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REACTJS – MODULE 11

UNIT TESTING WITH JEST

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AGENDA

- Introduction to testing
- Types of testing in react
- Introduction to Jest
- Demo
- Activity

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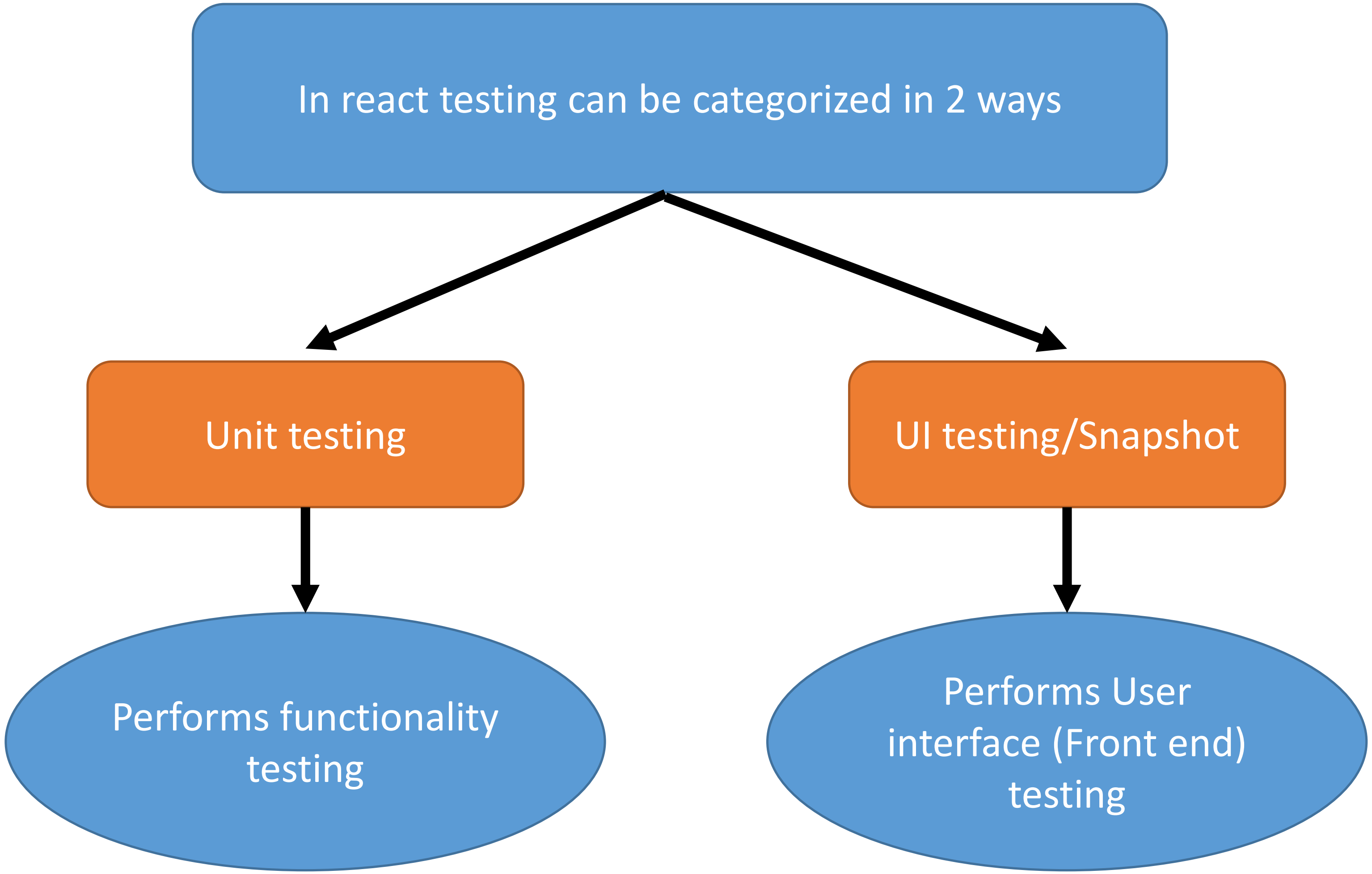
Introduction to Testing

