WebDev/Digital Tutorial

A Front End Development Course used in 2015, updating in 2021, 100% free to use

Course #1: Intro & HTML

(week 1)

Introduction to Front End Development

How the Web works: HTTP, packets, browsers, developer tools, etc.

What is a web page? How does the browser work? How can I see web page info?

» Start here: Resilient web design book (**mandatory**) & How does the Web work?

That resource is relatively large for what we need to get into, so focus on these links:

» Don't fear the Internet: the basics & ▶ How does the Internet work? - Naked Science Scrapbook

» The Odin Project - Web Development 101 (NEW)

» ▶ A Packet's Tale. How Does the Internet Work?

» Don't fear the Internet: browser / How DNS Works + ▶ How DNS Works (NEW)

» ▶ CS50 2017 - Lecture 6 - HTTP - part of http://cs50.tv/2017/fall/ + How HTTPS works (NEW)

» ▶ How the Internet Works for Developers - Pt 1 - Overview & Frontend (**mandatory**)

» ▶ How the Internet Works for Developers - Pt 2 - Servers & Scaling (**mandatory**)

Information architecture basics

You will need to grasp the basics of a field which has been around much longer than the Web itself, but which serves as a base to how we write HTML and how we navigate and search online. It's a complex field, rooted in the craft of librarians of old, that needed to devise smart ways to describe and organize information / books, and you will just need to skim through it so you get a good understanding of what it means to describe, arrange and provide access to information in general.

» Understanding Information Architecture (**mandatory**). Read this article + this primer (NEW)

» Book: **Information Architecture for the WWW**, chapters 1–9.

» Book: **A practical guide to Information Architecture**: all of it. (**skim through at least 1 book**)

Introduction to HTML

A brief history of HTML

Knowing the basic evolution of HTML will allow you to appreciate where we are now and how long we've come since the early days of the Web.

» Book: **HTML5 for Web Designers**, chapter 1, or A brief history of markup on A List Apart

HTML step by step

There are some great online tutorials for the basics of HTML (**mandatory, at least 2 – HTML only**):

» Mark Pilgrim's Dive into HTML5 free e-book (NEW) + Mozilla Front End tutorial (NEW)

» Learn HTML/CSS: Shay Howe + CodeSchool Web Path + Jen Simmons teaching HTML (NEW)

» Washington.edu course on HTML + Khan Academy Web Programming

Notice that most of these (free) tutorials also have a CSS component. You can try going through the CSS now to make it easier for you next week, but for now I **strongly** recommend you focus on the HTML part. That will allow you to get all these tutorials done in time, so you get a firm understanding of HTML this week. You'll need it! You'll also need:

A full HTML reference

» Mozilla Developer Network: HTML reference (**mandatory**) (this site is **extremely** valuable!)

Course #2: CSS & SFX

(week 2)

Introduction to CSS

HTML+CSS tutorials

The exact same tutorials mentioned in Course #2 (**mandatory, at least 2 – HTML + CSS**):
» Learn CSS from Web.DEV (NEW)
» Learn HTML/CSS: Shay Howe / CodeSchool Web Path / Khan Academy Web Programming
» The Odin Project: HTML and CSS (NEW) + Web Almanac on CSS (NEW)
» Kevin Powell's HTML/CSS tutorial on Scrimba (NEW) + FreeCodeCamp Responsive Web Design
» 30 days to HTML/CSS (NEW) / CSS Protips (NEW) / https://web.dev/learn/css/

CSS+Layout tutorials

» Washington.edu course on CSS
» Learn Layout (**mandatory**)
» Grid for layout, Flexbox for components (NEW) / Guide to Grid (NEW) (**mandatory**)
» Relearn CSS layout (NEW) / Smol CSS layouts (NEW) / CSS Grids by Wes Bos (NEW)
» HTMLDog: Beginner CSS tutorial, Intermediate CSS tutorial, Advanced CSS tutorial

CSS articles, tools and information

» Calculating CSS Specificity / Specificity calculator (**mandatory**)
» The CSS "homepage" / CSS: Designing for the Web / Explain CSS selectors in plain English
» CSS Zen Garden (**mandatory**) + CSSTricks Almanac (NEW reference) + CSS Vocabulary (NEW)
» Mozilla Developer Network CSS Info / Solve most of IE's bugs
» ▶ An Introduction to Browser Rendering (**mandatory**) (you might need Chrome Canary to see this)

A full CSS (and HTML / Accessibility / etc.) reference

» Mozilla Developer Network: CSS reference (**mandatory**)
» A complete guide to CSS functions (NEW) / Modern CSS solutions for old CSS problems (NEW)
» CSS Tricks Guides (NEW)

Special effects using CSS3 / Fonts (soon to be deprecated)

As a general rule, from now on you should try to explore every cool site you see, inspecting its CSS and element distribution with your favorite browser inspection tool (Firebug for Firefox, the built-in inspector from Chrome). Some of them are done right, some of them aren't, but the point is you need a "hacker attitude" in order to steal the interesting parts and become versed in the ways of deconstructing someone else's design in order to find out how it works.

Effects and tutorials

» Codrops (I recommend subscribing to this resource, it's one of the best)
» CSS-Tricks CSS Snippets / A complete guide to CSS transitions (NEW)
» Magic animations / Hover effects / Hovers / Effekts / Box / Advanced animations (NEW)
» CanIUse – Use this to check in what browsers are some features supported, e.g. CSS Grid
» CanIEmail – Similar to CanIUse but for email clients exlusively / Debugging CSS (NEW)
» CSS3 gradient generator – Use this to generate gradients of any kind for CSS backgrounds

Icon fonts (deprecated - use inline SVG icons instead)

» Why IconFonts are great / Iconfont generator: IcoMoon / Iconfont kit: FontAwesome
» How to animate SVGs, the simple way (might not be 100% free) + SVG Animations (NEW)

Course #3: Your first project – a quiz

(weeks 3-4)

Tools of the trade: IDE, GIT, FTP

Until now, you've been exploring front end development mostly in browser-based applications. Now it's time for the real deal. We'll set up your GIT account so you have full source control (while also teaching you how it works). We'll then set up your IDE (ideally, WebStorm) so you have full access to its numerous helpful features, and get you acquainted with some of them. For people taking this course from home / their spare time, obvious alternatives will be explained.

Version Control clients & services

» GitHub / SourceTree / Tortoise SVN

Using Version Control

» GIT 101 / PDF guide / PR guide / Conflicts
» GitHub + SourceTree tutorial / Commits
» GIT with WebStorm / Project rules (NEW)
» Using the terminal / Workflows (NEW)

IDEs

» Visual Studio Code (free and surprisingly good)
» WebStorm (paid) / Sublime or Brackets (free)
» Online editors (for testing only)

FTP clients

» FileZilla
» Total Commander / CoreFTP

Semantics, Standards & Validation for HTML/CSS

Standards & Validation

Standards! Highly important, even though a page "works without them". The truth is, it doesn't, not in the way we want it to: extensible, easy to debug, with a much lowered bug threshold than a non-standards-compliant version. Please read through all these materials carefully, because this is one of the most important things you need to grasp at this stage.

