Team Treehouse Front End Techdegree Curriculum

The Front End Web Development Techdegree is meant to train you in HTML, CSS and JavaScript on the client side, which means in the browser rather than on a server. So please avoid submitting any projects that rely on a server-side technology like PHP or Ruby on Rails, or that need to be supplied by a server in order to function.

Unit 1: My Personal Profile Page

Project Description: Customize a personal online profile by adding graphics, customizing text, and improving the look of a web page using Cascading Style Sheets, the formatting language of the web. Share your finished project on GitHub, a website used by teams of programmers to share and work on programming code.

Project Overview

If you've completed the online profile project, created a GitHub account and uploaded your project files to a GitHub repository, you're ready to submit your project for review. Before you submit your project, be sure to review "How you'll be graded" carefully to check if your project meets the requirements needed to get a passing grade. If you haven't completed (or started) the project, follow the instructions below which will guide you through the steps required to build your online profile page.

For your first project, you'll practice web design skills by customizing a web page to create a personal profile. You'll modify the code for a basic web page by adding graphics, custom text, and a stylish design. This is a great way for you to practice HTML and CSS skills. It also gives you a web page you can use as a personal online calling card to advertise your experience, skills, and goals, and to provide links to your social media accounts on Twitter, LinkedIn and GitHub. You'll also practice using GitHub, an important tool used by millions of developers to share code and work collaboratively on programming projects. Creating and using a GitHub account is also a great way to share your work with potential employers.

List of courses and workshops you need to complete in order to do the project:

***Note**: Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: ***Introducing the Personal Profile Project***

2. <u>Course</u>: ***Introduction to HTML and CSS***

3. Instruction: ***Planning Your First Project***

4. Workshop: **Slack for the Techdegree**

5. Extra Instruction: ***3 Ways to build a Habit of Learning***

6. Course: **HTML Basics**

7. Instruction: ***Practice HTML Basics***

8. Workshop: ***Introducing the VS Code Text Editor***

9. Instruction: ***Customize Your Profile Page***

10. (Create a Github account if you don't have one)

11. 12-minute Workshop: ***Share Your Techdegree Projects with Github Desktop***

12. Extra Instruction***: Reusing Code in a Techdegree Project***

13. Instruction: ***Complete and share Your Profile Page***

14. Instruction: ***Overview of Project 1: Personal Profile Page***

15. Start the Project: My Personal Profile Page

Project 1 Resources

Github Desktop: https://desktop.github.com/

Visual Studio Code: https://code.visualstudio.com/

Slack: https://slack.com/

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

Validation Errors and how to fix them: https://line25.com/articles/10-common-validation-errors-and-how-to-fix-them

Picresize: https://picresize.com/

Chrome DevTools, inspect and edit pages/styles: https://developers.google.com/web/tools/chrome-devtools/inspect-styles?hl=en

Edit styles: https://developers.google.com/web/tools/chrome-devtools/inspect-styles/edit-styles

Edit the DOM: https://developers.google.com/web/tools/chrome-devtools/inspect-styles/edit-dom

Unit 2: Mobile-first Responsive Layout

Designing web pages that look and function well on multiple screen sizes is an essential skill for a web developer. Using HTML, CSS, and responsive design, you'll create a mobile-first web page with a layout that adjusts to fit mobile phones, tablets, and desktop displays.

Project Overview

In this project, you'll build a responsive, mobile-first layout using HTML and CSS. The layout should demonstrate an understanding of responsive design by adjusting to accommodate small, medium, and large screen sizes. You will write CSS to style the page for a small mobile device first. Then, using min-width media queries, you'll add breakpoints to adjust the layout for wider tablet and desktop screens.

NOTE: The Front End Web Development Techdegree is meant to train you in HTML, CSS, and JavaScript, and let you practice and show your mastery of these fundamental building blocks of the web. Because of that, please avoid using frameworks like Bootstrap, Foundation, Skeleton, and so on for this project. Even though you may end up using frameworks like these professionally, you still need to know and be able to implement designs with your own knowledge of HTML, CSS, and JavaScript. In addition, please avoid submitting any projects that rely on a server-side technology like PHP or Ruby on Rails.

List of courses and workshops you need to complete in order to do the project:

Note: Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.

1. Instruction: ***Student Success Story: Rachel***

2. Instruction: ***Introducing the Responsive Layout Project***

3. Course***: CSS Basics***

4. Optional Course***: Linking to Sections of a Web Page***

5. Optional Workshop***: Build a Responsive Navigation with Flexbox***

6. Instruction***: Build a Learning Mindset***

7. 35-minute CSS Workshop***: Debugging CSS with Chrome DevTools***

8. Course: ***CSS Layout Basics***

9. Instruction***: Practice CSS Basics***

10. Instruction***: Overview of Project 2: Responsive Layout***

11. Start the Project: Mobile-first Responsive Layout

Project 2 Resources

Configuring the Viewport: https://web.dev/responsive-web-design-basics/#set-the-viewport

Getting Started with Google Fonts: https://developers.google.com/fonts/docs/getting_started?hl=en

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

Unit 3: An Online Registration Form

Web forms appear everywhere online: forms allow users to order books, sign up for websites, and post to Facebook. This project challenges you to build a responsive, mobile-first registration form using a variety of HTML form elements.