Testing is a crucial activity in the development environment

Testing is concept of checking whether the application is built as per the requirements or not

React provides the facility to perform testing of a component

Types Of Testing In React



In react testing can be categorized in 2 ways

Unit testing

UI testing/Snapshot

Performs functionality testing

Performs User interface (Front end) testing

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Introduction To Jest

Jest is delightful javascript testing tool which will be used to perform testing of react application

Developed by Facebook

It is used by many teams

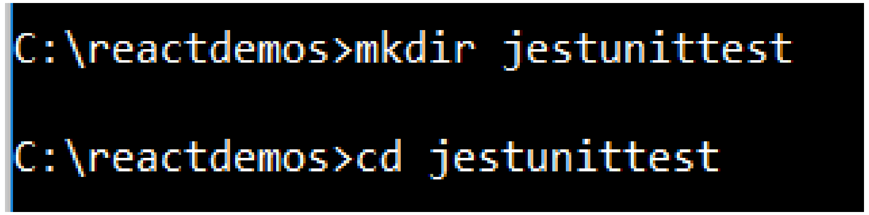
Features Of Jest

- Easy setup and fast
- Instant feedback
- Built-in code coverage
- Works with typescript
- Zero configuration for react application
- Snapshot testing

Demo – Unit Testing Using Jest

Go to command prompt and create new folder “jestunittest”

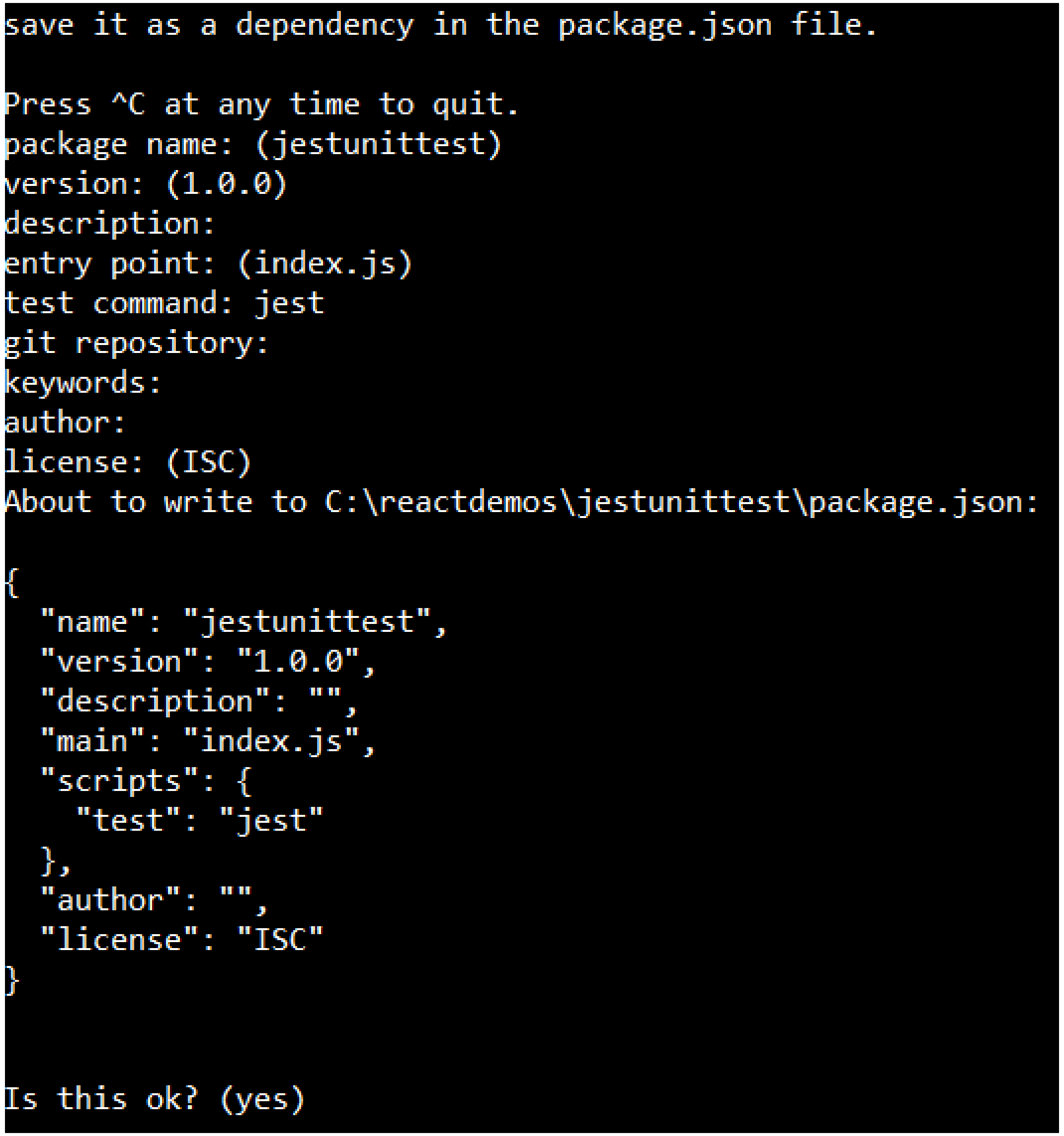
Change directory to “jestunittest”



```
C:\reactdemos>mkdir jestunittest

C:\reactdemos>cd jestunittest
```

