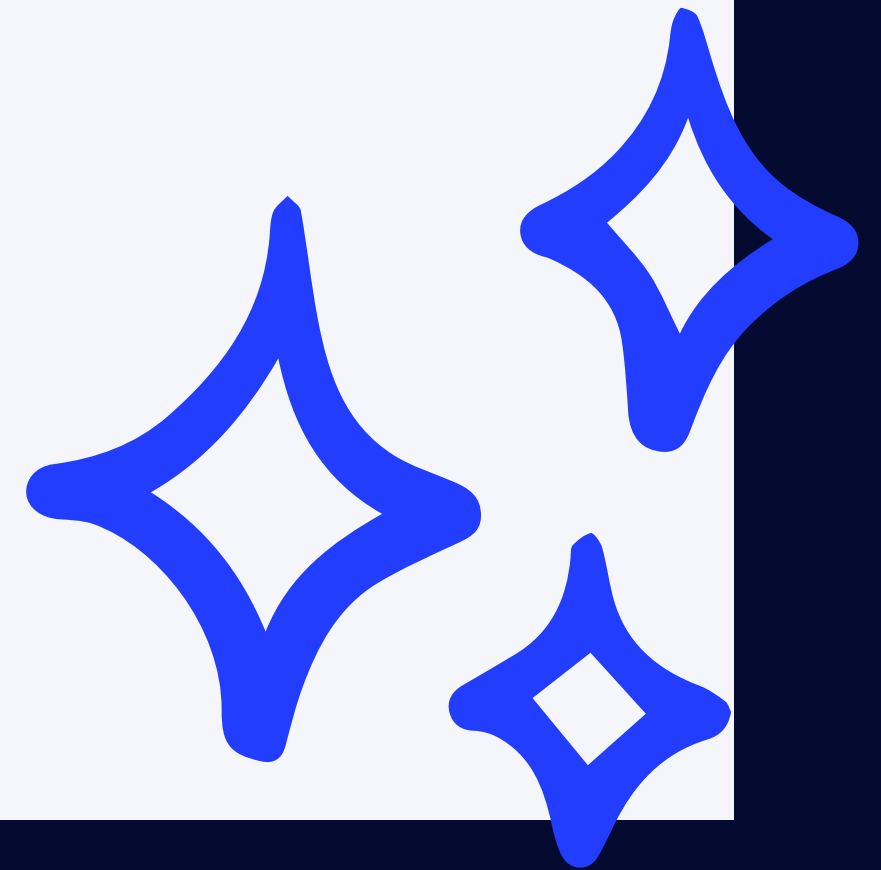


JavaScript testing



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What is testing?



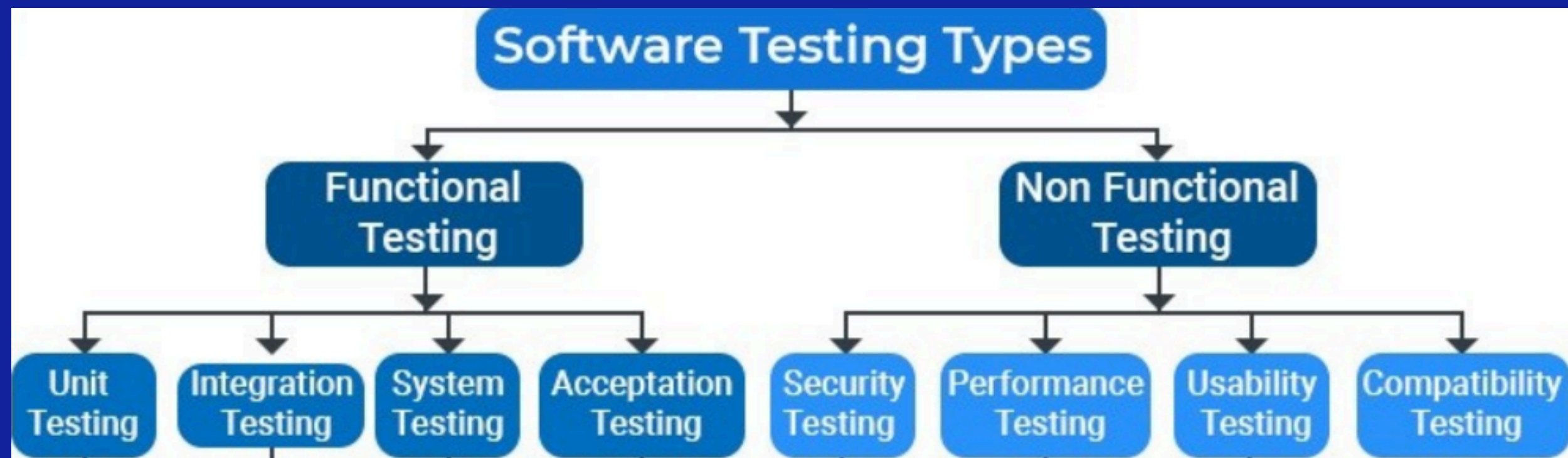
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Benefits of Testing