Project Overview

In this project, you'll build a responsive, mobile-friendly registration form using a wide variety of HTML form input types and attributes. Using the supplied mockup files, you'll build a mobile and desktop version of the form using media queries, and a "mobile-first" approach.

List of courses and workshops you need to complete in order to do the project:

Note: Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.

1. Instruction: **Introducing the Registration Form Project**

2. 157-minute Course: **HTML Forms**

3. 166-minute Course: **CSS Selectors**

4. Instruction: **CSS Selector Reference**

5. Instruction: **Practice CSS Selectors**

6. Course: **CSS Flexbox Layout**

7. Instruction: **Overview of Project 3: Online Registration Form**

8. *Start the Project*: An Online Registration Form

Project 3 Resources

My First HTML Form: https://developer.mozilla.org/en-US/docs/Learn/Forms/Your_first_form

Configuring the Viewport: https://web.dev/responsive-web-design-basics/#set-the-viewport

External link: https://www.w3.org/TR/WCAG20-TECHS/H44.html#H44-examples

Formatting form placeholder text: https://css-tricks.com/almanac/selectors/p/placeholder/

The ':focus' pseudo-class: https://tympanus.net/codrops/css_reference/focus/

Getting Started with Google Fonts: https://developers.google.com/fonts/docs/getting_started?hl=en

Google Font: Merriweather: https://fonts.google.com/specimen/Merriweather

CSS-TRICKS Form Validation UX in HTML and CSS: https://css-tricks.com/form-validation-ux-html-css/#article-header-id-1

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

Unit 4: Web Style Guide

Sass is an important tool in a modern Front End Web Developer's toolbox. It's used by many developers to make styling web pages with CSS easier and faster. Create a style guide that can act as your own personal and custom Bootstrap that you can drop into any of your projects to speed up styling, layout and development in general.

Project Overview

In this project, we've provided completed index.html and styles.css files. You will be responsible for converting the CSS into Sass by splitting the code into several Sass partial files. You will also look for repeated values (length units, colors, etc.) throughout the CSS and store them in Sass variables. After completing the project, you'll have a useful Sass micro-framework to quickly prototype other websites.

List of courses and workshops you need to complete in order to do the project:

Note: *Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: ***Use Peer Review to Push Yourself Forward***

2. Instruction: ***Introducing the Style Guide Project***

3. 112-minute course*: **Introduction to the Terminal***

4. 186-minute course*: **Introduction to Git***

5. 185-minute Course*: **CSS Transitions and Transforms***

6. 247-minute Course*: **Sass Basics***

7. Workshop*: **Process Sass with Scout-App***

8. Instruction*: Web Style Guide Study Guide*

9. Start the Project: Web Style Guide

Project 4 Resources

A List Apart: Creating Style Guides: https://alistapart.com/article/creating-style-guides/

Design Modo: How To Create a Web Design: https://designmodo.com/create-style-guides/

Website Style Guide Resources: http://styleguides.io/

Unit 5: An Interactive Photo Gallery

Interactive image galleries are a common feature of many websites, from photo sites to e-commerce applications. Use HTML, CSS and the popular programming language JavaScript to create an interactive, searchable gallery of photos.

Project Overview

In this project, you will create an interactive photo gallery using JavaScript and jQuery. Thumbnails and photos will be provided with descriptions. At the top of the page, you'll have a search area where photos will hide and show depending on user input. When the user clicks on a thumbnail, the photo will display in a lightbox. There should be a back and previous arrows to cycle through photos.

NOTE: The Front End Web Development Techdegree is meant to train you in HTML, CSS, and JavaScript, and let you practice and show your mastery of these fundamental building blocks of the web. Because of that, please avoid using frameworks like Bootstrap, Foundation, Skeleton, and so on for this project. Even though you may end up using frameworks like these professionally, you still need to know and be able to implement designs with your own knowledge of HTML, CSS, and JavaScript. In addition, please avoid submitting any projects that rely on a server-side technology like PHP or Ruby on Rails.

List of courses and workshops you need to complete in order to do the project:

Note: Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.

1. Instruction: *Build Job-ready Skills With Peer Review*

2. Instruction*: Introducing the Photo Gallery Project*

3. 45-minute Course*: The Landscape of JavaScript*

4. 70-minute Course*: Introducing JavaScript*

5. Workshop*: Plan Ahead with Pseudocode*

Project 5 Resources

Popular jQuery Plugins: ???

jQuery API Change Event: https://api.jquery.com/change/

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

JSHint: a tool that helps to detect errors and potential problems in your JavaScript code.
https://jshint.com/

Unit 6: Game Show App

In this project, you'll create a browser version of "Wheel of Success", a word guessing game. You'll use Javascript to come up with a random phrase that players will try to guess by entering different letters into the program.

