Course Content

- HTML 5

- CSS

- Bootstrap

- JavaScript, TypeScript

- SPA Framework (Any One Stack)

  - Angular, Ionic Framework (Mobile App)

  - ReactJS, React Native (Mobile App)

- NodeJS / Python / Java

- MySQL

- MongoDB

- Cloud – AWS EC2, AWS Lambda

- DevOps – Docker, Jenkins

- Tools – Git, Postman, Jira Software, Confluence, Bitbucket/Github, VS Code, Android Studio, Android Emulator

- AI Integration – AI Api integration

- AI Tools – ChatGPT, Bard(Gemini), Code Debugger, copilots

Full Stack Developer with AI

By Vilas Shetkar

01 - HTML 5 - Basics

- **HTML Basics**
  - Editor – Notepad++
  - Doctype, title, meta, body
  - Tag & Elements
  - Attributes
    - Global Attributes
    - Element Specific Attributes
  - comments
- **Essential Elements**
  - Heading
  - paragraph
  - Image
  - Table
  - Lists – UL/OL

- Quotation
- a
- **Formatting Elements**
  - Strong/b
  - Italic/em
  - Mark
  - Small
  - Del – ins
  - Sub – sup

- **Block & Inline Elements**
  - Div , section, header, footer
  - Span, a, q, strong

02 - HTML 5 - Features

- **Layout Elements**
  - Div
  - Main
  - Header
  - Nav
  - Aside
  - Article
  - Section
  - Footer
- **Iframe**
  - External Pages and target
  - YouTube Video
- **Form and Form Elements**

- **Form & Attributes**
- **Elements**
  - Input & types
  - label
  - Textarea
  - Select
  - Button
  - Fieldset – legend

03 - HTML 5 – Multimedia and API

Multimedia
- Graphics
  - SVG
  - Canvas
- Media
  - Video
  - Audio
  - Embed

HTML 5 API
- localStorage
- Geolocation

Tricks & Techniques
- Document Type
- Lowercase element name
- Lowercase attribute name and double quote for value
- Close all elements
- Alt attribute with images
- Indentation
- Avoid long code
- Avoid commented code
- Set metadata
- Set Viewport
- Use External Stylessheet
- Lowercase filenames

01 - CSS Basic

- **Syntax & Usage**
  - External Stylesheet
  - Internal Stylesheet
  - Inline Stylesheet
  - Comments
- **Color & Bg Color**
  - Color Name
  - RGB & RGBA
  - Hex & HexA
  - HSL & HSLA

- **Background & Bg Image**
  - BG Repeat, Attachmment, Position
  - BG Size, Origin & Clip
  - Multiple Background Images
- **Border, Outline**

02 - CSS Basic

- **Formatting**
  - Text
    - Align, decoration, transform
    - Spacing
    - Shadow
    - Overflow, Text-overflow, White-space
    - word-wrap, word-break
  - Font & Web Fonts

- **Display**
  - Inline
  - Block
  - Inline-Block
  - None
- **Visibility**

CSS Basic - Section 3

- **Position**
  - Static
  - Relative
  - Absolute
  - Fixed
  - Sticky

- **Advance Selectors** – 11 types
  - Id
  - Class

- Element
- Combinators
  - descendant selector (space)
  - child selector (>)
  - adjacent sibling selector (+)
  - general sibling selector (~)
- Pseudo Class
- Pseudo Element
- Attribute Selector
- Global Selector

CSS Layout – Box Model – Section 4

- **Box Model**
  - Width
  - Height
  - Padding
  - Margin
  - Border
  - Box Sizing
  - Basic Responsive Layout
  - Calculation Examples

- **Block Alignment**
  - Float
  - Clearfix

CSS Layout - Flexbox – Section 5

- **Flexbox**
  - Block
  - Inline
  - Direction
  - Wrap
  - Flow

- **Flex Alignment**
  - Align items
  - Align content
  - Justify content

CSS Layout - Responsive – Section 6

- **Media Query**
  - Viewport
  - Usage
    - Media stylesheets
    - Media Query Rule
  - Media Types
  - Resolution
  - Media Query Condition
  - Orientation

- **Responsive Design**
  - Examples
  - Responsive Images
  - Responsive Videos
  - Responsive Frameworks