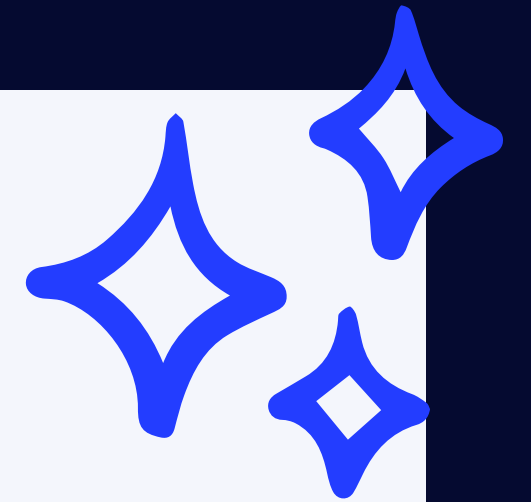
- DETECTS BUGS EARLY
- FACILITATES REFACTORING
- COST REDUCTION
- IMPROVED PRODUCT QUALITY AND RELIABILITY
- INCREASED CUSTOMER SATISFACTION



Types of Testing



Unit Testing



A form of automated testing where we write code to test our code.

eg:

```
function calcPayment(principal, interest, years){  
}
```

Testing:

```
const result=calcPayment(10000,5,12);  
expect(result).toBe(6000);
```



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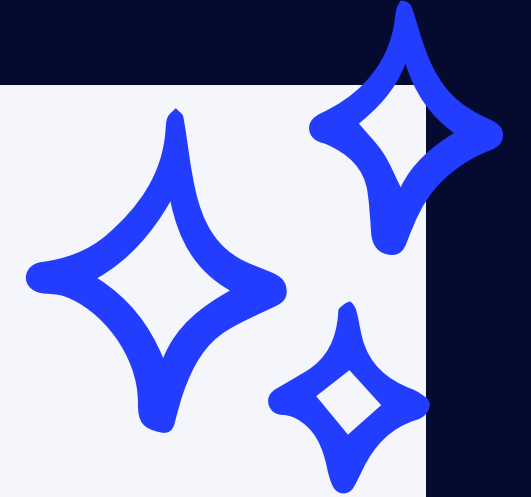
Two Approches

- Code First
- Test First - Test Driven Development(TDD)



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Testing Framework



A set of tools for writing and running tests

It includes:

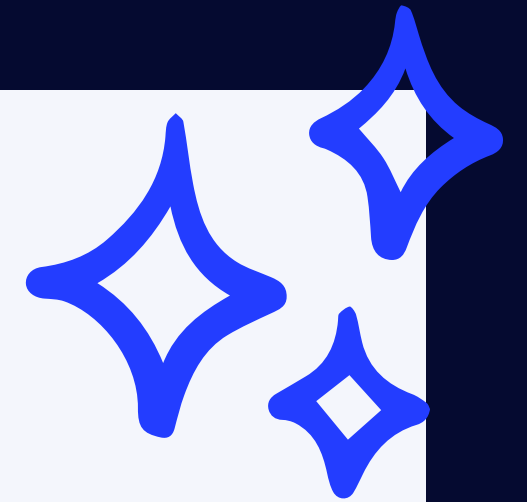
- **Test Runner** - for executing tests
- **Assertion Libraries** - to check if code behaves as expected
- **Mocking Tools** - to replace certain modules with Fakes
simulating different scenarios
- **Coverage Tools** - to measure how much of the code is tested



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Popular frameworks

Cham Sunga
Cham Sunga
Toddlers
Toddlers



Jest

Mocha

Jasmine

Vitest

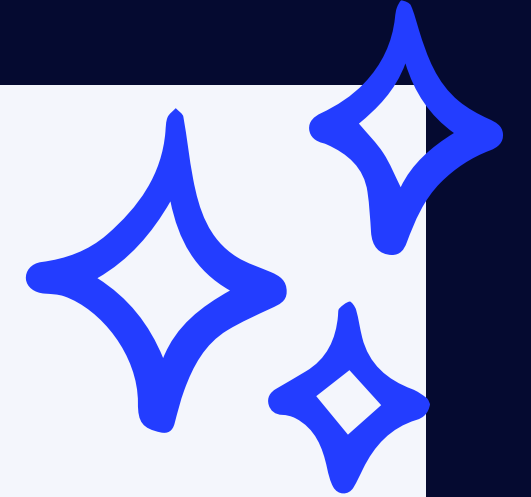
Cypress

Playwright



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Mocha



Mocha is a feature-rich JavaScript test framework running on Node.js and in the browser

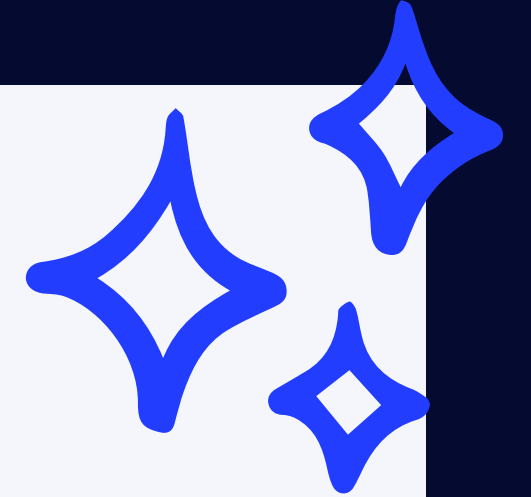
Features:

