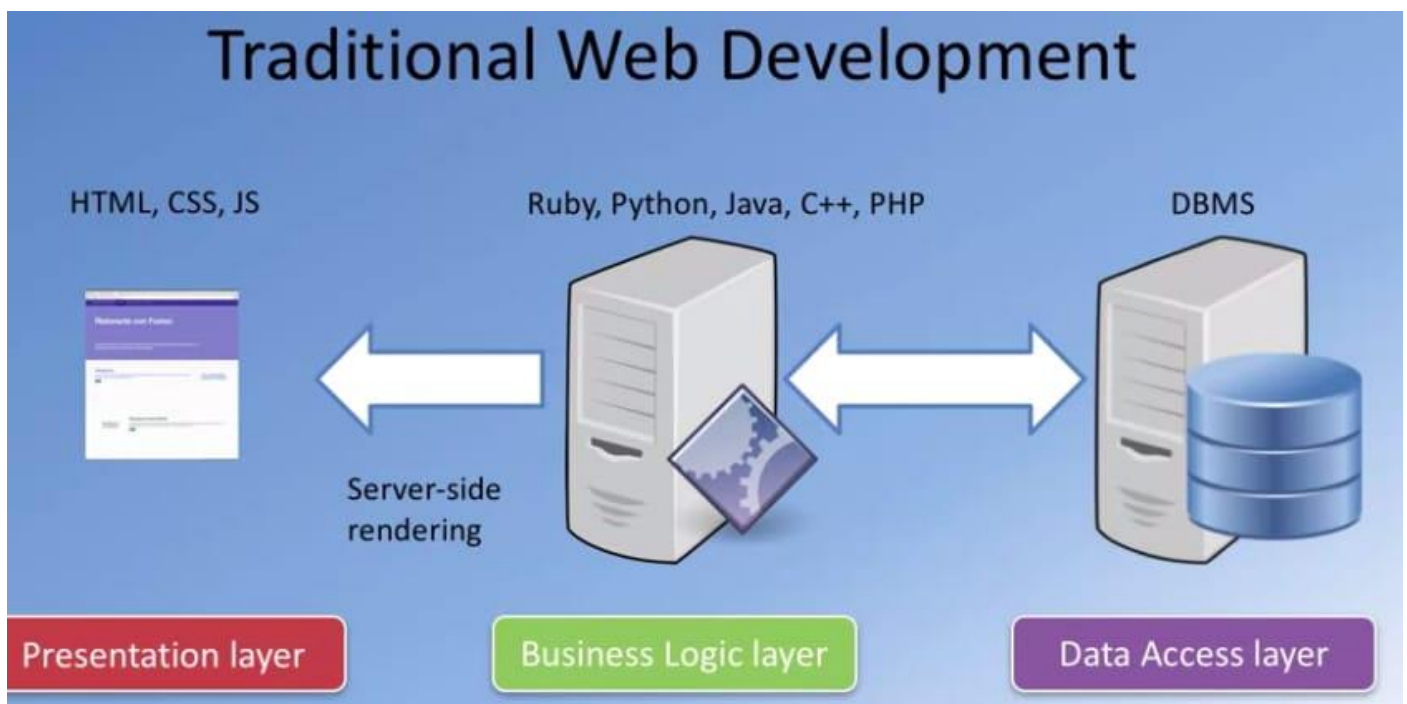# FULL STACK DEVELOPMENT
Three -tier Architecture

WHAT IS A THREE-TIER ARCHITECTURE?

Def := In this article, we will get into detail about the three-tier client-server architecture. Three-Tier Architecture is a well-established software application design pattern which will organizes the application in the three logical and physical computing tiers as following.

- Presentation Tier
- Application Tier
- Data Tier

PRESENTATION TIER (FRONTEND)

➢ Part of the website that the user directly interacts with
➢ Includes styling, graphics, text, alignment, navigation, colours etc.
➢ Responsiveness and performance are two main objectives of the frontend.
   FRONTEND USING: HTML,CSS(Framework use Bootstrap),JavaScript

APPLICATION TIER (BACKEND)

✓ Backend is the server side of the website.
✓ It includes activities like writing APIs, creating libraries, and working with system components.
✓ It ensures data integrity and consistency.
✓ Involves scripting and writing code to communicate with the database.
   BACKEND USING : python, node.js, java...