CSS 3 - Effects - Section 7

- **Box Shadow**
- **Gradients**
  - Linear & Radial
  - Gradient Generator
- **2d Transforms**
  - Rotate
  - Translate
  - Scale
  - skew

- **3d Transforms**
  - rotateX
  - rotate
  - Transform-origin

CSS 3 - Animation – Section 8

- **Transition**
  - Hover Effects
  - Transition delay
  - Transition Timing Function
  - Transition duration

- **Animation**
  - Animation Declaration - @keyframe
  - Animation-name
  - Animation-duration

- Animation-delay
- Animation-iteration-count
- Animation-direction
- Animation-timing-function
- Animation-fill-mode

- **Animation Example**

Bootstrap

- **Basics**
  - Installation
  - Basics
  - Grid System
  - Layout
- **Components**
  - Form
  - Bootstrap Components
    - Navbar
    - Card
- Carousel
- Modal
- Tab
- Dropdown
- **Utilities**
- **Tricks & Techniques**

01 - JavaScript Basics

- Syntax & How to use
- Input, Output
- Programming Concepts
  - Statements
  - Variable – var, let, const
  - Operators
  - Data Types
  - Conditional Statements
  - Functions
  - Loops

- Hoisting

02 - JavaScript – Datatype & Methods

- String and Methods
- Number and Methods
- Date and Methods
- Array and Methods
- Sets
- Maps

03 - JS – Object, Function, Classes, Module

- Object Definitions, Properties, Methods
- Functions and Function Methods
- Classes
- Module
- **ES6 Features**
  - Arrow Function
  - … operator (spread)
  - Set Object
  - Promise

- Symbol
- Rest parameters in function (…arrow)

04 - JS - Events and DOM

- **Events**
  - Mouse Events
  - Keyboard Events
  - Other Events
- **DOM**
  - DOM Selectors
  - DOM Manipulation

05 - JS - Forms, BOM, JSON, Ajax

- **JS Forms**
  - Form API
  - Form Validation

- **BOM**
  - BOM Properties
  - BOM Methods
- **JSON**
- **Ajax**

- Ajax
- Ajax Example
- **Tricks & Techniques**

TypeScript

- **Installation**
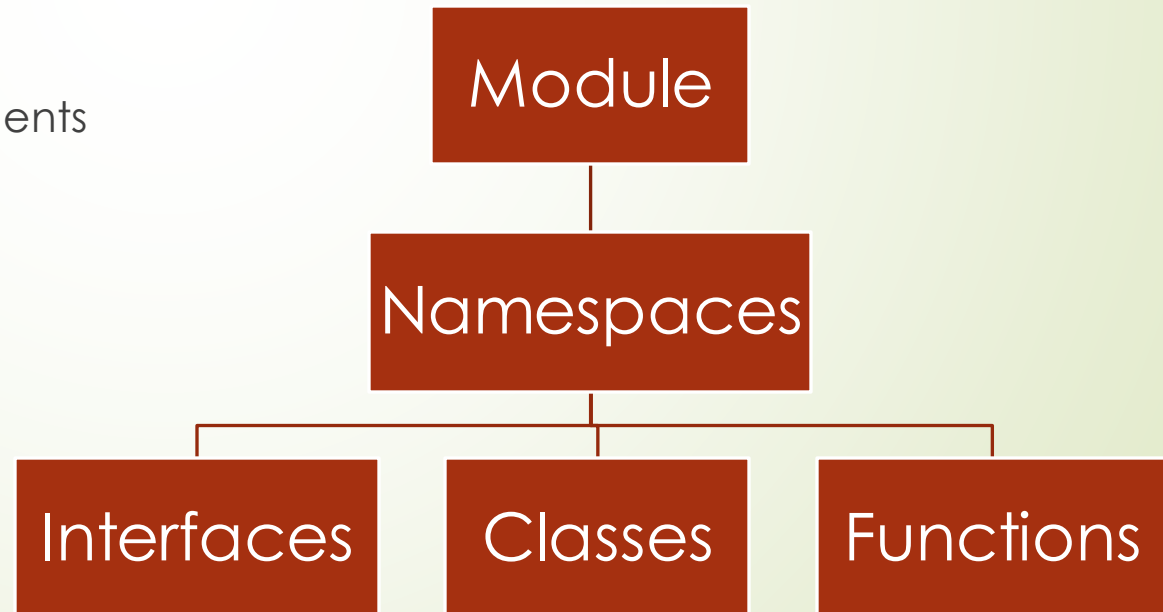 - Single File
  - Project – tsc --init
- **Basics**
  - Variables – Data Types
  - Union
  - Operators
  - Conditional Statements
  - Loops
  - Functions
  - Array – Tuples
  - Object

