**Backend Development syllabus**

**Backend Development :**

Backend Development is the term for the behind-the-scenes activities that happens

when you do anything On a website or web application .It is mostly referred to

the server-side of an application and everything That communicates

between the database and the frontend/browser. You can say it is server side of Development

that focuses primarily on how the site works .

Set up for development :-

Integrated Development Environment is a software that provide facility to write ,test and

debug your Code.

Code editor :

VSCode or Visual Studio Code is a source code editor made by Microsoft for windows ,mac,

linux users .VSCode we are going to use for our development.

\*Download and install VSCOde.

\*Setting VSCode environment

**Language:-**

1.Javascript

Javascript is a programming language commonly used in web development.

Javascript is used in both frontend and backend development.

Topics:-

1.Overview

2.Basic Syntax

3.Variables

4.Operators

5.String

6.Conditional Statements

If statement

If-else statement

Nested if-else

7.Switch Case

8.Loop

While loop

For loop

9.Functions

10.Objects

11.Arrays

2.Python

Python is a general-purpose programming language .Python used for

web development , AI ,Machine learning , Operating systems ,mobile

app development,and video games.

Topics :-

1.Overview

2.Environment setup (installing python and setup environment)

3.Basic Syntax

4.Variable Type

5.Basic Operator

6.Numbers

7.String

8.Decision Making

If statement

If-else statement

Nested if-else

If-else-if

9.Loops

While loop

For loop

10.Lists

11.Tuples

12.Dictionary

13.Date&Time

14.Functions

15.Modules

16.Files I/O

17.Classes/Objects

**Database :-**

MongoDB is NoSQL database .Mongodb is document like database

stores data in JSON like documents . Documents are similar to JSON

objects.We will use mongodb compass to access data .

\*Connection with node.js

\*Connection with nest.js

POSTMAN :-

Postman is an API client that makes it easy for developers to create ,share ,test

and document API’s.This is done by allowing users to create and

save simple and complex HTTP/s requests as well as read their responses.

API :-

Application Programming Interface .Set of functions used to

create an application to access data .We will use here, REST JSON API for

our application.

**Web Frameworks :-**

1.Node.js

Node.js is open-source javascript we framework .It's used for

traditional web-framework and the backend API service was designed .

Topics :-

1.Basic knowledge of javascript

2.installing node.js

3.NPM(node package manager)

Install packages using npm

4.Setting up environment

5.creating http server

6.connecting to mongodb database

7.Using Express.js

8.create API (using Model View Controller )

9.Asynchronous Javascript : Async/Await and Promises

10.Error Handling

11.Files Upload

12.modules(module.export and require)

13.jwt (json web token)

Generate jwt

Verify jwt

14.Authentication

Signup

Login

Update User

15.Protecting Routes (using jwt token)

16.Setting up POSTMAN (to test API)

17.Authorization (roles and permissions)

18.Templates

Ejs

Hndlebars

Pug

19.Sending Email (using sendgrid)

20.Reset Password (using template)

21.Payment (using Stripe)

Express.js:-

Express.js or Express ,is a backend web application framework for Node.js.

It is designed for building web applications and API’s .

Topics :-

1. Routing

2.Http Methods

3.Middleware

4. Database

5.Cookies

6.Session

7.Authentication

8.Restful Api’s

9.Error handling

TypeScript :-

**TypeScript** is a superset of the JavaScript language that has a single

open-source compiler and is developed mainly by a single vendor: Microsoft.

The goal of **TypeScript** is to help catch mistakes early through a type system and

to make JavaScript development more efficient.

\*Install typescript using Node Package Manager.

Topics :-

1.Overview

2.Environment setup

3.Basics syntax

4.Types

5.Variables

6.Operators

7.Decision making

8.Loops

9.Functions

10.Numbers

11.String

12.Arrays

13.Tuples

14.Functions

15.Classes

16.Modules

# 2.Nest.js

Nest .js is a framework for building efficient server-side applications .

It is completely built with and supports TypeScript .

Topics :-

1.Modules

2.Controllers

3.Injectable Service

4.Services/Providers

5.Request body

6.Guards

7.Pipes

8.Validation

9.HTTP Methods

10.File Upload

11.Module-View-Controller

12.Decorators

13.Nest.js Middleware

14.Encryption and Hashing

15.User Authentication with Nestjs

Signup

Login

Update user

Delete user

16.Role based Authentication

17.Sending email (sendgrid)

18.Reset Password

19.Payment(stripe)

3.Django :-

Django is a Python based Web Development framework .

Topics :-

1.Basic knowledge of python

2.Installing Python

3.Installing Django

4.setting up environment

5.MVC pattern

6.Database Setup

7.API’s

8.Authentication,Authorization(roles and permissions)

9.Protecting Routes using jwt

10.Sending emails

11.Form Processing

12.File Uploading

13.Admin inheritance

14.Creating Views

15.Creating Models

16.Error Handling