* What is static testing?

Static testing refers to the process of testing the code without executing it. It can be seen as a ‘review’ which describes the first static testing technique. These reviews can be informal, or as formal as an inspection. Main differences between both are the amount of regularity that the review will take. The second is Static Analysis Tools, which run tests against code violations, dependencies, and software model inconsistencies.

* What is dynamic testing?

Dynamic testing consists of testing done to the code and therefore executing the program to find defects that wouldn’t show in the static testing. Dynamic testing falls into 3 categories: Specification-based, Structured-based, and Experience-based. Each category requires a set of test cases which will document and test the areas specifically and efficiently by specially trying all ways a certain part of the program may break.

* What are the differences between static and dynamic testing?

The main difference between static and dynamic is that in static testing the code isn’t executed at all but will not identify issues like logical errors. Dynamic testing, on the other hand, is looking for defects that may break the application like wrong inputs, incorrect functions, user errors, and more.

Another difference is that dynamic testing requires test cases to be written before testing them. This way testing is efficient and documented for traceability.

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

It is important to perform static testing, to prevent errors that could have been corrected prior to execution from costing more if identified in later stages. Also, the use of static analysis tools helps to prevent vulnerabilities that could be missed given the ability the tool has to identify many errors against an extensive database and risk scores.

Dynamic testing is just as important because it will reveal errors not seen in static testing, by forcing test cases that have expected results, and if that result isn’t achieved, it will point to a defect on the system and prompt the developers to work on a solution.