- **TS Features**
  - Interface
  - Class
  - Namespaces
  - Modules

Module

Namespaces

Interfaces   Classes   Functions

01 Angular Basics

- Installation
- Ng commands
- Angular Project Structure
- **Angular Building Blocks**
  - Module
  - Component
  - Templates
  - Metadata
  - Data Binding

- Directives
- Service
- Dependency Injection
- Decorators
- Pipes

02 - Angular Component, Directive and Pipe

- **Component and Directive**
  - Selector
  - Input
  - Output
  - Lifecycle
  - Standalone Component
- **Pipe**
  - Transform

03 - Angular Router

- Component Routing
- Module Routing
- Child Routing
- Router Outlet
- Links
- Interceptor
- Route Guard

04 – Angular Services

- **Services**
  - Service with RxJS Features
  - Observable
  - Subject & Behaviour Subject
- **HttpClient**

05 - Angular Form, Validation

- **Angular Forms**
  - Template Driven Form
  - Reactive Form
- **Form Validations**
  - Built in validations
  - Custom Validation
  - Async Validation
- **Formly Form**

01 - NodeJS Installation

- NodeJS Installation
- REPL Terminal
- Run JS
- **NPM (Node Package Manager)**
  - Npm init
  - Npm install (packagename)
    - -g Global install
    - --save (-s) – save as dependency
    - --save-dev – save as dev dependency
  - Npm remove/uninstall
  - Npm update

- Npm login
- Npm whoami
- Npm publish / unpublish
- **NodeJS Basic Program**
  - Run js in node
- **Callback Concept**
  - Synchronous vs asynchronous
- **Built in Modules – fs, path**
  - Fs module
    - File read/write
    - Use of path module

02 - NodeJS Modules

- Modules
  - http
  - Fs
  - Os
  - Path
  - cluster
- Third Party Module
  - Mongo – mongodb, mongoose
  - Mysql
  - expressJS

03 - ExpressJS

- ExpressJS Basics
  - Api
  - Request and response objects
  - Path with dynamic params
  - Methods – get, put, post, delete
  - Default path
  - Error Handling
- Middleware
- Router
- Controller
- JWT Authentication

04 – Nest.js

- Nest.js Basics
  - Controller
  - Provider
  - Module
  - Middleware
  - Exception Filter
  - Pipes
  - Guards
  - Interceptor
  - Custom Decorator

05 – Socket.io

- Basics of Socket.io
- Socket.io with ExpressJS
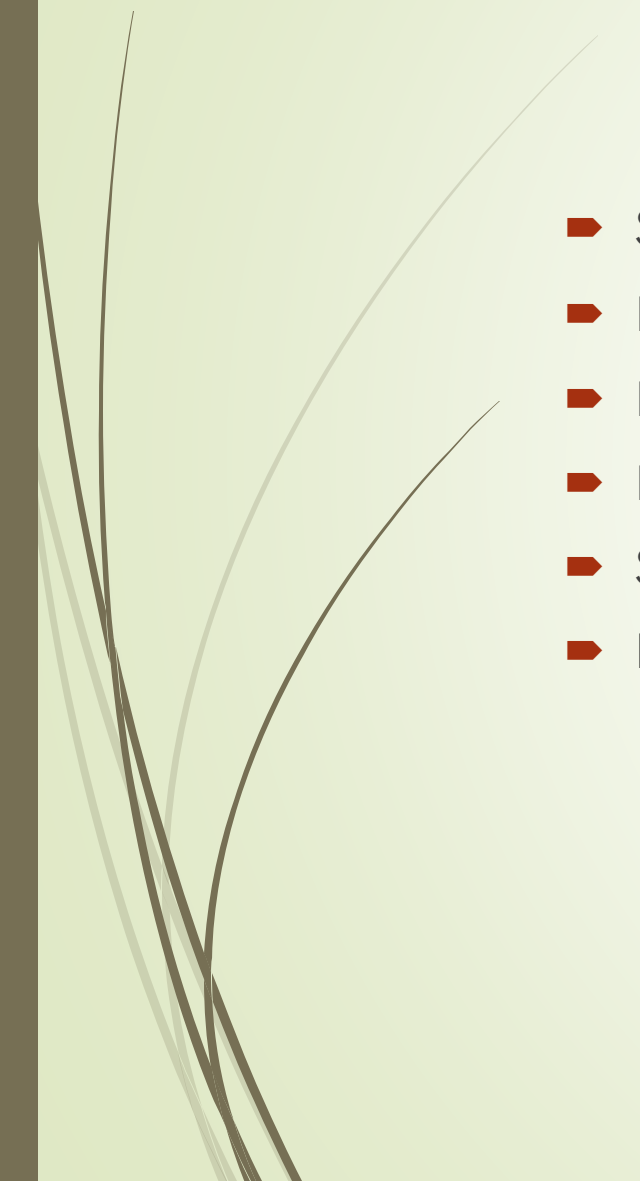- Chat app with Socket.io and ExpressJS

