**Journal:**

**Dynamic and Static Testing**

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1. What is static testing?
   1. Static testing is a technique used in testing software without executing the program. This is important because it can detect errors earlier in the life cycle project before the code is built, making corrections easier and cheaper (Hambling et al., 2019). This includes work products such as business requirements, functional requirements, security requirements, non-functional requirements, and specification documents to find and remove errors.
2. What is dynamic testing?
   1. Dynamic testing is another technique in testing software that executes the program. This testing technique includes unit testing, integration testing, and system testing to detect any runtime errors and security vulnerabilities. Dynamic testing evaluates the performance and functionality of a software during its execution.
3. What are the differences between static and dynamic testing?
   1. The biggest difference between static and dynamic testing is that static testing is conducted without executing any code while dynamic testing is conducted by executing code. Static testing is useful to detect errors sooner and more easily while dynamic testing ensures code is functioning as expected during execution. Static testing can be more cost effective by finding these defects sooner but doesn’t test processes during runtime whereas dynamic testing does. Both testing techniques perform differently but complement each other when testing software.
4. Why is it important to use both static and dynamic testing?
   1. Static and dynamic testing work together to detect errors as soon as possible. It is crucial to implement both techniques into testing your software to achieve maximum quality and performance. By combining both testing techniques, it allows us to detect errors earlier in the life cycle and test runtime functionality. This approach to using static and dynamic testing helps improve the overall security and reliability of the software, which leads to a higher quality product.

**Reference**

Hambling, B., Morgan, P., Samaroo, A., Thompson, G., & Williams, P. (2019). *Software testing: An istqb-bcs certified tester foundation guide - 4th edition*. BCS Learning & Development Limited.