# Advance Web Technology

## **Basics :**

## MongoDB, API, Json, Frontend

## SPI - single page application(youtube - angular, Facebook , Instagram web - reactjs)

## **Node** :

Node - Server side java script

LTS - Long term support

API -middle where communication between

Testing

unitesting

integration testing

=> call back function

npm init -y //new project

npm install i

spread operator = to get elements of array

<https://expressjs.com/en/guide/routing.html>

Route Methods : get & POST PUT and Delete and all

**Route Paths** : ‘/’, ‘/about’, ‘/ab?cd’ (allows acd and abcd), ‘ab+cd’ (abcd,abbbcd, abbbbcd),

Sync and asynnc

.then, .kh, promise,

**MiddleWare** is a function which excecutes on every req,res and can forward or end the request.

//Create endpoint to display book details based on given id

//Create endpoint to search book by author,pub\_year,pub\_name,title,

//Create endpoint which will server request of food and foods (/food?)

//Create endpoint which will start with b and ends with k (‘/b\*k’)

//Create endpoint which starts with g and atleast 2 O and ends with gl.(‘/goo+gle)

//Create endpoint which supports which supports all endpoint ending with ful.

//Create endpoint which shorten the url based on hostname and protocol

//Node API which contains CRUD of : 1. Shop details, 2. Categories, 3.Products Relationsships :1 shop – many categories. Same category could be available at multiple shop. Same category multiple products, 1 product only belong to 1 category

**REACT**

npm create vite

npm (no packat management)- install the dependency

npx - want to run only nor install

vite.svg = for graphics

JSX - Java script ambadded xml

rafce shortcut for source code

Task 1 : Craete a component which will display a button on screen with click me text

Create a class person name,dob,address,

Hooks :

useState = to update the display component (state management)

useEffect =

BrowserRouter : Manage Paths in the browser

//Create React app to manage cart.

//Create cart page on home page display 5 different product with image,product tile and price, display such 10 products on home page on click of add to cart button of product add that product into cart once user click on cart page display cart products.

**MONGO-DB**

Tables :

Columns = object attributes

Rows = each record

Primary key, Unique Key, Foreign Key

<https://www.altexsoft.com/blog/nosql-databases/>

Types of NoSql : NoSQL(Semi structured or non structured data)

Key value - **key-value databases** store data as pairs of keys and values used in performance monitoring, basic information, session management, video game boards and iot applications.Radis, Mamcached, RocksDB, Hazelcast,Valkey.

Document Databases : **Document databases** store, manage, and retrieve data in the form of documents (in JSON, BSON, or XML formats).Each document is identified by a unique key. MongoDB, Apache, CouchDB, Firebase, Amazon Document DB. Content Management system, User Profiles, Catalog Items.

Graph Databases : **Graph databases** are designed to store, manage, and query data in the form of graphs that consist of nodes and edges.Social Networks, Recommenders system, Fraud Detection, Natural language processing.Neo4j, Amazon Neptune, JanusGraph,

**Wide Column or Column-Oriented DB** :- store data column by column rather than rows, organizing related information in column families.IOT Systems, Big data analysis and BI tools.Apache Cassandra, Apache Hbase, Apache Druid, ScyllaDB.

Multimodel DB :- **Multi-model databases** support different ways of storing data (document, key-value, graph, and wide-column) within the same system. Amazon DynamoDB, CouchBase, ArangoDB, Azure Cosmos DB.

**Model** : It contains all the attributes which want to store in form of document.

Sequalize :

**Queries :**

Count the documents : **db.collection.countDocuments({})**

Find the documents : db.collection.find( { } )

Logical and :   $and: [

Logical or : $or

$in : find exactly same

$lt : Less then

$gt : Grater then

$eq : Equals to

$ne : Not equals to

$nin : not in

$gte : Grater then or equals to

$lte : Less then or equals to

$nor : not or

$exist : When we exactly need or not need;

db.collection.update : To update the query

 $rename : To rename the query

$inc : increatment or decreament

$min : give the minimum from passed value and original value

$max : give the maximum from passed value and original value

$mul : multiply with the given value

$unset :

**Angular**

**Why Angular :** Angular Adds interactivity to the web pages

Angular and Js bring structrure and consistency to web applications development and provides scalability and maintainability.

Angular Specifically developed for single page applications.

**What is Angular**

Angular is a open source JS Framework.Complitely written in the typescript and primarily aimed to develop single page web applications. It uses HTM:’s synatax to express your application’s components clearly. Maintained by Google and designed for web desktop and mobile platforms.

**Features :** DOM, TypeScript, Databinding, Testing

Angular uses the regular DOM. This will update the whole tree of html tags until it reaches to the data to be updated

Typescript is a superset of the javascript and offeres excellent consistency. It is install as NPM package npm install -g typescript

Databinding is a process which allows users to manipulate Web page elements using Web browser

Karma is a task runner

**Architecture**

Angular is a ful-fledged MVC framework

**Advantages :** Custom component, Databinding, Dependency injection, Testing, Comprehensive, Browser Compatibility

**Angular 1 :** built on JS and completely based on controllers

**Angular 2:** Incorpoeate the component based approach

**Angular 4 :** Included router updation. Angular CLI 1.0 is introduced

**Angular 5,6:** Angular CLI was optimized and the commands ng-update and ng-add were added

**Angular 7:** Prompts were included which provides tips in CLI about the functions.

**Angular 8:** lvy renders and Bazel were introduced.

**Angular 9:** Come with the better framework and Angular material. Included full switch to the lvy rendered as a default compiler

**LIMITATIONS :** Steep learning curve, Limited SEO options, Verbos and complex, Migration

**Angular Components :**

**Angular Forms :**

**Templet-Driven :** Directives, Module Classes, JSON values, Validation

**Reactive Forms :** Components manage the data-flow, Code driven, No two-way data binding, Synchronous creation