» Washington Edu lesson in Standards
» What are web standards and why should I use them? (**mandatory**)
» Book: **Designing with web standards**, all of it.
» W3C HTML Validator / W3C CSS Validator
» Washington.edu courses on: Web Standards and Accessible Design + Quality Control

Semantics

» Let's talk about semantics / Pursuing semantic value (**mandatory**)
» Introduction to the semantic web / Semantic code: What? Why? How?
» HTML5 semantics from Smashing Magazine
» Diving into HTML5
» Microformats primer - Sitepoint (**mandatory**)
» Google Structured Data Intro (**mandatory**) + Google Structured Data Examples (**mandatory**)
» Get started with Microformats & Microformats v2
» Why Semantic Search is important, from Ahrefs (NEW)

Mobile-first Responsive Design (everything is mandatory)

» Book: **Responsive web design**, all. Plus Ethan Marcotte's articles on A List Apart. Mostly this one!
» Book: **Mobile first**, all of it. Plus Luke Wroblewski's interesting presentations. Most of them...
» Scaling User Interfaces / Creating a mobile-first responsive web design / Responsive Design is...
» RWD Tutorials / Building a better responsive website / RWD fundamentals / Learn RWD @ Web.Dev
» A full list of devices and their resolutions / Device agnostic breakpoints / State of the Web
Natural responsive web design breakpoints / Re-thinking breakpoints in responsive design
» I have no idea what the hell I am doing // Responsive Images tutorial on MDN // FlexboxFroggy

Course #4: Real world problems

(midterm exam + weeks 5-7)

Accessibility

» Accessibility link list from WASP
» W3C Accessibility Standards
» Accessible forms (all levels) + Sign-in form best practices (NEW)
» Easy checks: a fast review of web accessibility (**mandatory**)
» Introduction to ARIA (NEW)
» Website accessibility report generator
» Just Ask: Integrating Accessibility Throughout Design (**mandatory**)
» Other accessibility tools / Complete guide to accessible web components (NEW)
» How a CSS framework can enforce accessibility
» Derek Featherstone Web Accessibility primer
» 13 days of Accessibility by Sparkbox
» Official Web Content Accessibility Guidelines documentation
» The new 2020 US Government Digital Design System that includes accessibility principles
» A very nifty tabindex enhancing primer for navigation (NEW)

Usability / UX (aka Advanced Common Sense)

» Book: **Don't make me think**, all of it. (**mandatory**)
» Jacob Nielsen's Usability 101 (**mandatory**)
» Jacob Nielsen's 10 Rules of Thumb for Usability (**mandatory**)
» If you have time, explore more of NNGroup's excellent articles, since they're the best out there.
» Usability basics from Usability.org / The Ultimate Guide to UX Research
» Making the web more inclusive and usable from Usability.com.ua
» Principles of website usability / 25 point usability checklist / Yet another checklist
» UX Design course at Google (NEW) / UX Fundamentals (NEW)
» Laws of UX (NEW) / UX Knowledge Base (NEW) / How to make sense of any mess (NEW) / List (new)
» One of the best and easiest to understand indexes of studies on usability: (NEW)
gov.co.uk and their Design Principles are great reads! Also, Nielsen Norman Group's heuristics.

I have a design. Now what? (Photoshop 101) (to be disc.)

We will now learn how to transform a Photoshop document into an HTML layout. That means you will need to grasp a basic understanding of Photoshop tools for selecting, measuring and properties, which will then help you structure your HTML and define your CSS styles.
Please note that in all these tutorials you'll find mistakes. And you'll notice them only if you've paid close attention to the standards, semantics, usability and accessibility notions presented so far. When you do, please correct them as you see fit, or ask me whether something is correct or not.
» PSD to HTML tutorial (**mandatory**)
» PSD to HTML video series part 0, part 1, part 2, part 3, part 4, part 5, part 6, part 7 (**mandatory**)
» PSD to HTML Tuts+ Video / PSD to HTML Tuts+ Text
» PSD to HTML: Code a clean business website design / Build a sleek portfolio site from scratch
Please note that we'll be doing a quick demo of how to turn a Photoshop layout into a fully-fledged HTML + CSS site during this course, in our first workshop. By the way, here's a Photoshop Shortcuts Cheat sheet.

WARNING
Photoshop will be discontinued, I'll be switching to Figma, which you can learn right here and here.

Course #5: Your final project

(weeks 8–10 + final exam)

SASS magic

CSS is powerful, but not dynamic. To make it dynamic, you need SASS.
» Official SASS guide (**mandatory**)
» Learn SASS in 20 min (**mandatory**)
» Getting started with SASS
» A List Apart: Getting started with SASS (**mandatory**)
» The beginner's guide to SASS & SASS CodeSchool tutorial

An example (S)CSS standard

» A living document describing how we aim to write all of our styles: SASS Standards (**mandatory**)

Templating basics

Until now, we've looked at static HTML and CSS projects and how to develop a working site. Now we'll take that to the next level, by exploring how to transform a static structure into a real, dynamic website, with real information stored in a database and dynamic structures for iterating, searching and navigating the site. These are all example templating engines or languages.You should read through at least a couple of them to understand the basic principles.
» Handlebars (JS) / Mustache (JS) / Angular Templating + Tutorial + Another tutorial (JS) / Smarty (PHP) / Getting started in Wordpress templating (PHP)
» http://www.hongkiat.com/blog/angularjs-tutorials-screencast/ (AngularJS) – There are links to various tutorials here. Going through them all (which, most importantly, means reading them all then taking in the examples) will insure you have some basic working knowledge of what AngularJS is and how it works.
» A comprehensive list of most web templating engines (for comparison)
» https://web.dev/learn/forms/ + https://web.dev/learn/pwa/

Example workflow standards

» GIT Guidelines / HTML Guidelines / CSS / SCSS Standards / JavaScript / ES6 Style Guides / React / JSX Style Guides

Entire websites & tutorials built from scratch using HTML, CSS and JS

- Use these ideas with extreme prejudice! :) + Project Based Learning (NEW) + Scrimba FTW
- Scrimba can be a very useful and diverse approach to learning, but it costs $21 / month. (NEW)
- A new platform offering project ideas – https://www.frontendmentor.io/ (NEW)
- https://50projects50days.com/ from Florin Ion and Brad Traversy (€10 discounted, €100 full price) (NEW) + IdeasGrab (NEW) + RealWorldExampleApps + 5 HTML/CSS/JS free projects
- COMPLETE front end tutorial: 12HR+ YouTube Coding Bootcamp 2021! by Ania Kubów (NEW)
- Several roadmaps for becoming a "complete" front end (+ back end + devops etc.) developer: WebDevSimplified Front End + WDS Backend, LearnCode Academy, Roadmap.sh, Traversy Media, this one from Front End Masters, etc. (NEW) / Web Dev for Beginners (NEW)
- Frontend Mentor – And some project ideas here (NEW) / Power.Coders bootcamp (NEW)
- Some more project ideas (that could turn into business ideas) on Y Combinator (NEW)
- Build a space travel website from a Frontend Mentor design using HTML, CSS and JavaScript.
- https://www.sololearn.com/home + Project ideas

Test your website / web app (NEW)

OK, you've created your very own web application or website, it's live, it's launched, and you'd like to figure out if you need to improve it in any way.

Luckily, there are a bunch of tools that will really help you determine if your website covers all the best practices mentioned in this document and in the broad web standards community. I rated each tool's usefulness with my own subjective ❤️ measure of usefulness, but I recommend testing your site with all of them. **Most of them are 100% free**, just like the rest of this document's resources.

