. At this point you would want to go back into static testing in order to find the cause of the issue.

Static testing would be able to pick out stuff such as poor coding practices and other issues that my not effect the end-user, it could however make updating the program harder in time.

Dynamic testing on the other hand will tell you if the product meets the customer requirements on functionality.

# References

*Difference between Static and Dynamic Testing*. ((Updated)2024, April 24). Retrieved from GeeksforGeeks.org: https://www.geeksforgeeks.org/difference-between-static-and-dynamic-testing/