

React

JavaScript library with virtual document object model

Open source, build single page apps with UI

To use: Install npm and node.js

Syntax: JavaScript and HTML

Based on the concept of components making up a complex system

Commands in Powershell:

Npm install

Npm run start

Check for updated versions:

React native -v

https://www.w3schools.com/whatis/whatis_react.asp

<https://www.patterns.dev/posts/reactjs/>

Express.js

Web app framework for node.js

Easily develop server side applications

Simple, flexible, and scalable

Install with node.js:

Run Powershell as administrator

Npm i express

Speeds up the development process

Adds more features

Handles I/O well

Used for request and routing

<https://expressjs.com/>

https://www.tutorialspoint.com/nodejs/nodejs_express_framework.htm

AWS

Offers large selection of web hosting services

EC2, Lightsail, Lambda, Elastic Load Balancing, S3, Amplify Hosting

Different options for different languages, website types, frameworks

Secure, flexible, and compatible for the most part

Wide range of functionality can be harder to pick up

Set up EC2 instance for free 750 hours a month

Virtual server to run web applications on cloud infrastructure

<https://aws.amazon.com/console/>

https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwidv5Wbk6H6AhWKJkwKHYtaCyoYABAAGgJvYQ&ohost=www.google.com&cid=CAESauD2wngDBBRik6S1NHtINHYiHd3pi9YKR-7cqR3vKnj6hn-ht-Y_LefipPm1uOhXlz5O0BZfrT6OjKheGXBKP4

[BXOLRkqvtxAWWAHmbuLxJ-1r0_SEwErX7LYTK6k2bYy5yHdL7G6ple63U&sig=AOD64_3HWbWSajRqalaebk8DQKT6-sCK7A&q&adurl&ved=2ahUKEwiAqYebk6H6AhXkk2oFHa_tA1gQ0Qx6BAgDEAE](https://www.w3schools.com/js/)

JavaScript

Scripting language often used with HTML to make dynamic applications
Used on client side for majority of websites nowadays
Essential for user interaction on web applications
Focuses on behavior rather than layout or content
Listens to events from mouse and keyboard to trigger an action
Can cause changes such as output, color changes, or others
Works with HTML/CSS for functionality of buttons, menus, data entries, etc.
<https://www.w3schools.com/js/>
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Data_structures

Azure Devops

Helps developer teams plan, organize, and work together
Link user stories to different features as children of parent
Assign tasks to different users
View assigned tasks in query
View user stories by feature in backlogs
Set up sprints each week
Set up group repository in DevOps
Can import work items as csv file
Can create test cases, pipelines, and artifacts
<https://azure.microsoft.com/en-us/products/devops/>
https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwjg_MrJk6H6AhXpKUwKHT2GAXUYABABGgJvYQ&ohost=www.google.com&cid=CAESauD2YIXLvlhp6tOq2SiXBoSAitrUugdZQpb5hoYq8B8aAbOu8sZ6X7Q7HJ3kdqyHldR1-u8C6VW0tK225jP8Nul04SqtHe4UDiSZ2a58XL_tq0jBbxs-qnBTMNWDZBBXXo6rfayMRTEb9kM&sig=AOD64_0A_V-0YAe3E72VZsEhR0L3QIz07w&q&adurl&ved=2ahUKEwjmpMLJk6H6AhW5k2oFHaD-B_0Q0Qx6BAgFEAM

HTML/CSS

Standard markup language and styling component
Instead of doing inline styling, all style elements can be organized in a css file.
HTML specifies content and content types, CSS focuses on the format and visual appeal.
Make different interactive elements to link with JavaScript: buttons, menus, forms
HTML title tag shown in tab names

Anchor tags link to other places

Images can be referenced by link or by directory

The bigger the number after h in header tags, the smaller the headers are

Line breaks are made with br tags

VSCode HTML setup shortcut:

Exclamation mark and then enter

CSS can be applied to every instance of a specific tag or only chosen ones, classes can be used or labels and IDs can be made to specify what is being styled

<https://www.w3schools.com/html/>

<https://developer.mozilla.org/en-US/docs/Web/HTML>

Full-stack deployment

Deploy application with front end and back end

Client and server side frameworks and tools

User interactions and data storage

Stack consists of parts that handle databases, requests, interactions, and server

Ex. MySQL, Express, React, node.js

Handle requirements and design beforehand

Usually required HTML/CSS along with browser programming such as JavaScript and server programming, such as node.js

Frontend and backend servers should be accessible through the same port

<https://www.codecademy.com/article/deploying-a-full-stack-app-with-heroku#:~:text=A%20full%2Dstack%20app%20is.and%20store%20long%2Dterm%20data.>

<https://www.sumologic.com/blog/full-stack-deployment/>

MySQL

Open source database system

Can be used for a wide range of applications sizes

Select rows or column or specific entries with given conditions

Can do outer or inner joins

Select all with *

Dissolve many to many relationships into 1 to many and many to 1

Primary key columns identify each entry in a table

Various techniques for queries and filters, joining tables

Can do calculations with date ranges while selecting data entries

Can add new columns with data type

Can add new entries by entering data for all fields

NULL for nonexistent element in specific entries

Can delete or add based on given conditions

Order results based on specific fields

Search tables by providing beginning or ending characters
Can use and as well as or statements to find data
Can select from one specific table out of many
Can modify entries already in a data table and table names

<https://www.mysqltutorial.org/mysql-basics/>

<https://www.tutorialspoint.com/mysql/index.htm>