CODE QUALITY

❤️❤️❤️ HTML Validator + CSS Validator
❤️❤️❤️ Dareboost
❤️❤️❤️ Yellow Lab Tools
🤍❤️❤️ i18n Validator + RSS Validator
🤍❤️❤️ DOM Monster (Chrome ext)
🤍❤️❤️ CSS Stats
🤍🤍❤️ .htaccess check
🤍🤍❤️ Sitemap Validator
🤍🤍❤️ Unused CSS check

PERFORMANCE & SPEED

❤️❤️❤️ WebPageTest
❤️❤️❤️ Lighthouse (Chrome ext)
❤️❤️❤️ Google PageSpeed Insights
🤍❤️❤️ Cloudinary Website Speed Test
🤍❤️❤️ Kraken.io Image Optimizer
🤍❤️❤️ TinyPNG Image Optimizer
🤍❤️❤️ GTMetrix
🤍❤️❤️ Accessify
🤍❤️❤️ HubSpot Website Grader
🤍🤍❤️ Pingdom
🤍🤍❤️ KeyCDN Website Speed Test
🤍🤍❤️ IMNinjas Page Speed
🤍🤍❤️ DotComTools Website Speed
🤍🤍❤️ Sucuri LoadTime Tester

SECURITY & SERVERS

❤️❤️❤️ Mozilla Observatory
❤️❤️❤️ Dataskydd Webbkoll Scanner
🤍❤️❤️ Pentest-Tools.com Free Website Scanner
🤍❤️❤️ Google CSP Evaluator
🤍❤️❤️ CSP Validator
🤍❤️❤️ Probely Security Headers
🤍❤️❤️ Sucuri SiteCheck
🤍❤️❤️ MXToolbox Email Server Checker
🤍❤️❤️ KeyCDN HTTP/2 Test
🤍🤍❤️ BuiltWith
🤍🤍❤️ SPF Record Checker
🤍🤍❤️ SSL Checker
🤍🤍❤️ Google Safe Browsing Check

SEO & SEMANTICS

❤️❤️❤️ Google Search Console
❤️❤️❤️ Pagelocity
❤️❤️❤️ Google Structured Data Search Gallery
❤️❤️❤️ Google Structured Data Tester (+old)
❤️❤️❤️ Ahrefs Free SEO Tools
❤️❤️❤️ Checkbot.io (Chrome ext)
🤍❤️❤️ Google Ads Keywords Planner
🤍❤️❤️ UberSuggest
🤍❤️❤️ SpyFu
🤍❤️❤️ MajesticSEO
🤍❤️❤️ Spotibo SEO Analyzer
🤍❤️❤️ Technical SEO Tools
🤍🤍❤️ Ryte free / Ryte Free Tools
🤍🤍❤️ List of useful Meta Tags
🤍🤍❤️ OpenAdminTools

ACCESSIBILITY

❤️❤️❤️ WebAIM Wave
❤️❤️❤️ Webhint Scanner
🤍❤️❤️ Tota11y (Chrome ext + bookmarklet)
🤍❤️❤️ A11y Project Accessibility Checklist
🤍🤍❤️ PowerMapper Accessibility Scanner
🤍🤍❤️ IBM Accessibility Requirements List
🤍🤍❤️ Textise your site

DESIGN & MOBILE

🤍❤️❤️ UX Checklist
🤍🤍❤️ Google Mobile Friendly Test

CONTENT OPTIMIZATION

❤️❤️❤️ Unbounce Landing Page Analyzer
🤍❤️❤️ WebFX Readability Test

SOCIAL PRESENCE

❤️❤️❤️ BuzzSumo
🤍❤️❤️ Facebook Sharing Debugger
🤍❤️❤️ Twitter Card Validator
🤍❤️❤️ LinkedIn Post Inspector
🤍🤍❤️Favicon Checker

Additional resources

For those of you that have reached this point and still want to know more, **I congratulate you**! That means you really like the Web, development and what it all means, and therefore you deserve to know where to get the best information about how you can become a good front end developer. Here goes:

Book links

If you've gotten this far and have wondered how you can get a hold of the digital books mentioned in this course, please **ask me** how to get the licensed archive (or buy the books!).

Must-follow, general resources

» The EveryMatrix Site Building Workshops & canalul meu RO

A list of recordings we made in the hopes to disseminate some of the technical and non-technical knowledge required to build websites, from design to programming, from architecture to marketing and beyond.

» http://alistapart.com/ - start with this article then this

A List Apart transformed many of us into great front end developers. It's one of the oldest (est. 1997) and most highly appreciated sites offering information for web professionals. It contains in-depth articles in a vast array of areas, ranging from cognitive psychology to design, from HTML techniques to JavaScript programming, from novelties in CSS styling to usability and accessibility issues, and so on. Here's a list of topics, just pick your favorite and be amazed!

» http://www.nngroup.com/

The Nielsen Norman Group is one of the best usability and user research companies in the world, offering regular reports on what makes the Web (not) usable.

» https://developer.mozilla.org/

The Mozilla Developer Network is one of the best sources of information and reference sites when it comes to HTML, CSS and JS. It's your go-to dictionary and basic information repository, use at will.

Other resources

» https://www.smashingmagazine.com/ – Web development magazine
» https://github.com/tuvtran/project-based-learning – A full list of resources for you to learn
» https://css-weekly.com/ – A weekly newsletter on CSS techniques and news
» https://webdesignledger.com/ – A resources and articles list
» https://offlinefirst.org/ – A very good list of articles related to making websites resilient
» https://www.uie.com/ – A user experience and design resource list
» https://responsivewebdesign.com/podcast/ – A (finished) podcast about RWD
» https://moz.com/beginners-guide-to-seo – An SEO primer + The Ahrefs Guide (great SEO insight)
» https://research.hackerrank.com/developer-skills/2020/ – What skills are most useful?
» https://practicaltypography.com/typography-in-ten-minutes.html – Typography primer
» https://frontendfoc.us/ – THE best newsletter with front end news and articles
» https://frontendmasters.com/courses/web-development-v2/ - Full development tutorial
» https://www.youtube.com/watch?v=0pThnRneDjw – overview of everything you need to learn
» A full history of the Web, if you're curious. Plus, a whole list of resources that are free for devs.
» https://thegymnasium.com/courses – A wide array of free courses
» https://hawkticehurst.com/mega-full-stack-resource-guide/ - Another guide similar to this.

Additional tools for your day to day work (NEW)

Checklists

» Front End checklist

@TODO (very soon)
- Photoshop to HTML/CSS: Avocode/Zeplin (+ tutoriale/exemple)
- Extensii de Chrome (WhatFont, Measure, Rulers, ColorPickers, etc)
- Plugin-uri pentru editoare (Sublime/Atom, VS Code, WebStorm/PHPStorm)

Chapters to be continued, but scroll down some more for extra content!

@TODO Rearrange like this:

Front End -
https://excessive-preface-69c.notion.site/HTML-CSS-28bc6ac713eb41af94e4324bb24db450

JavaScript -
https://excessive-preface-69c.notion.site/JavaScript-e3921343cb3944a4b4fa8235f3ca1375

@TODO Integrate https://hawkticehurst.com/mega-full-stack-resource-guide/

https://andreasbm.github.io/web-skills/

AMAZING playlist with learning paths https://www.youtube.com/playlist?list=PLz8Iz-Fnk_eTpvd49Sa77NiF8Uqq5Iykx

https://pauljerimy.com/it-career-roadmap/

Feelin' advanced, are we? Try some JavaScript!

If you've reached this far into the tutorial, you must REALLY want something more on the table, to keep things interesting and to keep those neurons firing up with new information. I commend you for the curiosity and the drive to learn more, so here's a well deserved reward. You should really start learning about programming in general, and its two pillars: Algorithmics and Best Practices (NEW). You can find out more about algorithms (in Romanian) on this excellent site: InfoArena (NEW), and also on LeetCode (NEW) and HackerRank (NEW) which have gamified ways to test your algorithms.