Create package.json file by executing npm init

Demo – Unit Testing Using Jest



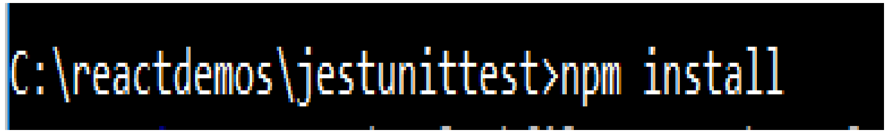
```
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (jestunittest)
version: (1.0.0)
description:
entry point: (index.js)
test command: jest
git repository:
keywords:
author:
license: (ISC)
About to write to C:\reactdemos\jestunittest\package.json:

{
  "name": "jestunittest",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "jest"
  },
  "author": "",
  "license": "ISC"
}


Is this ok? (yes)
```

Note

Keep all default information but mention jest for test option

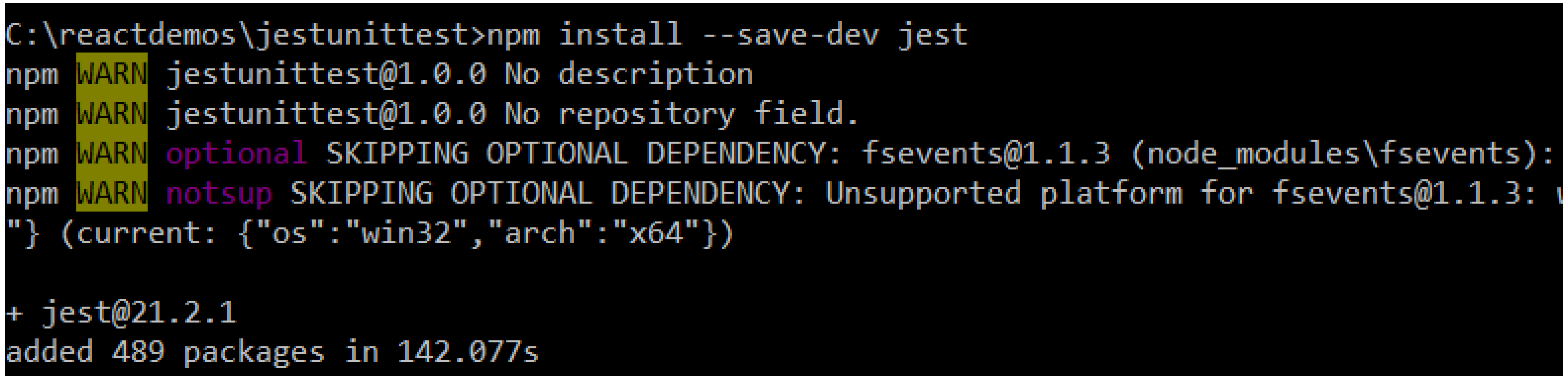
Demo – Unit Testing Using Jest

Execute npm install inside the project
“jestunittest”



```
C:\reactdemos\jestunittest>npm install
```

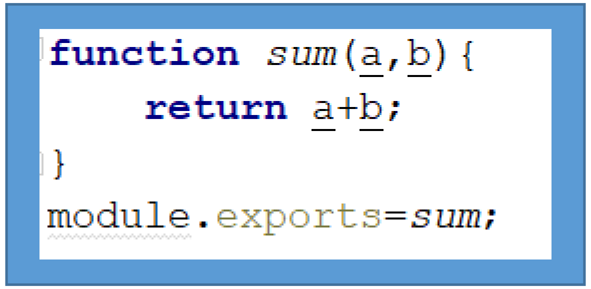
Install jest using this command
npm install - -save-dev jest



```
C:\reactdemos\jestunittest>npm install --save-dev jest
npm WARN jestunittest@1.0.0 No description
npm WARN jestunittest@1.0.0 No repository field.
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.1.3 (node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.1.3:
"} (current: {"os":"win32","arch":"x64"})

+ jest@21.2.1
added 489 packages in 142.077s
```

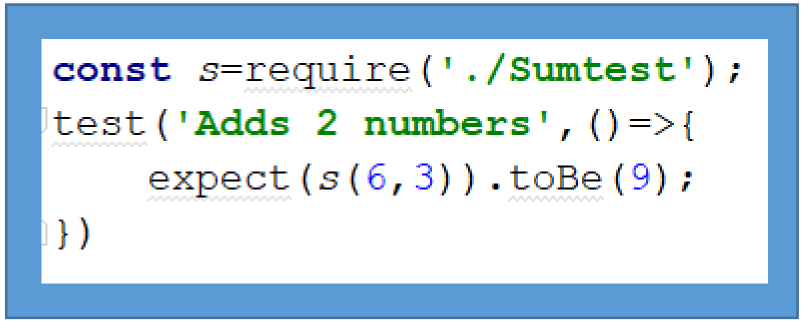
Demo – Unit Testing Using Jest

Create new file Sumtest.js inside the project and write below code



```
function sum(a,b){
    return a+b;
}
module.exports=sum;
```

