**Day 1 : 09-01-2023**

System software : OS : window, unix, linux etc.

Application or software

To develop application software we need to learn

Programming language

Java, C#, python, etc.

Standalone application or desktop application

The application which running on one machine.

To run this application we required necessary software.

Java or C#

Web Application

<https://www.google.com> 🡪 Uniform resource locator

http: hypertext transfer protocol :

set of rules which help to communicate more than machine.

req(http/https)-----------🡪

Client Server

🡨-------Res(http/https) html/html5

Css/css3

JavaScript

JavaScript provide programming features on web page without server.

Browser provided plugin or parser to check the JavaScript code which we written inside script tag with help of html page.

JavaScript was object based interpreter scripting language which help to create dynamic web page as well as to do validation on client side.

Till ES5

But from ES6 onward JS also known as object oriented interpreter scripting language.

<form>

<label>Emailid</label>

<input type=”email” name=”email” required/>

</form>

Html 4

<!DOCTYPE html public url=<https://ww..asfsaf.sf.sd.dtd>/>

Dtd file hold the rules of html page.

Root tag name must be html which contains two tags

Head or body tag,

In html5 they removed the rules

<!doctype html>

object : object is an any real word entity

properties or state -🡪 have 🡪 variable or fields

Person

behavior 🡪do/does 🡪 function / methods

Bank

Animal

Car

Customer

To describe the object in JavaScript we can do in different

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

ES5 Features

ES6 features

Till ES5 JavaScript we are creating user defined object in function style or literal class.

From ES6 onward we can create user defined object using class style.

**javascript function**

**function is use to do the re-usability.**

**function functionName() {**

**body of the function**

**}**

**axios**

**callback**

**closure**

**hosting**

Before Node JS JavaScript known as Client side scripting language.

This scripting language running on browser.

Using JavaScript we were not able to develop web application. Because with help of client side JavaScript we can’t store data in file, we can’t connect to database may be mysql or mongo db etc.

Server side technologies

Html, css and JavaScript

Java (JEE)

Servlet/jsp/spring framework

Asp.net

Php

Python

CGI

Node JS

After Node JS JavaScript is known as Client side as well as server side scripting language.

Node JS provided lot of modules that can be pre defined or user defined which help to do all task on service whichever we are doing using Java or asp.net or php etc.

Like store data in file, security, creating web service, connecting database etc.

**Day 2 : 10-01-2023**

Git : Git is open source tool which help to record the execution of the application.

Create one folder

Then create one text file and write some message.

Open the git bash inside that folder.

git init : to make local folder as a repository

git add filename : we can add only particular file to staging area.

or

git add . : adding all files and folder from current folder to staging area.

git commit –m “message” this command is use to push the file from staging area to local repository.

Day 3 : 11-01-2023

Node JS : Node JS is a run time environment for JavaScript program or library or framework.

Before Node JS JavaScript is known as Client side scripting language which help to run the JavaScript programing on browser with help of html page.

After Node JS JavaScript also known as client side as well as server side scripting language. With help of Node js program we can create server side programming language using JavaScript.

Node js provided lot of pre defined modules which help to do file handling program, creating server side program, creating web service (rest full web service), connecting database like mysql or mongo db using JavaScript.

Before Node JS to run the simple JavaScript program we were depends on html page. But after node js we can run javaScript using command prompt.

First open command prompt

Verify node js installation done or not using command as

node --version

node js provided REPL Terminal (Read Eval Print and Loop)

which help to do javascript using command prompt.

How to open repl terminal

Open the command and write node and hit enter key.

DOM and BOM

Document object model

Browser object model

Client side JavaScript provide us bom and dom.

But node js doesn’t provide bom and dom.

We can’t use document.write and alert in node js program but we can use console.log(“welcome to node js”);

alert(“Welcome”)

Or

window.alert(“Welcome”)

Node js modules

Node js provided lot of module which contains lot of pre defined function or classes which help to do specific task depending upon type of modules.

In node js modules are divided into 3 types

Core module : this modules by default available with node js software.

Third party or external module : base upon our requirement we need download those modules.

User defined modules : this is use to create our own modules.

Fs : File system : it is type of core modules which help to do file handling program synchronously as well Asynchronously using JavaScript.

We can read, write and update or append the data in file.

Loading node js module

This syntax is use to load the module.

var variableName = require(“moduleName”);

node js provided pre defined function ie require which help to load the module.

While doing file handling program we need to load fs module.

Http module : Http is a pre defined module which help to create server side programming language using node js.

Client

<http://www.google.com> -🡪 Request

Server

Server will give response for us. Server will give the response in the form of html page.

Java, Python , asp.net . Those technologies receive the request from client and base upon request it will give response back to client.

To make server side technologies we were depending upon other programming language like java, python, asp.net, php and those language use big server. Web server or Application

Tomcat, web logic, jboss, IIS server nginx server etc.

Node js provided pre defined http module which help to create server side programming language as well as we can create server using http module.

<http://www.google.com>

<http://localhost:3000>

<http://127.0.0.1:3000>

Day 5 : 13-01-2023

Node JS server provide event driven architecture framework.

url : uniform resource locator : this is a core module provided by node js which help to extract url details from client request.

<http://www.google.com:80/home?name=Raj&age=21>

if html form contains get method then if we send the data it will send the data through url using query param concept. So we can see the data in url in the form of query param. Data not a secure. If method is get data send to url with header part. Body is empty.

Through get we can send maximum 255 character data.

If we want data must be secure then we need to send the data using post method. In post method data will send through request body part.

Through post we can send huge data.

Performance wise get is faster than post.

Different between get and post method in html.

<http://www.google.com:80/home?name=Raj&age=21>

synchronous communication

asynchronous communication

1st req

2nd req

3rd req

Client Server

If application follow synchronous communication.

2nd request is depends upon first request response.

3rd request is depends upon second request response.

If application follow asynchronous communication

Then every request execute independently.

Some time 2nd request execute before 1st or 3rd request execute before 1 and 2nd request.

Day 6 : 14/01/2023

Node JS provided lot of pre defined external module in the form of web module which provided lot of great features to develop the web application in simple way

Express : Express js a third party module. Which wrap http module and provided extra functionality to develop web application.

MVC : Model View and Controller

**REST API (Representational state transfer)/ REST API frameworks**

**Command to install third party or external node module**

**npm (node package manager).**

**When we install node js node js provided another command or tool ie npm which help to download external or third party module using node js.**

**To install third party module using npm command we need to run the command as**

**Create the folder as express js program**

**And open this folder in vs code.**

**npm install modulename**

**npm install express**