Crash course in ~~brain surgery~~ JavaScript

- LearnProgramming (NEW) / FreeCodeCamp Learn JavaScript - Full Course for Beginners
- JavaScript 30: build 30 things in 30 days with 30 JS tutorials (NEW)
- The modern JavaScript Tutorial at JavaScript.info + the MDN tutorials
- The Odin Project: JavaScript (NEW) & JS the right way
- How to code in Javascript at DigitalOcean (stolen from this Medium article)

JavaScript in depth

First, remember the MDN docs. There are plenty of really good resources that provide fantastic learning experiences and examples in this field, since it's one of the very popular languages to learn nowadays. Our own acadEMy on JavaScript has the full curriculum here. We'll continue with a list of resources based on this fantastic GitHub list and other findings:

- You Don't Know JS / WTF JS?! (NEW)
- Frontend Masters courses by Kyle Simpson / @mpjme's stream
- Learning JavaScript Design Patterns
- JavaScript The Good Parts
- Eloquent JavaScript by Marijn Haverbeke
- Effective JavaScript by David Herman
- Learning Advanced JavaScript
- JavaScript Allonge, the "Six" Edition
- Exploring JS / JS Algorithms (NEW)
- JavaScript Objects and Prototypes
- Professor Frisby Introduces Composable Functional JavaScript
- Functional programming in JavaScript
- Secrets of the JavaScript Ninja by John Resig, Bear Bibeault, and Josip Maras
- The Principles of OOP JavaScript
- AST Explorer / CodeWars
- JavaScript: Understanding the Weird Parts + Clean Code JS (NEW)
- Advanced JavaScript
- Egghead.IO tutorials on JS and derived languages, or on actual frameworks, libraries, etc
- Dan Abramov's GitHub for React
- Vue.JS's startup guide
- React with Redux
- Vanilla JS DOM Manipulation (NEW)
- Învăț eu, înveți și tu (Romanian) (NEW)
- FreeCodeCamp - JS algorithms + data str
- FreeCodeCamp - React, Redux, etc
- https://www.jsv9000.app/
- https://www.javascripttutorial.net/
- https://www.learn-js.org/en/
- JavaScript Foundations @ Gymnasium
- EdX JavaScript Introduction
- **JS is sexy - how to learn JS properly**
- Eloquent Javascript (free book)
- MDN introduction to JS
- Superhero JS resource index
- YouTube vids: 0, 1, 2, 3 + channel
- The right way to learn JavaScript
- AirBNB JavaScript Style guide
- Explore DOM events
- The Odin Project: Node.JS
- https://www.programiz.com/
- https://marplo.net/javascript (Română)
- JS games crash course
- https://lab.reaal.me/jsrobot/
- https://play.elevatorsaga.com/
- https://screeps.com/
- JS Cheat Sheets / Deep JavaScript
- JS Promise Guide
- Learn TypeScript for Free (Scrimba)

Everybody loves frameworks: VUE.js (NEW)

I get it, you're fed up with generic stuff and want to get on the trend everybody's in and start learning a popular JavaScript framework that will get you ahead in the job race and also be fun along the way. My personal recommendation is not React, nor Angular, but Vue. Why? Because it just makes more sense, workflow-wise, it has server side rendering as a first class citizen allowing you to serve static files to the browser then hydrate them on demand with the JavaScript front end scripts, and keep the JS and CSS at a minimum with Nuxt and Tailwind. Tailwind is opinionated and I'm not sure I agree with it completely just yet, but it does have super obvious benefits compared to Bootstrap & co. Plus, Ștefan (who gathered the materials below and whom I trust) likes it very much.

But before we get into it...

First and foremost

These two e-books will root you in the necessary ideas for a healthy development career:

1. The lean web by Chris Ferdinandi (bonus: watch this video)
2. Resilient web design by Jeremy Keith
3. This video by Briefs

...just so you don't treat every web project you see from now on as one you would solve with Vue.js.

So here goes:

Vue.js Docs

1. Guide
2. Style Guide
3. Cookbook

Nuxt.js Docs

1. Guide
2. Guide v2 (Beta)
3. API
4. Examples
5. FAQ - Common development, configuration and deployment questions

Courses

1. VueMastery Intro to Vue 3 & others@V3
2. Vue3 Time Blocking App
3. Laracasts: Learn Vue 2: Step By Step
4. Vue.js Fundamentals - VueSchool.io
5. Vue.js Components Fundamentals - VueSchool.io
6. Nuxt.js Fundamentals - VueSchool.io
7. ALL courses from VueMastery.com

Node.js

1. Node.js Best Practices

TailwindCSS

1. Docs
2. Component Examples
3. Screencasts: Designing with Tailwind CSS
4. Collection - Design with Tailwind CSS Masterclass on @eggheadio
5. Tailwind CSS Custom Forms

Enjoy your damn framework now! 😝 I still think you don't need it that much unless for very large projects with dozens of coordinated people working to build the same platform.

Finally, a comparison of frameworks:
https://insights.stackoverflow.com/trends?tags=reactjs%2Cangular%2Cvue.js%2Csvelte

Getting Hired

» The Odin Project: Getting Hired

» 36 types of jobs in IT (in Romanian) from my YouTube channel

» Everything you need to know about making your CV (in Romanian) from my YouTube

» Prepare for your technical interview by practicing on Pramp

» FreeCodeCamp - Coding interview preparation + ▶ How to Prepare for Technical Interviews

» https://github.com/jwasham/coding-interview-university +

https://github.com/yangshun/tech-interview-handbook

https://github.com/lydiahallie/javascript-questions

https://frontendmasters.com/guides/front-end-handbook/2018/practice/interview-q.html

https://techinterviewhandbook.org/

https://www.thebalancecareers.com/job-interview-questions-and-answers-2061204

https://frontendmasters.com/guides/front-end-handbook/2018/practice/interview-q.html

https://github.com/h5bp/Front-end-Developer-Interview-Questions

https://technicalinterviews.dev/

https://www.freecodecamp.org/news/ten-rules-for-negotiating-a-job-offer-ee17cccbdab6/

https://www.freecodecamp.org/news/how-not-to-bomb-your-offer-negotiation-c46bb9bc7dea/

Being a better programmer

Start with this and don't despair: https://norvig.com/21-days.html :)

» The ultimate computer science university knowledge repository: CS50 by Harvard + YouTube

» LeetCode / CodeWars (including Katas) / HackerRank (including certifications and practices)

» CheckIO coding games (TypeScript, Python)

» Elevator Saga (JavaScript) + Untrusted (JavaScript) + Screeps (a Steam game, MMO sandbox)

» TopCoder (competitive programming) / CodinGame (learn while playing)

» https://cssbattle.dev/

» OOP in: JAVA, more JAVA, Python, C#, JavaScript. Generic OOP knowledge and a bunch more courses

» ▶ Object Oriented Programming (OOP) in C++ Course + Solid principles of OOP

» Cursuri IT by eJobs (free!)

» AlgoExpert (paid)

» InfoArena (Romanian)

» https://www.programiz.com/

» https://app.codility.com/programmers/lessons/1-iterations/

» https://www.geeksforgeeks.org/

» http://codeforces.com/

» https://open.kattis.com/

» https://projecteuler.net/

» Pramp (practice interviewing)

» The Odin Project

» Math Pages (mathematics theory and exercises)

» Regular Expressions matching can be simple and fast

» Theory of computation: regular languages, context-free languages, Turing, decidability, etc.

» Data structures for text sequences

» https://db-engines.com/en/ranking

» Build better websites with Google Dev Tools

» Machine Learning course from Stanford

» Programming Paradigms by Stanford

» A single place to store all the technical documentation - DevDocs

» Learn with Google - from machine learning to widgets, from design to apps, chatbots, etc.