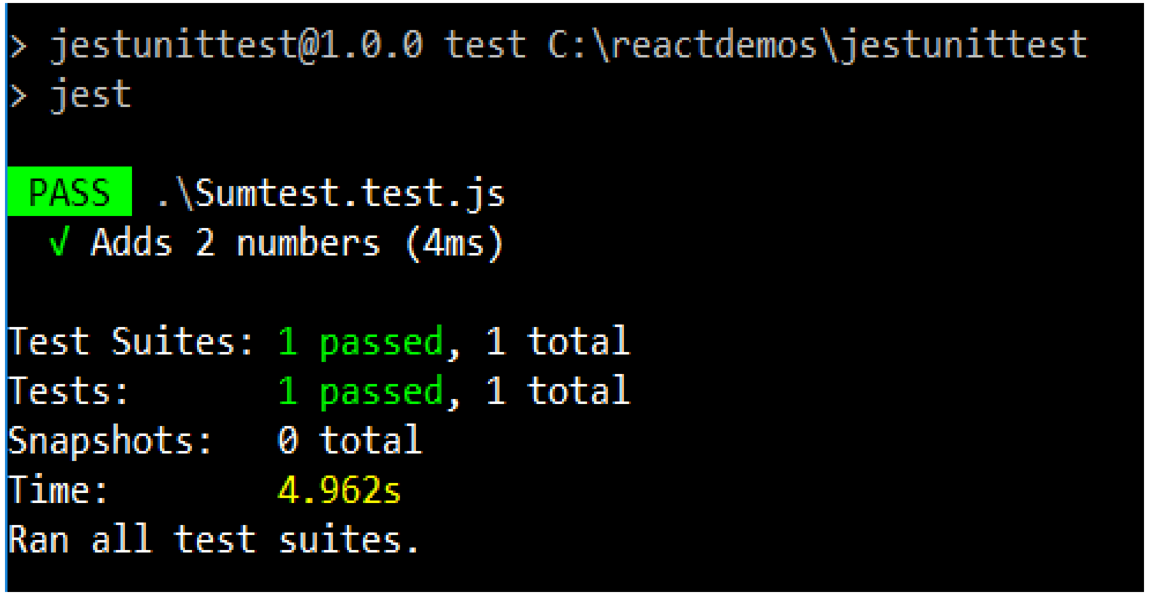
To perform unit testing create one more file and name it as Sumtest.test.js



```
const s=require('./Sumtest');
test('Adds 2 numbers',()=>{
    expect(s(6,3)).toBe(9);
})
```

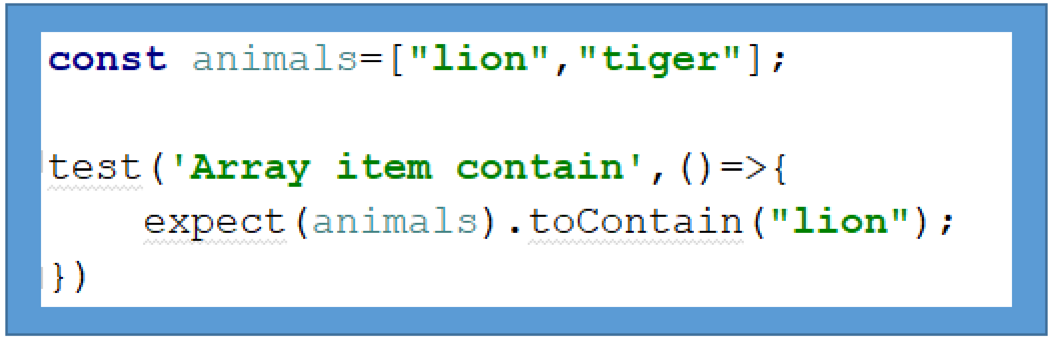
Demo – Unit Testing Using Jest

Run the test in command prompt using
npm test



```
> jestunittest@1.0.0 test C:\reactdemos\jestunittest
> jest

 PASS  .\Sumtest.test.js
  √ Adds 2 numbers (4ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:   0 total
Time:        4.962s
Ran all test suites.
```