DATA TIER:

- ❖ It is the last tier of the architecture also known as the Database Tier.
- ❖ It is used to store the processed information so that it can be retrieved later when required.
- ❖ It consists of Database Servers like- Oracle, MySQL, DB2, etc.
- ❖ The communication between the Presentation Tier and Data-Tier is done using middle-tier i.e. Application Tier.

What is client?

A client is a device or software that connects to a server to request and use its services or resources. The client sends requests to the server and receives responses in a request- response protocol.

What is server?

A server refers to a computer program or a device that provides resources, data, or services to other devices known as clients, over a network. It play a crucial role in enabling communication, data storage, computation, and access to shared resources.

What is API?

An API, or Application Programming Interface is a set of rules and protocols that allow software applications to communicate with each other and exchange data and functionality.

What is Application? What is the type of application ?

Application is a collection of Programming language. An App is a software program that lets you do things for lack of a better work. E.g.: An alarm clock, Remote etc.

TYPES OF APPLICATIONS:

Applications can be classified into various types based on their purpose, platform, and functionality. Here are some common types of applications.

1. Web Application 2.Mobile Application 3.Desktop Application

1. Web Application: A web application is a software that runs in web browser. It allows to access complex functionality without installing or configuring software. E.g.: Chrome, Opera

2.Mobile Application: A mobile application, also known as a mobile app or app, is a software program designed to run on a mobile device, such as a smartphone or tablet. E.g.: WhatsApp, Instagram, Facebook

3.Desktop Application: A desktop application is a software program designed to run on a personal computer E.g.: Calculator, Photo Gallery

What is Logic?

A logic is a set of rules and techniques.

What is URL?

A URL or Uniform Resource Locator is a reference (an address) to a web resource to access the resource by entering the URL into a web browser's address bar.

What is IP?

An IP, or Internet Protocol, is a unique identifier assigned to each Internet-connected device. It identifies and allows these devices to communicate with each other on an internal or external network.

E.g.: http://W.W.W. google.com/

What is GUI?

GUI stands for(Graphical User Interface).The GUI is presented (displayed) on the computer screen. It is the result of processed user input and usually the main interface for human-machine interaction.

What is CLI?

A command-line interface (CLI) is a means of interacting with a computer program by inputting lines of text called command-lines.

What is DNS? What is Domain?

The Domain Name System (DNS) translates domain names to numerical IP addresses, allowing users to access resources using easily memorable names.

Domain: A domain is a unique identifier used to access a website.

Ex: "www.flipkart.com, " "flipkart.com" is the domain name

What is Library?

Collection of pre written code modules or functions that developers can use to add specific functionality to their application.

What is Framework ?

Collection of pre written code tools that help developers build UI/UX of a website or web application

FRONTEND TECHNOLOGY

1.HTML

2.CSS

3.JavaScript

HTML:

Hypertext markup language used to structure the content on web pages it provides a set of elements that define different parts of a web page such as headings, paragraphs, links, images, videos.

CSS: :

CSS (Cascading style sheets) is the language which is used to style an HTML document. CSS describes how HTML elements should be displayed.

- ❖ CSS is a style sheet language used to define the presentation and layout of a document written in a markup   language, such as HTML,CSS
- ❖ CSS is used to separate the presentation and layout of a document from its structure and content, allowing for easier maintenance and customization.
- ❖ CSS can be used to define the font, colour, spacing, and positioning of elements on a web page.

❖ CSS is a using framework and libraries such as Bootstrap

JAVA SCRIPT:

- ✓ JavaScript is a high-level, dynamic, and interpreted programming language used to create interactive and dynamic web pages.
- ✓ JavaScript is commonly used in a client-side environment. JavaScript is executed on the user's device, JavaScript is also used in a server-side environment, with the help of frameworks and libraries such as React.JS,