» Cheat sheets for everything https://www.codecademy.com/resources/cheatsheets/all
» The Cloud Resume Challenge + related article + presentation article

Others (bulk):

▶ Full Stack Web Development in the Cloud Course - Svelte, Postgres, Vercel, Gitpod
https://www.coursera.org/courses?query=full%20stack%20web%20development
https://fsharpforfunandprofit.com/fppatterns/
https://github.com/ziishaned/learn-regex
https://qmo.io/blog/ultimate-guide-to-api-design
https://hpbn.co/
https://github.com/EbookFoundation/free-programming-books
https://github.com/practical-tutorials/project-based-learning
https://programming-idioms.org/about#about-block-all-idioms
https://github.com/sdmg15/Best-websites-a-programmer-should-visit
https://github.com/minimaxir/big-list-of-naughty-strings
https://github.com/JanVanRyswyck/awesome-talks
https://github.com/trimstray/the-book-of-secret-knowledge
https://github.com/sindresorhus/awesome
https://github.com/lauragift21/awesome-learning-resources
https://github.com/ripienaar/free-for-dev
https://github.com/30-seconds/30-seconds-of-code
https://github.com/public-apis/public-apis
https://open.appacademy.io/
Spectrum programming circa 1980
A Compiler Writing Journey
Introduction to monads with Java code examples
Category Theory Illustrated
https://eev.ee/blog/2015/09/12/dark-corners-of-unicode/
https://manishearth.github.io/blog/2017/01/14/stop-ascribing-meaning-to-unicode-code-points/
A Hitchhiker's Guide to Reinventing a Prolog Machine
A History of APL in 50 Functions
Linear types can change the world!
The pitfalls of protocol design - Attempting to write a formally verified PDF parser
Haskell for Imperative Programmers
Crafting Interpreters
LLVM compiler infrastructure
Regular Expression Matching Can Be Simple And Fast (but is slow in Java, Perl, PHP, Python, Ruby, ...)
Working Draft, Standard for Programming Language C++
C++ Annotations
Learn C++
105 STL Algorithms in Less Than an Hour
Stop Teaching C
C++ Weekly With Jason Turner
Generating random numbers using C++ standard library: the problems
C++ atomics, from basic to advanced. What do they really do?
Parameter Passing in C and C++
C++ Reference
How C++ Resolves a Function Call
C++20 Coroutine: Under The Hood
Programming II (C/C++) · Stepik
Nano-coroutines to the Rescue! (Using Coroutines TS, of Course)
An introduction to SciPy
What the fuck, Python!

▶ Python Tutorial - Python for Beginners [Full Course]

The Python Tutorial

Automate the boring stuff with Python

Curs de programare în Python 3 pentru începători - Online interactiv gratuit (Romanian)

Tutoriale în Python de Marius Ciurea (Romanian)

The Best Python Books – Real Python

Programming using Python · Stepik

Web Browser Engineering by Pavel Panchekha & Chris Harrelson

The MDN Front End Development Learning Index

Learn Rust With Entirely Too Many Linked Lists

Crust of Rust: Channels

The Rust Programming Language

Rust Memory Container Cheat-sheet

The Rustonomicon

A Firehose of Rust, for busy people who know some C++

Probability Cheat Sheet

MIT Course: Theory of computation

MIT Course: Electrical Engineering and Computer Science

List of data structures

Exposing Float Point + What Every Programmer Should Know About Floating-Point Arithmetic

What Every Computer Scientist Should Know About Floating-Point Arithmetic

List of algorithms / Quick Search Algorithm

Cryptography is not magic

https://github.com/public-apis/public-apis

▶ Web Development Full Course (Front End) | HTML,CSS,JavaScript

CS61A - Structure and Interpretation of Computer Programs (introductory cs course at berkeley, hard af but you will learn a lot if you keep at it)

CS61B - Data Structures (data structure course at bekeley. Programs interact with data, you will learn how with this course. The MOST MOST MOST important course on this guide)

CS61C - Great Ideas in Computer Architecture (Broken archives, no idea when it will be fixed, will update post when it is. Teaches the inner working of a computer so that you can write optimized programs)

Then specialize for whatever you like, I suggest these

Full Stack Open (web development)

15-388 A - Practical Data Science (data science)

https://www.kaggle.com/ (data science)

CS193p - Developing Applications for iOS using SwiftUI (mobile dev)

Textbooks

Basic Mathematics - Serge Lang (teaches basic mathematics as the title says, but is proof based)

Discrete Mathematics with Applications - Susanna Epp (basically the math of computer science)

Workflow & Project management

» Agile Uprising - Agile manifesto review

» Extreme programming, a gentle introduction

Quality Assurance / Manual Testing

» A primer on Software Testing / QA, SoftwareTestingHelp and some paid alternatives & tests. (https://www.utest.com/academy seems to be free now)

» ISTQB is the basis of testing, and it has both free courses and some tests.

» Functional Testing, Test Management, Automated, Performance and Security Testing (Romanian)

» A roadmap for Quality Engineers in multiple formats including PDF

» A (future) QA roadmap from Roadmap.sh

» 10 portfolio projects for aspiring automation engineers

Digital Marketing materials

How about some SEO?

There are a zillion superb articles and resources for SEO, here are a few good places to start:

» https://ahrefs.com/seo (**mandatory**)

» https://learningseo.io/

» moz.com/beginners-guide-to-seo

» moz.com/learn/seo

» ahrefs.com/blog/learn-seo/

» SearchEngineJournal Best SEO Resources

» SearchEngineJournal Become an SEO Expert

» backlinko.com/content-study

» SEOByTheSea Google Ranking Signals

» moz.com/google-algorithm-change

» VieoDesign What are LSI keywords

» moz.com/blog/google-e-a-t

» yoast.com/wordpress-seo/

» uitest.com/analysis/

» 20years.withgoogle.com/

» Content strategy for startups

» Neil Patel's SEO Cheat Sheet

» https://moz.com/beginners-guide-to-seo – An SEO primer + The Ahrefs Blog (great SEO insight)

» Simplilearn YouTube SEO course

» https://ahrefs.com/blog/seo-for-startups/

PPC

In order for you to start doing **Google Ads for Performance Marketing / PPC**, I recommend going through Google's own tutorial and then go through this guy's tutorial.

Marketing & business strategy

» Blogging for business (a free - for now - $800 value course from Ahrefs) (**mandatory**)

» SAAS marketing vlog

» Content Marketing, a comprehensive guide from Ahrefs

» Marketing examples - a great list of strategies and tactics, plus a newsletter to go along with it

» ToolSalad - a collection of 200+ online marketing tools

Google Tag Manager for Beginners 2021

Miscellaneous

https://cxl.com/playbooks/

https://learndigital.withgoogle.com/digitalgarage/course/digital-marketing

https://learndigital.withgoogle.com/digitalunlocked

https://www.wordstream.com/learn PPC University

https://academy.hubspot.com/courses/inbound-marketing?library=true

https://www.quicksprout.com/the-beginners-guide-to-online-marketing/

https://copyblogger.com/imfsp/

https://www.coursera.org/learn/marketing-plan

https://www.edx.org/course/digital-marketing-strategy

https://www.edx.org/course/digital-strategy-and-action

https://www.linkedin.com/learning/paths/become-an-online-marketing-manager
https://ocw.mit.edu/courses/entrepreneurship/
https://www.futurelearn.com/subjects/business-and-management-courses/marketing/digital-marketing
https://blog.hubspot.com/marketing/free-online-marketing-classes

Front end performance & optimization

1. https://github.com/thedaviddias/Front-End-Performance-Checklist
2. https://www.smashingmagazine.com/2019/07/web-on-50mb-budget/

@TODO - to be continued

Challenge sites

https://type.method.ac/ - typography challenges
https://cssbattle.dev/ - CSS challenges
https://www.codingame.com/start -
Front end games and challenges - https://css-tricks.com/front-end-challenges/
Css dinner, flexbox froggy, flexbox defense
clash of code

Blockchain development

https://www.youtube.com/playlist?list=PLKAyGpypHE7dHpGjm_sW9htRkCogBW97i (Romanian)

Linux / DevOps

https://dev.to/javinpaul/5-free-courses-to-learn-linux-for-beginners-367f
▶ Linux Essentials - Beginner Crash Course (Ubuntu)
https://www.edx.org/course/introduction-to-linux
https://lwn.net/Kernel/LDD3/
https://linux-kernel-labs.github.io/refs/heads/master/index.html
https://opensource.com/article/19/4/devops-pipeline
https://codewithmosh.com/p/the-ultimate-docker-course

