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### Concept 1: Testing

- the act of examining the behavior of software ~~under~~ under different conditions using different techniques, for a certain objective. It involves creating test plans, designing test cases, executing tests, and analyzing the results.

Example: performance testing  $\Rightarrow$  increasing the number of requests sent to a web server to observe what happens (if it crashes, if requests are lost etc)

### Concept 2: Pair-Programming

- a software development technique in which 2 programmers work together at one work. One, the driver, writes code while the other, the observer or navigator, reviews each line of code as it is typed in; these roles are ~~switched~~ supposed to switch frequently. Example: one programmer writes an algorithm to check whether a number is prime while the other reviews the logic to each line.

### Similarities:

1. Quality  $\rightarrow$  both approaches involve a focus on qualitative, clean code, either through ensuring results in certain circumstances, or continuous review & revision
2. Iteration  $\rightarrow$  testing is performed in multiple cycles, with different techniques; pair programming develops parts of the software sequentially
3. Collaboration  $\rightarrow$  testing involves communication with developers or product managers, pair programming is inherently about cooperation between 2 programmers

4. Continuous improvement -> Both activities are designed to encourage the development of better skills, understanding and infrastructure to help accomplish the objective.

Differences:

1. Roles -> the testers are the main actors of a software testing operation, which perform different variations of tests; the two pair programmers have opposite functions
2. Timing -> pair programming, when performed, is an integral part of the development cycle; whereas testing can happen before, during, or after development
3. Objective -> the main mission of testing is to find defects, while pair programming aims to not create them in the first place
4. Skillset -> testing may or may not require the skill to develop the software that is tested, and programmers can write code with no tests at all.