# Front end web developer

## Mark Up

### HTML

Stands for Hypertext markup language: the standard *markup language* for creating web pages and web applications

Markup language: a system for annotating a document in a way that it is syntactically distinguishable from the text.

HTML elements are the building blocks of HTML pages.

### CSS

Cascading style sheets: is as *styles sheet language* used for describing the presentation of a document written in a markup language like HTML

Styles sheet language: is a computer language that expresses the presentation of structured document.

<https://zendev.com/ultimate-guide-to-learning-css.html#css-preprocessors>

## Programming language

### Javascript

JS is a *high level* client side *interpreted programming language*. It is a language which is also characterised as *dynamic weakly typed prototype based*

High level programming language: is a programming language with strong abstraction from the details of the computer. It uses natural language elements to significantly automate areas of computing systems such as memory management, making the process of developing a program simpler and more understandable than using lower level language like Machine code.

interpreted programming language: is a type of programming language which most of its implementations execute instructions directly and freely, without previously compiling a program into machine language instructions.

### Typescript

TS is a superset of JS which adds optional static typing to the language. It is pure *object oriented* with classes and interfaces.

OOP: based on the concept of *objects*, which may contain data, in the form of *fields*, often known as attributes and code in the form of procedures, often known as methods.

Fields: is the data encapsulated with a class or object. In the case of regular field, for each instance of the object there is an instance variable: for example, Employee class has a Name field

Objects: it can be a *variable*, *data structure*, a *function* or a method, as such is a value in memory referenced by an identifier.

Variable: is a storage location paired with associated symbolic name which may contain some known or unknown quantity of information referred to as a value.

Data structure: is a data organisation, management and storage format that enables efficient access and modification. A collection of data values, the relationship among them and the functions or operations that can be applied to the data. (e.g. array)

Function (subroutine, procedure): is a sequence of program instructions that performs a specific task, packaged as a unit.

Method: is a function associated with a message and an object. An object Is mostly made up of data and behaviour, which forms the interface that an object presents to the outside world. Data is represented as the properties od the object and behaviours as methods. For example a Window object would have methods such as open and close while the state would be a property.

Identifiers are [tokens](https://en.wikipedia.org/wiki/Token_(parser)) (also called [symbols](https://en.wikipedia.org/wiki/Symbol)) which name language entities. Some of the kinds of entities an identifier might denote include [variables](https://en.wikipedia.org/wiki/Variable_(programming)), [types](https://en.wikipedia.org/wiki/Data_type), [labels](https://en.wikipedia.org/wiki/Label_(programming_language)), [subroutines](https://en.wikipedia.org/wiki/Subroutine), and [packages](https://en.wikipedia.org/wiki/Modular_programming).

## MVC Framework

### Angular

Angular is a TS based open-source front end web application framework.

Web application framework: is a software framework designed to support the development of web applications and provides a standard way to build and deploy web applications. It also aims to automate the overhead associated with common activities performed with web development such as HTTP client libraries, database access, templating framework and session management.

Model View Controller

Many frameworks follow the MVC architectural pattern to separate the data model with business rules from user interface.

### JS Fundamentals

Basics

* Syntax
* Variables
* Arrays and Object Literals
* Events
* Functions, loops, conditions

Modules

* ES6 Modules, TS
* Parcel, Webpack & Babel
* Export and Export Default

Classes

* Structuring a class
* Constructors
* Methods and properties
* Instantiations
* Extending classes

Arrow Functions

* Written in modern JS
* Scope and lexical this

Promises / Asynchronous Requests

* Create and receive promises
* Standard .then() and .catch() syntax
* Async/Await is optional but recommended
* Fetch API for making HTTP requests

De-structuring

* Const

Components and State

* Nested components
* Redux for state level management, GraphQL

Spread Operator

* Const …

High order array functions

* forEach()
* map()
* filter()

## Version control

### Git

Git is a version control system for tracking changes in computer files and coordinating work on those files among multiple people. Its primarily used for source-code management in software development but can be used to track changes in any set of files.

## Repository hosting services

### Github

Github is a web-based hosting service for version control using Git.

### Bitbucket

Bitbucket is another web-based repository hosting service for version control using either Git or Mercurial.