Java

Learn Java - Free Interactive Java Tutorial
Job Ready Java
Spring Quickstart Guide / CodingBat Java
(paid) Java EE, Spring, Spring 5, FullStack with Boot and Angular, FullStack with Boot and React

PHP & MySQL

▶ PHP & MySQL Tutorial | Learn PHP From Scratch | Full Tutorial
https://www.w3schools.com/php/default.asp +
https://www.w3schools.com/php/php_mysql_intro.asp
https://www.udemy.com/course/php-mysql-tutorial/
https://www.coursera.org/learn/web-applications-php
https://www.udemy.com/course/creating-a-simple-newsletter-signup-using-php-and-mysql/
https://www.udemy.com/course/real-time-chat-system-using-php-mysql-pdo-and-ajax/

https://www.udemy.com/course/build-crud-application-php-mysql/
https://www.educative.io/courses/learn-php-from-scratch
https://www.codecademy.com/learn/learn-php
https://www.tutorialspoint.com/php/php_and_mysql.htm
https://www.wikihow.com/Learn-PHP-and-MySQL
https://www.learn-php.org/
PHP Programming Language Tutorial - Full Course
PHP For Absolute Beginners | 6.5 Hour Course
https://www.tutorialspoint.com/php/index.htm

https://www.php.net/manual/en/book.pdo.php
https://phpdelusions.net/pdo
https://www.phptutorial.net/php-pdo/
https://www.javatpoint.com/php-pdo
PDO Crash Course (PHP)

https://bulletproofphp.dev/yes-php-is-worth-using

Laravel PHP Framework Tutorial - Full Course for Beginners (2019)
Laravel PHP Framework Tutorial - Full Course for Beginners | Build a Blog with Laravel
https://laravel.com/docs/5.1/quickstart
https://www.tutorialspoint.com/laravel/index.htm

Generic SQL & Databases

» How does a relational database work?
» Why are NoSQL databases more scalable than SQL?
https://sqlbolt.com/
https://www.masterywithsql.com/
https://www.codecademy.com/learn/learn-sql
https://www.datacamp.com/learn/sql / https://www.datacamp.com/
https://academy.zerotomastery.io/p/complete-sql-database-bootcamp-zero-to-mastery
https://web.cecs.pdx.edu/~maier/TheoryBook/TRD.html
http://webdam.inria.fr/Alice/
https://towardsdatascience.com/designing-a-relational-database-and-creating-an-entity-relationship-diagram-89c1c19320b2

NoSQL

https://www.mongodb.com/nosql-explained
https://www.mongodb.com/developer/quickstart/node-crud-tutorial/
MongoDB Crash Course
https://www.youtube.com/playlist?list=PLLAZ4kZ9dFpOFJ9JcVW9u4PlSWO-VFoao (older version)
MongoDB Full Course | MongoDB Tutorial | MongoDB Tutorial For Beginners | MongoDB | Simp...
https://www.edx.org/course/nosql-basics
https://www.coursera.org/learn/introduction-to-nosql-databases

Game Development

» Super cool introductory course with a presentation video:
How to Teach 5 Semesters of Game Design in 1 Class
» The book: Reality is Broken by Jane McGonigal

Game Development in Unity

▶ Learn Unity - Beginner's Game Development Tutorial
https://www.coursera.org/specializations/game-design-and-development
https://www.udemy.com/user/bentristem/ (paid)
https://www.udemy.com/course/introduction-to-game-development-with-unity/ (free)
https://www.udemy.com/course/unity-game-developer/
https://www.pluralsight.com/courses/introduction-game-development-unity
https://www.freecodecamp.org/news/game-development-for-beginners-unity-course/
https://learn.unity.com/

Game Development in HTML5 / JavaScript

Franks laboratory
▶ Learn JavaScript by Building 7 Games - Full Course
Visual Web Development (2021) (playlist)
Front End Web Development Projects for Beginners (playlist)
▶ JavaScript Game Development Crash Course
https://www.udemy.com/course/free-prep-for-html5-game-development/
https://www.udemy.com/course/code-your-first-game/
▶ Intro to Game Development with JavaScript - Full Tutorial
▶ JavaScript Game Development Crash Course
https://developer.ibm.com/tutorials/wa-build2dphysicsengine/

Graphics

https://www.udemy.com/course/how-to-program-games/ (paid)
https://www.udemy.com/course/create-quick-professional-2d-game-backgrounds-in-photoshop/ (paid)
https://www.udemy.com/course/the-ultimate-2d-game-character-design-animation-course/ (paid)
https://www.udemy.com/course/learn-professional-pixel-art-animation-for-games/ (paid)

3D Modelling & Animation

Tutorials — blender.org
Blender Guru
CG Fast Track
Blender Fundamentals 2.8 + https://www.youtube.com/watch?v=kes2qmijy7w + https://www.youtube.com/watch?v=hvoniP3uso8
https://www.blenderguru.com/articles/how-i-learned-blender-and-5-tips-for-you
https://cgcookie.com/course/character-animation-toolkit/
▶ Lighting and Baking Workflow: Blender Tutorial
CG Geek
https://vimeo.com/30073532
https://www.creativebloq.com/features/blender-shortcuts

Other technical aspects (NEW)

Networking, Linux, Cyber Security, Penetration Testing

Security Certification Roadmap !!!!!!!!!!!!!

▶ Become an Ethical Hacker for $0

Linux Journey: Home
CompTIA 220-1001 and 220-1002 A+ Training Course - Professor Messer IT Certification Training Courses
▶ How to Build a PC! Step-by-step
Professor Messer's CompTIA N10-007 Network+ Course
Cisco Packet Tracer - Networking Simulation Tool
TOTAL: CompTIA Network+ Certification (N10-007)
Bandit
▶ The Complete Linux for Ethical Hackers Course for 2019

» TryHackMe - cyber security training - start here: https://tryhackme.com/path/outline/beginner
» HackTheBox - start hacking / CTF Time / Pico CTF - hack by playing / Over the Wire - wargames
» Pentester Academy / PortSwigger Web Security Academy
» Offensive Security Certifications (paid) / SANS Security Certifications (paid)
» NetworkChuck - tons of free tutorials and a few paid high quality ones
» YouTube: IppSec, John Hammond, LiveOverflow, DEFCON, BlackHat
» David Bombal's videos / XSS cheat sheet / Udemy: Practical ethical hacking / Matt G's Road to CCIE
» Heath Adams' practical ethical hacking / all courses from TCM-SEC
» How to make your forms really spambot-proof / how to secure anything / zero day guide / reports
» VulnHub / OWASP Top 10 / Offensive Security Certifications / SANS Cyber Security Courses
» Linux Certification / CISCO CCNA / CompTIA Security+ / Certified Ethical Hacker
» Podcast: Darknet Diaries / BurpSuite proxy / Kali Linux / Pentest-Tools.com
» European Cyber Security Challenge / Synack / CVE.org / Hak5
https://mitre-attack.github.io/attack-navigator/
▶ CISSP Certification Course – PASS the Certified Information Security Professional Exam!
(use with care, these appear to have some viruses of sorts: https://z0mbie.dreamhosters.com/ + https://vxug.fakedoma.in/archive/VxHeaven/vx.php@id=z001.html)
https://d3fend.mitre.org/ A knowledge graph of cybersecurity countermeasures

Computer graphics & rendering

» 100 second introduction into WebGL
» Learn computer graphics from scratch: full course
» Drawing lines is hard
» Physically based rendering
» 3D modeling for Virtual Reality
» Learn Blender - video 1 + video 2 (free course)
» https://64.github.io/tonemapping/

Hosting

» For Wordpress, the best is SiteGround
» For Vue, React, Angular, etc, the best is Netlify
» For static sites, the best is GitHub Pages

