Developer Roadmap Frontend

Early Access

This SkillPack is geared toward people just starting to learn to code. It will get you started with exactly what you need and walk you through the resources you need for a job and in what order. It won't have you thinking "When would I use this in real life?" This is crafted to use what's available, but skip the pointless stuff. This pack follows an 80/20 rule, meaning - you only use about 20% of what's out there, 80% of the time. If you follow along in the roadmap, you'll see that there are multiple options for most steps.

We include the most popular sources for learning. Some of them are free, and some of them are paid (but with free trials). You're free to choose if you want to do them. Each core skill is structured so that you understand what it is and why you need it, followed by the curriculum.

This will continue to be updated each month.

Text Editors / IDE

What it is: Text Editors are simple note-like taking applications that are typically lightweight and modular, meaning you can extend it's functionality with addons. IDEs (Integrated Development Environment) come with more functionality baked in. They can be slower, and have many more options that can be confusing if you're just starting out. We recommend sticking with a text editor.

Why You need it: You can code in a notepad however this can get tedious, and confusing if you break the syntax of the code. Text Editors / IDEs can highlight what is wrong with your code, and even offer auto complete options - reducing the amount you have to type while maintaining the integrity of the code.

Core Concepts:

Emmet - A fundamental core concept to editing in any text editor that will save you time. The shortcuts require a commitment to memory at first but will change how you code. (Read More)

Resources -
https://code.visualstudio.com/ - A light and popular option, that is also free.
https://www.jetbrains.com/webstorm/ This resource is free for **one year** with a .edu email address. It also has a 30 day trial.

Other Text Editors -
https://www.sublimetext.com/
https://atom.io/

Online Editors - (For examples and premade projects)
https://codepen.io/
https://codesandbox.io/

HTML5

What it is:
HTML5 is the skeleton that holds the internet pages together.

Why You need it:
Manipulating HTML5 with CSS3 and Javascript is an essential role of a Front End developer. This is 'known as manipulating the DOM'.

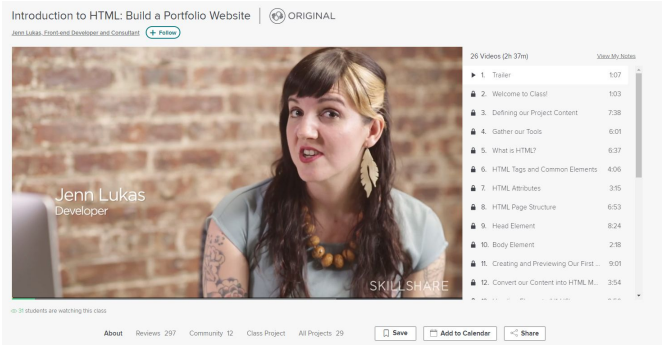
Core Concepts:

There are 150+ HTML5 elements but not all over them are used all of the time. Here is a list of some of the most common elements.

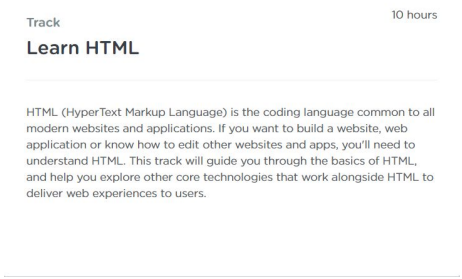
<header><footer><p><a><section><img><h1>

Underwhelming? We know. Just inspect the page and look for yourself.

Resources -
Free Code Camp - This is one of the most popular sites to learn HTML5 for free however; there is no video. Complete this section.
SkillShare - This is a free course, but there is also a two month free trial for paid.



Recommended Paid Resources -
Team Treehouse -



Semantic HTML

What it is:
Semantic HTML or semantic markup is HTML that introduces meaning to the web page rather than just presentation. For example, a <p> tag indicates that the enclosed text is a paragraph

Why You need it:
The benefit of writing semantic HTML stems from what should be the driving goal of any web page— the desire to communicate. By adding semantic tags to your document, you provide additional information about that document, which aids in communication. Specifically, semantic tags make it clear to the browser what the meaning of a page and its content. This is a skill many people miss, however it is vital to know.

Resources -
Pluralsight has a course and this is one of the only **well reviewed** 'courses' on semantic HTML. However; there are some other resources where I think reading should be enough.

Accessibility

What it is:
In short - The ability to develop applications and websites around users with disabilities. This is a great read.

Why You need it:
This is probably the most hidden skill front end developers miss. This skill, in addition to semantic HTML, can take your interview to the next level. This is a required skill for most government jobs, or public organizations that have users of all types.

Resources -
This is straight to the point, and for this purpose the HTML section should enough. However; there is more advanced documentation here.

Freecode Camp also has a course.

Team Treehouse has a great course here

CSS3

What it is:
In short - this is the styling of the page.

HTML and CSS3 - Combined make beautiful static websites. For inspiration look at HTML5up.net

There are a number of ways to use CSS3. The most common application is the use of media queries for making websites responsive. However these have been built into their own libraries the most popular being bootstrap and CSS. There are hundreds of CSS tags used but as with html there are a few used most commonly.

