# Unit tests

A code which will test the code in your project

Example: if you write a program takes input and checks whether it is prime number or not, you can write a piece of code which will pass a string, integer, list, float value and checking whether it is returning response in the way you expected

## What happens in unit test code

* Sets up conditions/ inputs
* Runs a piece of code
* Checks test fail/pass status with assertions

## Many benefits

* Ensure code runs as expected
* Catches bugs

# TDD

Test Driven Development is a **software development practice**

## In general, we will write a piece of code and then test it using unit tests, But in TDD we have a different approach and it is as follows

1. Write the test case first
2. Run the test, the test should/will fail
3. Then add the features which will make the test pass
4. Then run the test again, this time it should pass, if it fails try looking what’s going wrong in step 3, correct it and then run again step 4
5. If you want to add developments, then refactor the code and start again from step 4

## Why use TDD

* Better understanding of code
* Gives confidence to make changes
* Lot of thinking goes in to writing tests so that, we will keep the test cases in mind which will help us to write code almost perfectly which will reduce the initial refactoring
* Gives good test coverage
* Reduces bugs