Design & UX (NEW / WIP)

» What is interaction design?
» Design systems for: everyone, developers, designers, product managers
» Information Design & Visualization fundamentals
» Modern web design
» Advanced prototyping with Axure
» Prototyping digital products & websites
» Questions to ask before starting a design project

Learn Design with Figma
https://www.uxlibrary.org/
https://uxarchive.com/
https://mobbin.design/browse/ios/apps
https://www.reallygoodux.io/
https://www.checklist.design/
https://www.darkpatterns.org/
Welcome - Universal Principles of Design Video Tutorial
The School Of Design: Design
▶ How You Can Learn Design Without School
https://www.theleagueofmoveabletype.com/
https://type-scale.com/
https://utopia.fyi/blog/css-modular-scales/
https://www.smashingmagazine.com/2010/11/best-practices-of-combining-typefaces/
https://www.typewolf.com/
https://www.typewolf.com/resources
https://www.fontpair.co/
https://open-foundry.com/
https://usemodify.com/
https://uxdesign.cc/uniwidth-typefaces-for-interface-design-b6e8078dc0f7
https://seek-oss.github.io/capsize/
https://www.modularscale.com/
https://www.layoutgridcalculator.com/typographic-scale/
https://meowni.ca/font-style-matcher/
https://stylestage.dev/
https://www.frontendmentor.io/
https://cssbattle.dev/
https://www.codewars.com/
https://www.frontendpractice.com/
https://www.firsttimersonly.com/
http://www.designhistory.org/index.html
http://www.designishistory.com/
https://www.ucreative.com/design/
https://www.smashingmagazine.com/category/design/
https://learnui.design/
Gareth David Studio
https://creativemarket.com/blog/10-design-ted-talks-you-should-watch

Copywriting & Content Writing (new)

Ahrefs Academy: Blogging for business
How to write inclusive, accessible digital products | by Nick DiLallo
Speak Human
Good Copy · Email copy from great companies
UX Writing Resource Library - Home
Really Good Emails
https://learndigital.withgoogle.com/atelieruldigital
Book: Ogilvy on Advertising in the Digital Age
Book: Cialdini - Influence, the psychology of persuasion (new and expanded)
https://copyblogger.com/
https://copyblogger.com/imfsp/
https://contentmarketinginstitute.com/

Entrepreneurship & business materials (new)

» https://www.startupschool.org/

» YCombinator - News + YouTube + Website

» https://learn.saylor.org/

» Running a better business the Basecamp way

» A fantastic way of storing files and creating backups: Dropbox

» A great newsletter service: ConvertKit

» A great streaming service that multi-streams to YouTube, Twitch, Facebook, etc: StreamLabs

» A great YouTube plugin to help your channel grow: TubeBuddy

» Actually pragmatic and easy to implement Product Lessons you need to learn now

Learn English (from Romanian)

1. https://www.britishcouncil.ro/engleza/invata-online/gratis
2. https://www.duolingo.com/ mai exact https://ro.duolingo.com/course/en/ro/%C3%8Enva%C8%9B%C4%83-englez%C4%83
3. https://www.lingohut.com/ro/l1/%C3%AEnva%C8%9B%C4%83-limba-englez%C4%83
4. mmmEnglish

Final life advice

1. How to speak: an MIT lecture
2. How to learn more efficiently: study less, study smart + learning how to learn + Huberman
3. How to sleep: Toolkit for Sleep - Huberman Lab
4. Two minute papers - a YouTube channel with a mission to make research papers digestible
5. Draw a map of your past, evaluate your present and plan your future to win at life
6. How to ask questions the smart way + Don't ask to ask, just ask!
7. Time management: Defeating busy
8. Justice - Moral Philosophy course from Harvard
9. Physics course from MIT
10. Quantum Mechanical view of Reality by Richard Feynman
11. Crash Course in World History by John Green
12. Introduction to Economics by Marginal Revolution University
13. Nonlinear Dynamics and Chaos by Cornell University
14. A bunch of courses in Romanian, from Universitatea Politehnică București
15. https://www.imdb.com/title/tt3322570/ a series on brain hacking
16. https://atelierul.digital/ useful resources (in 🇷🇴 Romanian)

aștept sugestii pe YouTube:

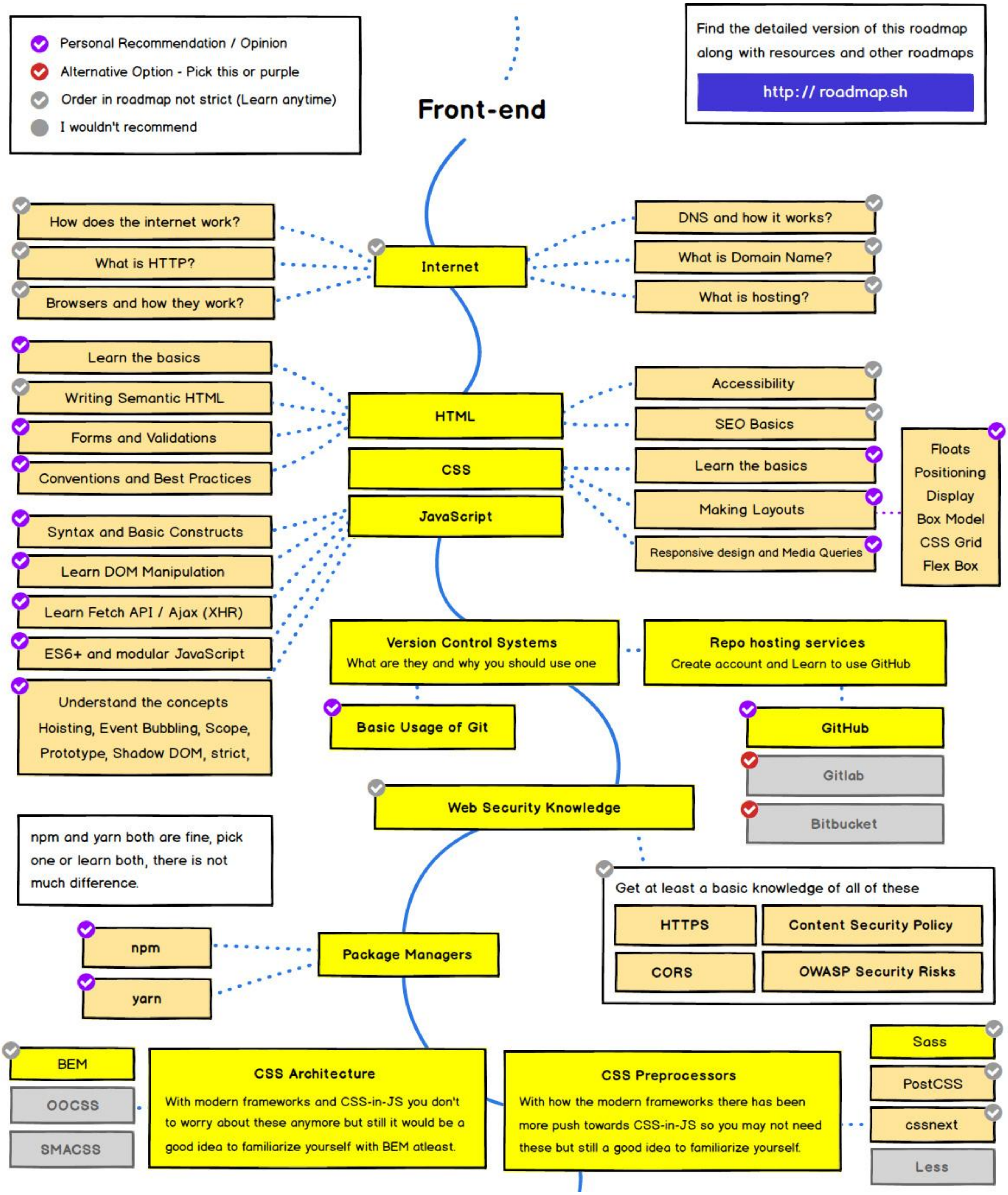
Shameless self promotion - My YouTube

Dacă te tentează o carieră în domeniul IT, mi-am făcut recent canal de YouTube în care vorbesc despre ce-ar trebui să faci ca să-ți sporești șansele să înveți ce trebuie, să te descurci singur/ă, să fii autodidact/ă și să ai posibilitatea să te angajezi în domeniu. Dacă sună bine, înscrie-te la canal, dând click pe link-ul ăsta: https://www.youtube.com/c/ViorelMocanu?sub_confirmation=1

Succes în carieră!