Why You need it:
CSS controls the look and feel of the page. With CSS you can add flair and create sleek and responsive websites. There are frameworks and libraries built off of this that we will discuss

below. If you are curious about what some of the greatest websites in the world look like check out Awwwards. It's a site that gathers the most modern looking sites.

Core Concepts:

The box model - This is the understanding of what elements look like in regards to their borders, margins, and padding. We been asked this in almost every front end developer interview. Phrased as "Please describe the box model" (Read More)

Resources -
The Ultimate Guide to learning CSS
Free Code Camp
Codecademy
CSS Tricks

CSS Grid

What it is:
CSS Grid Layout is the most powerful layout system available in CSS. It is a 2-dimensional system, meaning it can handle both columns and rows, unlike flexbox which is largely a 1-dimensional system. You work with Grid Layout by applying CSS rules both to a parent element (which becomes the Grid Container) and to that elements children (which become Grid Items).

Why You need it:
Resources -
CSS-Tricks Complete Guide
CSS Grid Practice

Flexbox

What it is:
Why You need it:
Recommended Free Resources -
Free Code Camp
Recommended Paid Resources -

Material Design

What it is:
Why You need it:
Recommended Free Resources -
Free Code Camp
Recommended Paid Resources -

Bootstrap

What it is:
A staple of the internet - once you see it, you can't unsee it. Bootstrap is essentially a list of media queries built by hand. Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Why You need it:
This is one of the quickest ways to learn how to make a website mobile friendly, or "responsive". Meaning that it will change it's display to fit almost all devices and screen types. Most websites use bootstrap or CSS Grid which we will get to below.

Resources -

Official Website

Boilerplate

What it is:
Boilerplate is prebuilt code that allows you start with some structure and build on top of it. Very rarely do developers create apps entirely from scratch anymore. These not only save time with building your app but also by reducing user introduced bugs. These are also a great way to reverse engineer how websites / webapps are being created. Popular for creating a portfolio this way and then repurposing it for your own use.

Why You need it:
Save time to build an app for a client. Save time on building an app for a job interview. Save time on building….you get it. This is here to get you up and running in a flash. Use this when you can. No need to reinvent the wheel.

Resources -
HTML5 Starter Kit
Premade Mobile Friendly Sites

JavaScript

What it is: JavaScript is a scripting language which is used for creating web pages. It's a browser interpreted (client side) language. It is used when a webpage is to be made dynamic.

Why You need it:
It allows you to implement complex things on web pages. Every time a web page does more than just sit there and display static information for you to look at—displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, or more—you can bet that JavaScript is probably involved.

Paid Resources

Team Treehouse - A developer specific platform with a monthly payment plan geared towards getting you job ready.

Pluralsight - A more career oriented program.

Skillshare - Udemy but with a monthly plan.

Free Resources

- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/First_steps
- https://www.udacity.com/course/intro-to-javascript--ud803
- https://www.w3schools.com/js/js_intro.asp
- https://www.codecademy.com/learn/introduction-to-javascript

JQuery

What it is: As the motto says "write less, do more"

Why You need it:
Recommended Free Resources -
Free Code Camp
Recommended Paid Resources -

ReactJS

What it is:
React is a declarative, efficient, and flexible JavaScript library for building user interfaces. It lets you compose complex UIs from small and isolated pieces of code called “components”. Don’t

Why You need it:
This is one of the most popular front end libraries right now. Many state of the art apps are being built on this.

Recommended Paid Resources -

Tyler Mcginnis - This is hands down the best place to learn react online in terms of courses. All of their courses are guaranteed to be up to date.

Recommended Free Resources -

Free Code Camp - A decent place to learn react, although the tutorials can be outdated fairly frequently.

Git + Version Control

What it is:
Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later. For the examples in this book, you will use software source code as the files being version controlled, though in reality you can do this with nearly any type of file on a computer.

Why You need it:
If you're going to be working on a shared codebase, or want to maintain a history of the code you've changed then you'll need a VCS. You can track when bugs were introduced by reverting to check points (commits). You can also work on branches. Branches are the concept of working on parallel to the code base with 'your own version'. That way you can make changes to the code without affecting the main code branch(This is usually known as the development or production branch). Once you're complete with task you can then merge your work into the main branch of the application.

Resources -
My course
Cheat sheet
Tutorial

Dev Tools

What it is:
Dev tools are dedicated tools built into browsers to help you debug and look at all of the requests that are being processed. You can look at everything that loads on the front end. This tool will become your best friend. You can also write javascript in the built in javascript to test scripts, or debug code.

Why You need it:
This is essential to solve bugs, modify the CSS in real time to see what is overriding your current CSS. Remove or change attributes. Use the audit to test how fast or slow a
Resources -
Free Udemy Course

Practice Projects

Practice projects are a good way to stay up to date, learn quickly, and build a strong portfolio towards that first job. Practice projects can be as small as a console app, or as big as a full facebook clone. They're meant to take you from step 1 to the end of the development cycle, over and over, until it's second nature.

Here is a video on 100 project ideas: https://www.youtube.com/watch?v=vShRGuweVRY