Full Stack Development

Full stack development refers to the process of building the front-end (client - side) and back-end (server side) of the web application. A full stack developer who has knowledge and skill across the entire stack of technologies used to build a complete application

- ✓ **Frontend:**
  The front-end is the interface of the application, the part that users actually see and design, user interface, and user experience. The core technologies are HTML (Structure), CSS (Style), and JavaScript (Behaviour). Popular frameworks and libraries are React, Angular, and Vue.js.
- HTML (HyperText Markup Language) is the foundation of every webpage. It lays out the basic framework of a webpage by structuring the information and content into elements, like headings, paragraphs, images, and links. HTML uses tags to define the different parts of a webpage and determines how the HTML elements on a page will be arranged. Without HTML, there would be no text, media or other content on a webpage or any web page at all.
- CSS
  CSS (Cascading Style Sheets) is used to beautify the structure that is provided by HTML. CSS defines the colors, fonts, spacing, alignment, and layout of a webpage. Before CSS, websites looked terrible. When websites were styled using only HTML and HTML tags, it was awkward and unprofessional, to say the least. CSS separates content from presentation. While we can appreciate the aesthetics of a website because of CSS, CSS primarily enhances the user experience by creating visually compelling, responsive, and functional pages.
- JavaScript
  JavaScript is the stuff of interactive websites, dynamic content, and most importantly, the ability to provide an interactive experience. JavaScript can do several things to enhance the user experience, such as real-time updates, animations, and dynamic form validation. JavaScript is a programming language that can manipulate HTML directly and can not only alter HTML but can also alter CSS, so the webpage can alter without a full refresh. JavaScript is essential for creating modern web applications that are responsive, functional, and interactive.

- ✓ **Backend:**
  The back-end, this is what runs the application by handling business logic, authentication, etc. When users make requests, the back-end runs business logic, gets data from the database all while doing it on the back-end without users ever knowing it is happening. Popular languages are Node.js, Python, Java, PHP, and

Ruby on Rails. API designs such as REST or GraphQL are used in communication but connect the server to the client side on an application.

- PHP:
  A free and open-source scripting language that is particularly well-liked for web development is called PHP (Hypertext Preprocessor). PHP is a server-side programming language that executes on the server and delivers the code output to the user's web browser. In order to integrate user input into HTML pages, connect to the backend, and create dynamic and interactive websites, developers utilize PHP. With web applications, PHP can handle forms, track sessions, and communicate with storage systems like MySQL databases, among other things.

✓ **Database:**

The databases are what holds the application data organized, securely, and managed. It allows an application to retrieve, update, and store data efficiently and effectively. Databases can be a relational database (SQL) such as MySQL, PostgreSQL, or Oracle, or they can be non-relational or NoSQL databases such as MongoDB, Firebase, or Cassandra.

- MySQL

  MySQL is one of the most popular open source RDBMS (relational database management systems). It helps store, manage, and organize data in structured tables, where it can be retrieved using the SQL (Structured Query Language) language. Everyone knows MySQL for the speed, reliability, and ease of use. It's so popular, that many web applications default to its usage, especially when used in conjunction with PHP in the LAMP (Linux+Apache+MySQL+PHP) stack. MySQL powers popular platforms such as WordPress, Facebook, and YouTube, and is viable for everything from small websites to enterprise-level applications.