2-2 Journal: Dynamic and Static Testing

Dhiraj Gurung

Southern New Hampshire University

CS320

Toni Farley

January 17, 2025

**Dynamic and Static Testing**

Static testing is a two-part process that aims to test software as a prophylactic measure to prevent defects before the code is executed. The first step of this process involves a code review where the code is manually reviewed for any errors. In the second step, called the static analysis, the review is generally automated using software testing tools. Static testing is done at an earlier phase of the software development lifecycle (SDLC) and is thus generally cheaper than dynamic testing. One way this is possible is because static testing can detect errors prior to code deployment and thus help save both money and time during deployment.

Dynamic testing is carried out as part of the validation process after the code has been deployed. During the dynamic testing, the code is executed and testers will try to catch any errors and issues with the code. This may involve doing tests like unit testing, system testing, acceptance testing, integration testing, functional testing, and non-functional testing. Dynamic testing is done after the fact and is like a last-ditch effort to catch any errors before the code is released to the public.

The main difference between static and dynamic testing is the fact that static testing occurs prior to code execution while dynamic testing occurs after the fact. Additionally, as a result of this dynamic testing tends to be more costly. Static testing is done as a part of the verification steps and dynamic testing is done as a part of the validation steps. Static testing involves a higher level review of documents and code while dynamic testing involves testing of the written code itself both in an effort to find and catch defects.

It is important to use both static and dynamic testing because utilizing both can help save both time and money during the SDLC. The more errors and defects you can catch with static testing the more time and money you will be able to save. Additionally, it is also important to use dynamic testing and test the written code before releasing it to the public to ensure that there aren’t any major bugs or issues with the code. However, if you only use dynamic testing and not static testing you may miss some errors that could’ve been found during a review. This may result in longer developments and a delay in the project development schedule.