- Provides compatibility for both front-end and back-end testing
- NodeJS debugger is supported, which makes error tracing easier
- Accurate reporting
- Provides support for all browsers
- Very convenient framework for the developers to write test cases



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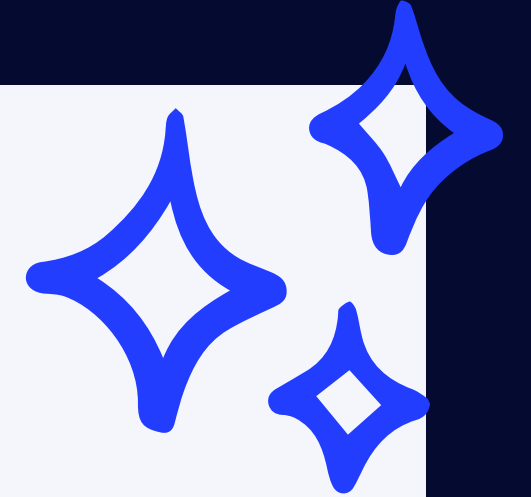
Mocha - functions



- describe() - It is a suite of Test scripts that calls a global function with two parameters: a string and a function.
- it() - It is the smallest unit test case that is written to be executed. it() calls a global function with two parameters i.e. a string and a function.



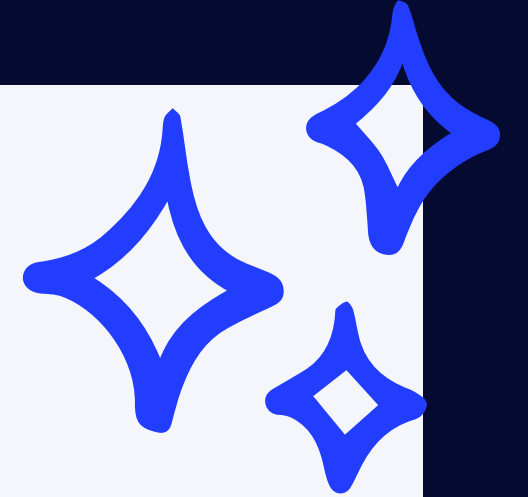
Mocha - functions



```
1  ✓ describe("Authentication Feature", () => {  
2  ✓    it("should be able to successfully login", () => {  
3      // test logic here  
4    });  
5  
6  ✓    it("should be able to create an account", () => {  
7      // test logic here  
8    });  
9  
10  ✓    it("should be able to reset password", () => {  
11      // test logic here  
12    });  
13  });  
14
```



it() - functions

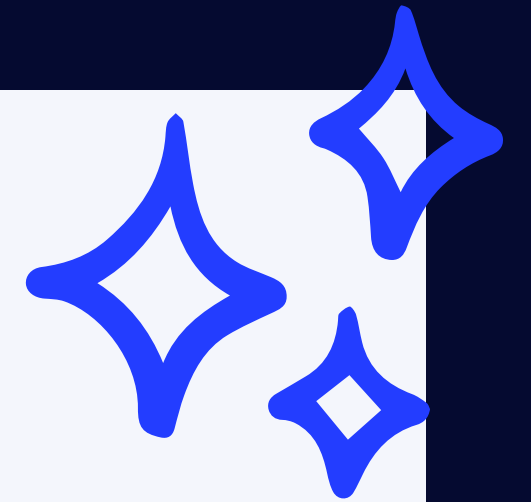


Every it() statement has one of the below functions, which take a value and expect a return in true form:

- expect()
- should()
- assert()



Mocha - hooks



Mocha provides several built-in hooks that can be used to set up preconditions and clean up after your tests.

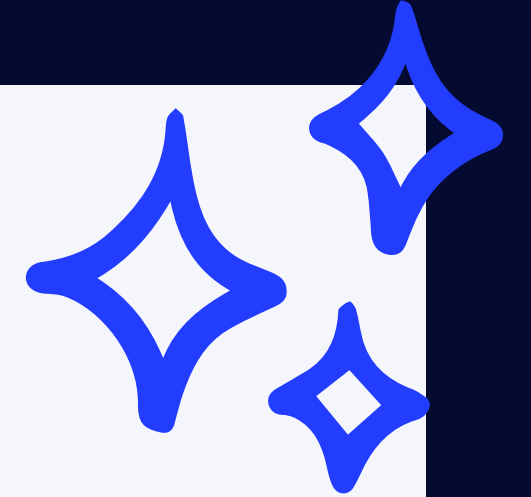
The four most commonly used hooks are:

- `before()` - to run once before the first test case
- `after()` - to run once after the last test case
- `beforeEach()` - to run before each test case
- `afterEach()` - to run after each test case



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Chai



Chai is an assertion library for node and the browser that can be paired with any javascript testing framework.



Thank you



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