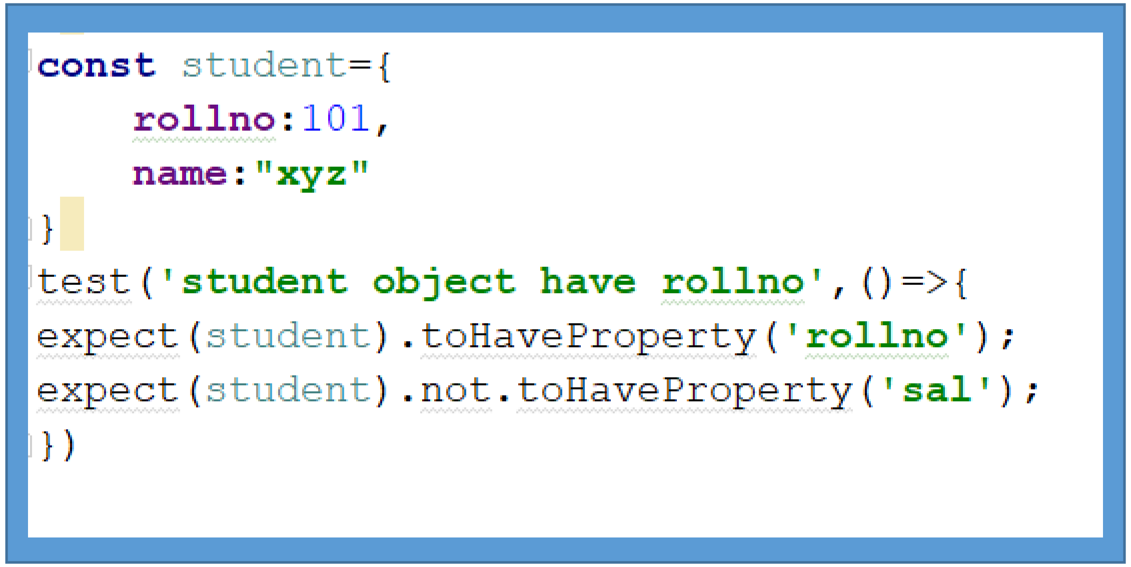
Example – Array testing



```
const animals=["lion","tiger"];

test('Array item contain',()=>{
    expect(animals).toContain("lion");
})
```

The above code is testing array for the element “lion” present or not

Example – Object testing



```
const student={
    rollno:101,
    name:"xyz"
}
test('student object have rollno',()=>{
expect(student).toHaveProperty('rollno');
expect(student).not.toHaveProperty('sal');
})
```

The above code is testing student object with respect to its property existence

Activity

1. Create employee object which has empid=1002 ,firstname="Sam" and salary=5000

2. Write unit test code which will check the empid equal to 1002

3. Write unit test code which will check the salary greater than 3000

Using Jest In React Application

React by default uses jest for testing components hence separate installation is not required, hence this is referred as zero configuration testing

Create new project “jestreactapp”

