Phase 3

Day 1

20-11-2021

Node JS

Core

Console

Process

Fs module

http module

User-defined Module

External Module

Express JS Module

Create Web Application

Creating REST API

Socket IO networking programming

Mongo DB Database

All types of queries may basic and Adv query

Connecting mongo db database using

Mongo DB Module

Mongoose module

Developing Node JS Application using MVC Style

MEAN Stack

From Angular to Express JS Node JS Application and Connecting to Mongo DB Database.

Node JS

HTML, CSS and JavaScript

Read , Write and update DOM (Document Object Model).

Any html tag code

JavaScript library or Framework

jQuery : it is a library

Angular Framework :

React JS with Redux and Flux

Vue JS

Coffee JS

Backbone JS

Ext JS

Node JS : Node JS is not a framework and library. Node JS is run time environment for JavaScript library and Framework.

In Java JRE

In JavaScript Node JS

Before Node JS

Front end technologies backend technologies

HTML,CSS,JavaScript using ES5 style Java : JEE

Bootstrap and jQuery Spring boot

Asp.net

Php

Python

Node JS

Before Node JS JavaScript is known as Client Side scripting language But After node JS JavaScript also known as Client side as well as Server Side Scripting language.

Using JavaScript ie Node JS we can do file handling, we can create web application, we can create Rest web service, we can connect any database it mongo db or RDBMS, we can do networking programming .

Node JS provided lot of pre-defined modules to run those module we required run time environment ie node JS.

In node JS we can’t use BOM and DOM.

Browser Object Model and Document Object Model.

Client side JavaScript follow object hierarchy concept

Object

Property

Behaviour

Object

Property

Behaviour

Object

Property

Behaviour

Object

document.write(“Welcome”);

window.document.write(“Welcome”)

Client Side Scripting language : In this scripting language we can use BOM and DOM but we can’t do file handling program, can’t connect database or can’t create REST API.

Server Side Scripting language : We can’t use DOM and BOM.

REPL Terminal : Read Eval Print Loop

To display the output using Node JS

Node JS provide pre-defined global object ie

console.

Synchronous communication

Statement level

L1

L2

L3

Function call

dis1()

dis2()

dis3();

1 req

2 req

3 req

Client Server

Asynchronous communication

Statement level

L1

L2

L3

Function call

dis1()

dis2()

dis3();

1 req

2 req

3 req

Client Server

Ajax Asynchronous JavaScript and XML

XMLHttpRequest or ActiveXObject

Callback : passing the function name or function body or function itself to another function as a parameter is known as callback function. Callback function can be synchronous or asynchronous.

Node JS goal is to provide an easy way to build scalable network program.

JavaScript support asynchronous communication and callback back concept.

If we send the data through network environment using any language like Java, python, C or other programming language. Data can be lock or block.

We can send huge data in network environment without blocking. Node JS provide Non block IO Operation with the help of callback and asynchronous communication.

Node JS is open source, cross platform run time environment for server side and networking application.

It provide an event driven architecture and non blocking IO features.

Node JS internally use JavaScript V8 Engine to execute the Node JS Application.

Day 2

21-11-2021

Node JS Modules

Modules in Node JS are simple or complex functionality organized in a single or multiple JavaScript file which can be reuse throughout the application. Module is like a package or namespace.

Type of modules

Core modules ( by default available in node js mean no need to install )

Local module or user-defined module

Third party module ( we have install using npm command).

Syntax to use the module

ES5 style

var obj = require(“moduleName”) : can be core module or local module or third party module.

let obj = require(“module”);

once you load the module then using that reference we have to all function part of that module.

obj.functionName();

Global objects

console : it is a type of global object you can use directly without loading. This object provide few methods to display the object in console.

process : it is a type of global object which help to find the process details.

fs module : Node JS Provide pre-defined core module ie fs module which help to file handling program may be synchronously or asynchronously using JavaScript.

We work with objects.

JSON : Java Script Object Notation

Store and Retrieve JSON Data In File System.

In JavaScript we can create the user-defined object using

1. Function style
2. Class style
3. Literal style

To convert object to string format.

JSON.stringify

Multi page application

DOM Hierarchy DOM Hierarchy

One.html welcome.html

Hyper link

Submit button

Command button

Using JavaScript

SPA (Single Page Application)

<body>

<app-root></app-root>

</body>

Pipe(more than one operator to filter the response)

Day 3

27-11-2021

Taking the value through keyboards in Node JS.

readline : it is a type of node js core module which help to take the value through keyboards asynchronously.

readline-sync This module is use to take the value through keyboards synchronously

This module is not a core module. It is a type of external module we have to install it.

npm install readline-sync -g (globally )

or

npm intstall readline-sync (locally)

http module : http is a type of core module which help to create the dynamic web application using JavaScript (Node JS) application.

http module provide http protocol features. It provide the Node JS server.

Java, Asp.net, Php and Python etc.

Servlet /JSP

Spring boot

Once we created web application using respective technologies we have deploy (run) those application in sever tomcat, web logic, jboss, was and iis etc.

Non Node JS server is thread base server.

Node JS server is not a thread base serve it internally provide great features is event loop.

Tomcat is type of open source web server which help to deploy java application.

Tomcat server is thread base server.

Ticket reservation application.

Thread is a small execution of a code within a process.

Process

Thread

Tomcat

WebLogic

JBoss

100 or 10000 or 100000 that server can take 100 request concurrently.

Node JS tells if server is thread based request can be lock or block.

JavaScript is single thread programming language.

http module

url module : it is a type of core module which help to find the URL Details.

<http://www.google.com:80?id=100&name=Raj>

Query param concept :

URL?key1=value&key2=value2&key3=value3

First information append using and second, third and nth information append using &.

Using http module base upon the path we want to display different message.

Day 4

28-11-2021

Open source Node JS Web Framework came in picture.

Express JS : Express JS is a type of open source web framework which help to develop the web application very easily. Express JS internally use http module to create the web application.

Express JS support all http protocol method

Get, Post, Put and Delete

With the Help of Express JS We can create REST Full web service.

Express MVC style.

We develop small application using Express JS

While developing any node base application we have to create package.json file

Package.json file is known as configuration which all projects details.

Syntax to create this package.

npm init

node jsp provided global property ie \_\_dirname. This property is use to display the current directory path.

If method is Get in Express JS we can call those method using url or hyperlink or form tag with method as get (by default get consider).

If method get we can send the data through url using query param and path param.

Means we can send the data through URL. Get method is not a secure.

So if you want secure data we have to use method as post.

In Express JS if method is post we can call that method through form with post method.

We can’t call post method using hyperlink or URL.

Performance wise get is faster than post method.

In Get we can send maximum 255 character data through URL.

In Express js if data send through Get method we can receive those value using

req.query.fieldname

In Express JS if data send through Post method we can receive throuse value using

req.body