01 – Python Basics

- Syntax & How to use
- Input, Output
- Programming Concepts
  - Statements
  - Variable
  - Operators
  - Data Types
  - Conditional Statements
  - Functions
  - Loops

02 – Python – Datatype & Methods

- String and Methods
- Number
- Date, Methods and Formats
- List (Array) and Methods
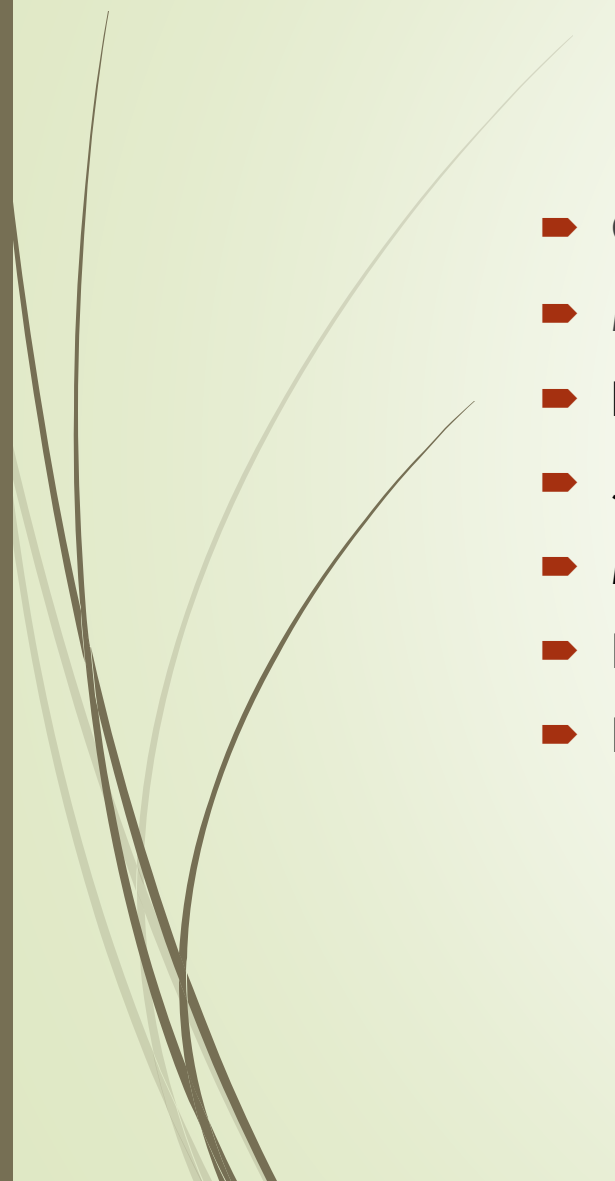- Sets and Methods
- Dictionary and Methods

03 – Python – More Features

- Classes
- Module
- Iterators
- JSON
- Math
- Error Handling
- PIP
- File Handling
  - Open

