

### Definition : 2 Categories of testing

There are 2 categories of testing: unit testing and property testing.

## Unit testing

- **Unit testing** test the smallest atomic units of software independently of one another. (Check each function)
- **Spec testing** is a newer version of unit testing.

One limitation: they test atomic units independently, so they do not verify all pieces work together properly.

## Property testing

Property tests test the formal properties of programs without requiring formal proofs by allowing you to express a truth-valued, universally quantified (applied to all cases) function, which will be checked against randomly generated inputs.

Executables are applications that the operating system will run directly, while software libraries are code arranged in a manner so that they can be reused by the compiler in the building of other libraries and programs.

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### Definition : Idempotence

Idempotence refers to a property of some functions in which the result value does not change beyond the initial application. Eg: the `sort` function.