Day 1 : 04-02-2022

Phase 4 : Testing and Deployment

1. Testing : Plain javascript testing, angular testing and node js testing.
2. Grunt : JavaScript task runner
3. Docker : Docker, Docker compose, Docker Swarm and Overview of Kubernetes.
4. CI and CD tool using Jenkin
5. Overview of AWS : S3 and EC2

Debug the JavaScript Application

We can develop the application using JavaScript in MEAN stack

1. Client Side JavaScript and Server Side JavaScript.

Client Side JavaScript : HTML, CSS, Bootstrap, JavaScript, jQuery, Angular / React JS /Vue JS

We write set of code to do the task.

100

4 line code

We keep break point using console.log(“1”);

10 line code console.log(“2”);

15 line code console.log(“3 ”+res);

Testing : Testing is use to find the defects or error or bugs in the application.

If we run the program which develop in any language indirectly we are doing testing for that application.

Operation.js

function add(a,b){

var sum = a+b;

return 0;

}

Testing are divided into two types

1. Black box testing

Input Process Output

Post Man

SOAP UI

Selenium tool

1. White box testing

Input Process Output

Manual testing

Automation testing

Unit testing : unit testing is a type of software testing where individual component or code or function of application tested individually.

Unit testing is a type of white box testing.

Using unit testing we can check function functionality working or not.

jUnit

nUnit

Jasmine : Jasmine is a type of open source framework which help to do the unit testing for Client side as well as server side JavaScript code.

Jasmine is DOM less Simple JavaScript testing framework.

Plain Client Side JavaScript testing -🡪 Jasmine Framework

1. With browser plugin
2. With node js

Old version Jasmine we were depends upon karma plugin get the result.

But new Version of Jasmine provided runner features to display the result on browser or console.

Angular Framework : Angular framework internally provide all configuration details for Jasmine.

Angular jasmine framework to do testing for angular component, service, module, pipe etc.

Angular use Karma a test runner. Which help to provide the testing result with respective browser.

React JS use JEST testing framework to do the unit testing.

Backend node js or express js testing

Jasmine Testing framework to testing node js application

Mocha is a light weighted testing framework we do testing for node js application

Mocha with Chai (test library framework).

Jasmine, JEST, Mocha

Suite : JavaScript testing framework provided pre defined function ie describe() which is use to add more than one test function ie test spec. Suite is like a container which hold more than spec with the help of it() functions.

describe(“message”,callback)

Spec : Spec provided it() function which help to test the JavaScript function functionality.

it(“message”,callback)

assert : testing framework provided lot of pre defined function which help to match actual and expected output. Which come in the form of assertXXX

expect(true).toBe(true)

expect(true).not.toBe(true)

expect(a).toEqual(bar)

expect(message).toMatch(/bar/)

expect(message).toMatch('bar')

expect(a.foo).toBeDefined()

expect(a.foo).toBeUndefined()

expect(a.foo).toBeNull()

expect(a.foo).toBeTruthy()

expect(a.foo).toBeFalsy()

expect(message).toContain('hello')

expect(pi).toBeGreaterThan(3)

expect(pi).toBeLessThan(4)

expect(pi).toBeCloseTo(3.1415, 0.1)

expect(func).toThrow()

describe(“Operation Testing ”,()=> { : suite

it(“addition testing ”,()=> { :spec

})

it(“subtraction testing ”,()=> {

})

})

Day 2 : 05-02-2022

Angular Testing :

Angular internally use jasmine testing framework to test angular component and services.

It provided karma as test runner to get the output on browser as well as console.

Angular with jasmine and karma

React JS with JEST testing framework

Angular use jasmine testing framework which provide describe(), it() and more than expect() function.

Angular use karma test runner to get testing result.

Angular use utilities class to test angular component and service.

Those utilities classes part of @angular/core/testing

TestBed is a class part of @angular/core/testing which provided set of function to do the testing for angular component and service.

ng test

Node JS Testing

Node JS testing we can do using jasmine or mocha

Create the folder back-end testing – using node js

Using npm init (create package.json file)

npm install jasmine

npm install jasmine-node

or

npm install jasmine -g

npm install jasmine -D

npm install jasmine-node -D

after installation now we need to create jasmine init

this command is use to create spec directories inside this director we need to keep

all our testing related files.

Now create src folder and inside this folder we need to create more than one node js file with

Node js code.

Operation.js

function add(a,b){

    let sum = a+b;

    return sum;

}

module.exports = {add};

OperationSpec.js

let obj = require("../src/operation");

describe("Operation testing",()=> {

    it("Addition testing ",()=> {

        let result = obj.add(100,200);

        expect(300).toEqual(result);

    })

})

Express JS Testing using Jasmine. Jasmine provided describe, it and expect to test the JavaScript.

But Jasmine doesn’t provide any function call all http method like get, post, put and delete.

Node js provided third party module ie supertest which help call http methods.

Create express-js-testing folder

Npm init (package.json file)

npm install jasmine –D

npm install jasmine-node –D

npm install supertest –D

npm install express

then using jasmine init (create spec folder)

then create src folder.

inside this folder create app.js file with rest api.

Please install docker for window or mac or linux

docker --version

docker images