- Create
- Update
- Delete
- Folder Management

03 – Python – More Features

- Classes
- Module
- Iterators
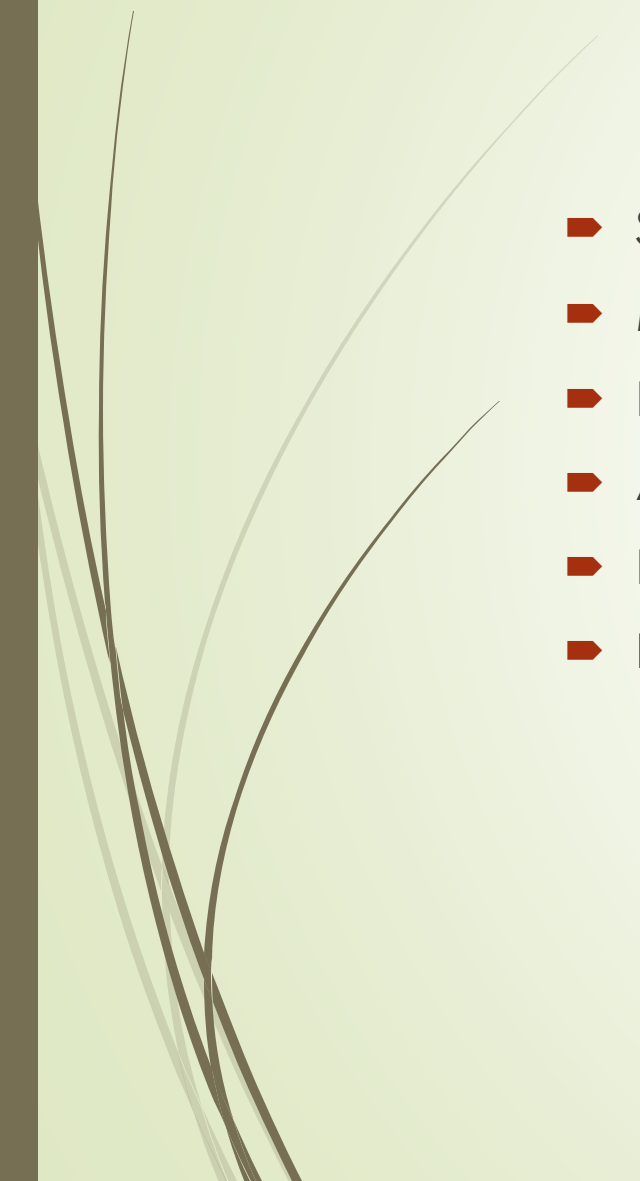- JSON
- Math
- Error Handling
- PIP

01 – Java Basics

- Syntax & How to use
- Input, Output
- Programming Concepts
  - Statements
  - Variable
  - Operators
  - Data Types
  - Conditional Statements
  - Loops

02 – Java – Data Types and Methods

- String and Methods
- Math and Methods
- Date, Methods and Formats
- ArrayList, LinkedList and Methods
- HashSets and Methods
- HashMap and Methods

03 – Java OOP and Features

- Class
  - Modifiers
  - Encapsulation
  - Inheritance
  - Polymorphism
  - Abstraction
  - Interface
  - Enum
  - Wrapper Classes
- Object

- Packages & API
- Threads
- Lambda Expressions

MongoDB

- Installation
- Mongo Shell
- Mongo Compass
- CRUD Operation
- Aggregation Pipeline
- Indexing
- Backup and Restore

MySQL

- Installation
- MySQL Shell
- MySQL Workbench
- SQL - CRUD Operation
- SQL – Join
- SQL – Trigger
- SQL – Stored Procedure
- Indexing
- Backup and Restore

Basic App with MEAN

- eCommerce Project

DevOps

- AWS
  - EC2
  - Lambda Function
  - CloudFront
  - Elastic Beanstalk
- Docker
  - Installation
  - Build Docker Image
  - Dockerhub
  - Deploy Docker image

- Jenkins
  - Jenkinsfile
  - Jenkinspipeline
  - Jenkinsjobs

AI Tools and Integrations

- **Tools**
  - ChatGPT
  - Google Bard
  - Codedebugger.io
  - AWS CodeGuru
  - GitHub Copilot
- **AI integration**
  - AI Api Integration
  - ChatGPT Integration