An overview of the paths in Front End Development

The source, and a lot of tutorial links, can be found here (2018 edition) and an updated one for 2020 can be found here, with the actual source of the graph being at https://roadmap.sh/ + alternative here. RPG variant. Non-visual but super comprehensive.



- ✓ Personal Recommendation / Opinion
- ✓ Alternative Option - Pick this or purple
- ✓ Order in roadmap not strict (Learn anytime)
- ● I wouldn't recommend

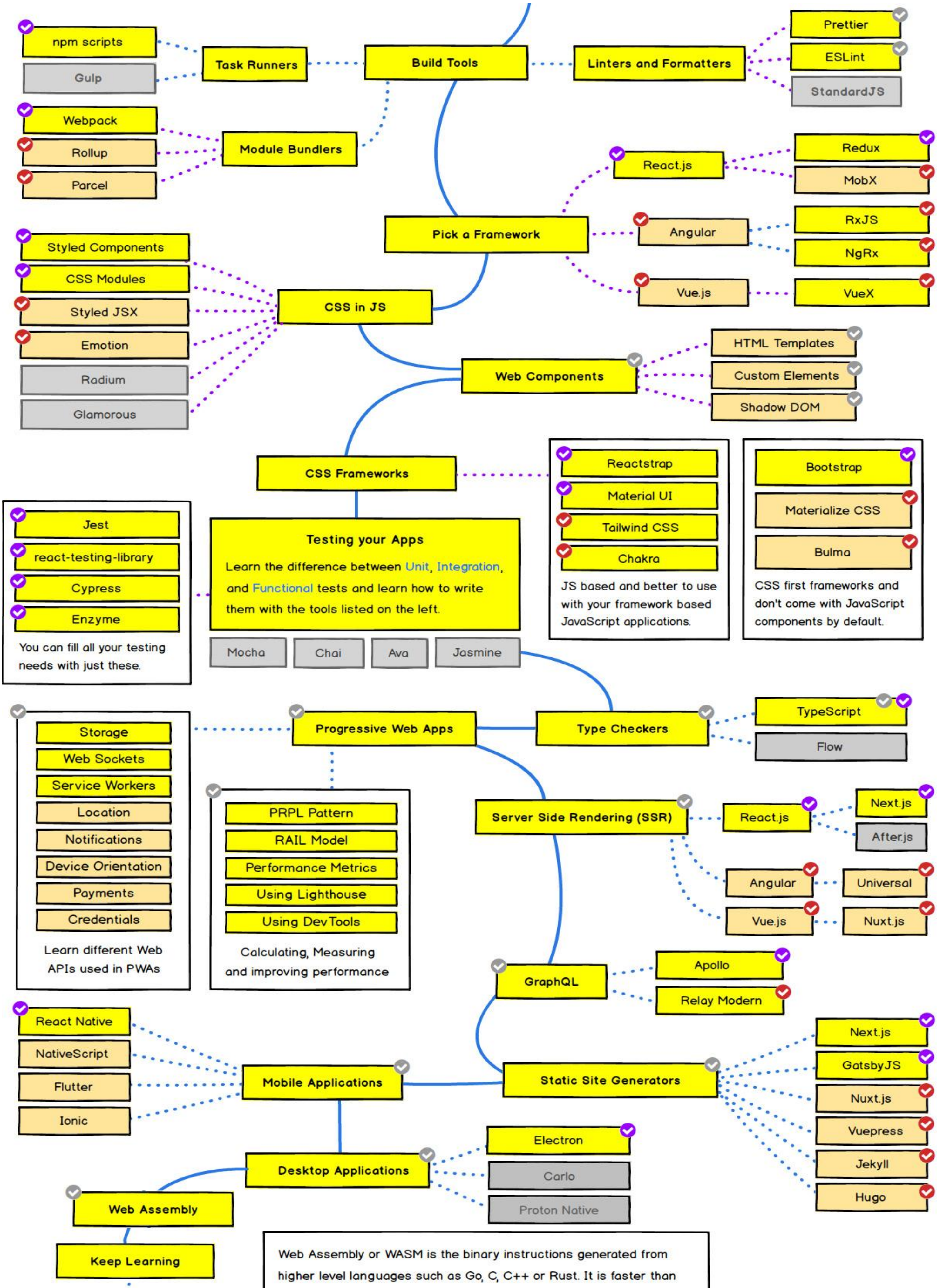
Find the detailed version of this roadmap along with resources and other roadmaps http:// roadmap.sh

npm and yarn both are fine, pick one or learn both, there is not much difference.

Get at least a basic knowledge of all of these

CSS Architecture: With modern frameworks and CSS-in-JS you don't to worry about these anymore but still it would be a good idea to familiarize yourself with BEM atleast.

CSS Preprocessors: With how the modern frameworks there has been more push towards CSS-in-JS so you may not need these but still a good idea to familiarize yourself.



Build Tools

Task Runners
- npm scripts
- Gulp

Linters and Formatters
- Prettier
- ESLint
- StandardJS

Module Bundlers
- Webpack
- Rollup
- Parcel

Pick a Framework

React.js
- Redux
- MobX

Angular
- RxJS
- NgRx

Vue.js
- VueX

CSS in JS
- Styled Components
- CSS Modules
- Styled JSX
- Emotion
- Radium
- Glamorous

Web Components
- HTML Templates
- Custom Elements
- Shadow DOM

CSS Frameworks

- Reactstrap
- Material UI
- Tailwind CSS
- Chakra

JS based and better to use with your framework based JavaScript applications.

- Bootstrap
- Materialize CSS
- Bulma

CSS first frameworks and don't come with JavaScript components by default.

Testing your Apps

Learn the difference between Unit, Integration, and Functional tests and learn how to write them with the tools listed on the left.

- Jest
- react-testing-library
- Cypress
- Enzyme

You can fill all your testing needs with just these.

Mocha Chai Ava Jasmine

Type Checkers
- TypeScript
- Flow

Progressive Web Apps

- Storage
- Web Sockets
- Service Workers
- Location
- Notifications
- Device Orientation
- Payments
- Credentials

Learn different Web APIs used in PWAs

- PRPL Pattern
- RAIL Model
- Performance Metrics
- Using Lighthouse
- Using DevTools

Calculating, Measuring and improving performance

Server Side Rendering (SSR)

React.js
- Next.js
- After.js

Angular
- Universal

Vue.js
- Nuxt.js

GraphQL
- Apollo
- Relay Modern

Static Site Generators
- Next.js
- GatsbyJS
- Nuxt.js
- Vuepress
- Jekyll
- Hugo

Mobile Applications
- React Native
- NativeScript
- Flutter
- Ionic

Desktop Applications
- Electron
- Carlo
- Proton Native

Web Assembly

Keep Learning

Web Assembly or WASM is the binary instructions generated from higher level languages such as Go, C, C++ or Rust. It is faster than JavaScript and WASM 1.0 has already shipped in the major browsers. W3C accepted it as an official standard at the end of 2019. It will still take quite some time to go mainstream IMHO - mentioning it here for the sake of brevity.