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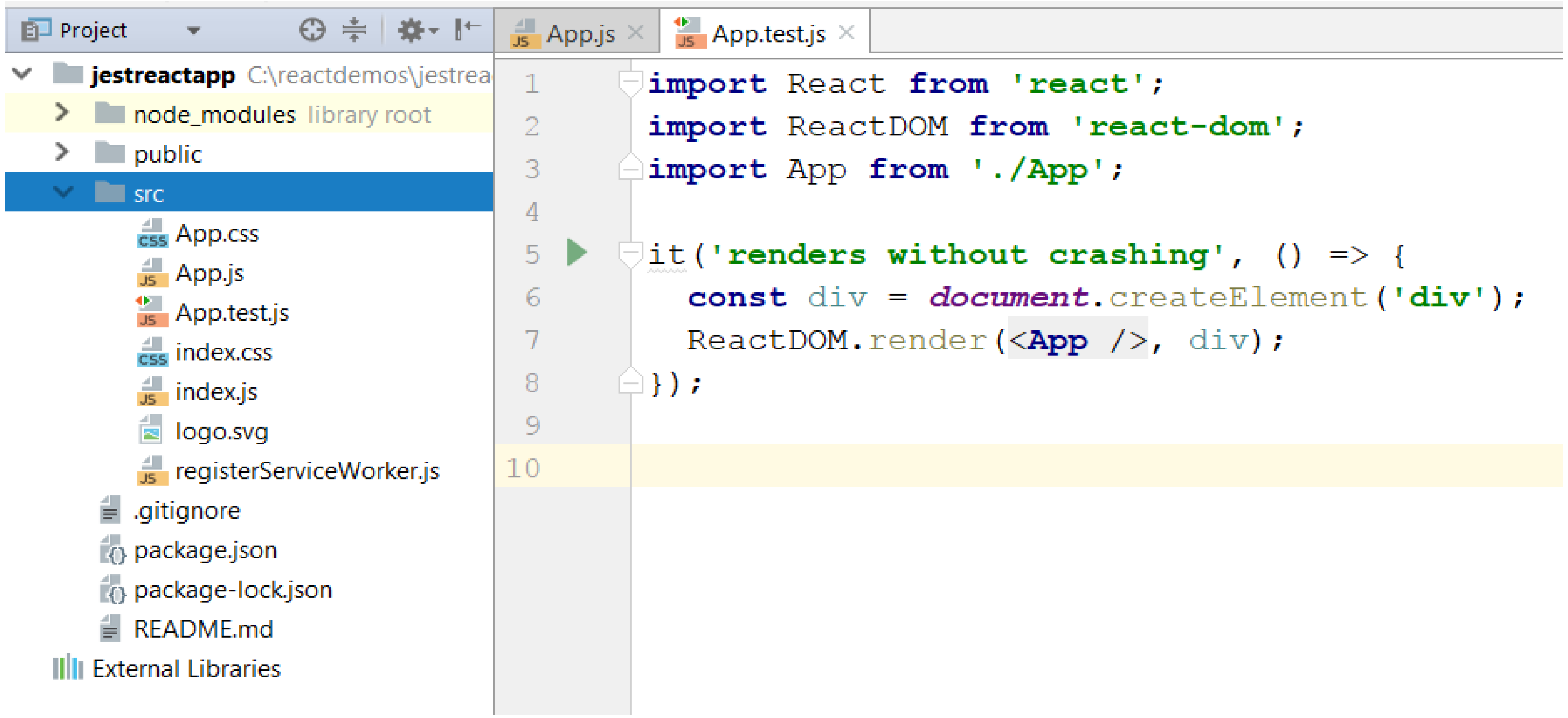
Using Jest In React Application



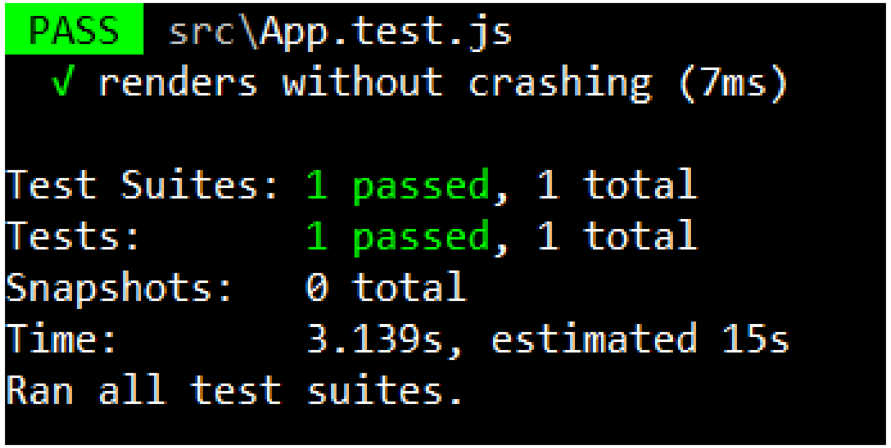
```
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

it('renders without crashing', () => {
  const div = document.createElement('div');
  ReactDOM.render(<App />, div);
});

```

Note

“App.js” is a react component. “App.test.js” is a test file for App.js which is created by default

Using Jest In React Application

Run the test by executing
npm test



```
PASS  src\App.test.js
  √ renders without crashing (7ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:   0 total
Time:        3.139s, estimated 15s
Ran all test suites.
```

Without any installation jest is testing react application

MODULE SUMMARY

- Importance of testing
- Understand how testing works
- Write different test cases to perform testing with respect to array and objects
- Zero configuration testing in react application using jest

Questions?
Shift
PgDn

THANK YOU

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