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* **What is static testing?**

According to the knovel reading, “Static techniques test software without executing it. They are important because they can find errors and defects before code is executed and therefore earlier in the life cycle of a project, making corrections easier and cheaper to achieve than for the same defects found during test execution” (1). Static techniques use peer review, code inspection, and code walkthrough. Peer review has another member review your code in order to find errors in the code. Code inspection is used to find defection in the code and to find any process improvement. Code walkthrough is when the programmer walks other members through the code, and they attempt to spot any errors as a team by asking questions.

* **What is dynamic testing?**

Dynamic technique tests software in an environment while executing the code. Dynamic testing tests checks the program code to analyze the input and output of the software. Dynamic testing is usually tested in the later stages of the SDLC and this type of testing cost more than static testing. The Dynamic techniques use system testing, integration testing, and unit testing. System testing tests the complete software to make sure the software meets all the customer’s requirement. Integration testing is performed after unit testing and its to check any errors between section of code. Unit testing is performed to check the code is functioning before adding any additional code.

* **What are the differences between static and dynamic testing?**

The differences between static and dynamic testing are the following:

1. Static testing test software without executing it and dynamic testing tests the software by executing it.
2. Static testing looks to prevent defects while dynamic testing looks to find the defects and fix those defects.
3. Static testing is performed before the compilation while dynamic testing is performed after the compilation.
4. Static testing cost less for finding and fixing defects and dynamic testing cost more for finding and fixing defects.
5. Static testing checks for errors in code, required documents, and design documents, while dynamic testing checks the overall system performance, CPU, and the software system functional behavior.
6. Static testing during the verification phase and dynamic testing during the validation phase.

* **Why is it important to use both static and dynamic testing?**

I believe it is important to use both static and dynamic testing because they complement each other. Static testing is used early in the stages to prevent any defects/errors from happening and dynamic testing is used later in the stages to discover any defects within the code. Static testing and dynamic testing complete the tasks the other does not do.

**REFERENCES:**

1. Hambling, B., Morgan, P., Samaroo, A., Thompson, G., & Williams, P. (2015). *Software testing: An ISTQB-BCS certified Tester Foundation guide* (3rd ed.). BCS, The Chartered Institute for IT.
2. Static Testing vs Dynamic Testing: What's the Difference? (2020). Retrieved November 08, 2020, from https://www.guru99.com/static-dynamic-testing.html