Testing is a crucial part of any development, and probably the most important. With out testing you will likely be submitting code that is riddled with bugs or software breaking changes. Even when not in software development we normally review items like emails one last time before we send them to proof read our mistakes of punctuation and spelling errors. But manual testing could take forever compared to automatic testing. There a few different types of types such as Unit tests, Acceptance tests, and Integration tests. However there is more to consider when using the Ideal Pyramid for automated testing.

To figure out what’s Ideal for automated testing, here is a few definitions of the various testing. A Unit Test is usually tests “a single method, class, or function in isolation”. (Kim et al., 2016) This provides the developer with confidence that their code will work as intended. The Acceptance test is used to test the whole application. (Kim et al., 2016) It’s a high-level test to once again verify that the application is working as intended. For the Integration Test it’s when we test that our code works with other applications. (Kim et al., 2016) This is generally the last test to be passed and hopefully by then all the bugs have been sorted out before the end of this stage.

But what about the Ideal Pyramid of Automated Testing. An idea issued by Martin Fowler as he describes what ideal testing should be. Ideally Martin suggests that “we are able to catch most of our errors using our unit tests.” (Kim et al., 2016) Also that a build should only take ten minutes to process a unit test. While the Acceptance test that we are using a database and testing the application as whole may take a few hours. (Kim et al., 2016) The main idea of automated testing is to “find errors as early in the testing phase as possible.” (Kim et al., 2016) Which is the reason for processing many smaller unit tests before we continue into the longer running tests such as acceptance tests. (Kim et al., 2016)

The Ideal Pyramid of Automated testing also suggests that “errors are found in the fastest category of testing possible.” (Kim et al., 2016) And part of that must deal with if we are finding errors in the slower tests the amount of feedback needed could take more time for the developers to process. (Kim et al., 2016) It also helps that in the unit tests if bugs are found its easier to fix. In the integration phase bugs can be very hard and time consuming to correct. (Kim et al., 2016)

The conclusion of the Ideal Pyramid for automated testing is that there should be a lot of unit tests. The fact that unit tests are very quick also makes it easier for developers to fix. Compared to later tests such as integration tests which could take much longer due to the complexity of the code which are also important, just not in the frequency of unit tests. Your bugs should ideally be sorted out in the Unit Tests. Also, all tests that can be automated should be automated. Automated tests save time and money in all stages of development and manual tests are prone to human error.

References:

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