Project Overview

In this project, you'll create a browser version of "Wheel of Success", a word guessing game where players will click letters from an onscreen keyboard to try to guess a random phrase. Using Javascript, you'll create an array of phrases and write functions to choose a random phrase from that array, split the phrase into letters, and put those letters onto the game board. Each time the player guesses a letter, you'll need to compare the letter the player has chosen with the random phrase. If the letter is in the phrase, you'll update the game board with the chosen letters.

A player can keep choosing letters until they make five incorrect guesses. If the letter they chose isn't in the phrase, you'll remove one of the player's 5 guesses.

If the player completes the phrase before they run out of guesses, a winning screen will display. If the player guesses incorrectly 5 times, a losing screen will display.

A player can guess a letter only once. After they've guessed a letter, your programming will need to disable that letter.

List of courses and workshops you need to complete in order to do the project:

Note: *Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: **Use Peer Review to Learn More**

2. Instruction: **Introducing the Game Show Project**

3. 123-minute Course: **JavaScript Arrays**

4. 67-minute Course: **JavaScript Objects**

5. Workshop: **Translating Pseudocode to JavaScript Code**

6. 225-minute Course: **JavaScript and the DOM**

7. Workshop: **Practice JavaScript and the DOM**

8. 39-minute Workshop: **Debugging JavaScript in the Browser**

9. 25-minute Workshop: **Exploring JavaScript Conditionals**

10. 114-minute Course: **DOM Scripting By Example**

11. Start the Project: Game Show App

Project 6 Resources

MDN Documentation: https://developer.mozilla.org/en-US/docs/Web/HTML/Element/button#attr-disabled

Courses:

- JavaScript Loops, Arrays and Objects

- JavaScript and the DOM

- DOM Scripting By Example

Unit 7: WebApp Dashboard

Build an interactive dashboard for a web application using advanced web techniques including SVG graphics and JavaScript programming. The project involves creating tables, charts, graphics and other user interface components in a manner that promotes interactivity and usability.

Project Overview

Many websites do more than just give you information. Sites like GitHub, Zillow, Mint and Treehouse let users do things. They act like programs you run on your computer. These web applications, often include pages for looking at your profile, what you've done in the week or what you need to get done. These "dashboards" act like your control panel for controlling the web app.

In this project, you'll take a mockup and a few icons and build a beautiful, web dashboard complete with JavaScript-driven charts and graphs. You only need to take the design and create the HTML, CSS and JavaScript functionality for this one page -- you don't need to create other pages, or build any backend or database functionality.

List of courses and workshops you need to complete in order to do the project:

Note: *Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: ***Introducing the Web Dashboard Project***

2. <u>46-minute Course</u>: ***SVG Basics***

3. <u>85-minute Course</u>: ***Animating SVG with CSS***

4. Workshop: ***SVG Workflow and Tools***

5. Workshop: ***Using Local Storage with JavaScript***

6. <u>111-minute Course</u>: ***CSS Grid Layout***

7. Instruction: ***Practice CSS Grid Layout***

8. Start the Project: WebApp Dashboard

Project 7 Resources

Chart.js : https://www.chartjs.org/

D3.js (a JavaScript library for manipulating documents based on data) : https://d3js.org/

Github Cheat Sheet: https://github.github.com/training-kit/downloads/github-git-cheat-sheet.pdf ← Definitely read this

CSS calc() Function: ???

CSS Toggle Switch: https://ghinda.net/css-toggle-switch/

Random Avatar Faces: https://randomuser.me/photos

JSHint: a tool that helps to detect errors and potential problems in your JavaScript code: https://jshint.com/

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

Unit 8: Use an API to Create an Employee Directory

Many sites — Twitter, Facebook, IMDB, and Wikipedia to name a few — offer a vast sea of data that you can access and display on your own web pages. Using JavaScript, you'll create an employee directory by communicating with a third-party API (Application Programming Interface).

Project Overview

Communicating with APIs allows you to work with microservices and with vast databases to build useful tools and relevant information quickly and easily. You can build utilities, games, infographics, and more. You can also integrate, display, and analyze social media and large data sets without having to create and curate them yourself.

Awesome Startup is a distributed company with employees working all over the world. They need a smart way to for employees to share contact information with each other. In this project, you'll use the Random User Generator API (https://randomuser.me/) to grab information for 12 random "employees," and use that data to build a prototype for an Awesome Startup employee directory. You'll request a JSON object from the API using fetch and parse the data so that 12 employees are listed in a grid with their thumbnail image, full name, email, and location. Clicking the employee's image or name will open a modal window with more detailed information, such as the employee's birthday and address.

List of courses and workshops you need to complete in order to do the project:

Note: *Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: ***Introducing the Public API Project***

2. 112-minute Course***: Object-Oriented JavaScript***

3. Instruction*: Practice Object-Oriented JavaScript*

4. 60-minute Course*: Callback Functions in JavaScript*

5. 149-minute Course*: AJAX Basics*

6. 115-minute Course*: Asynchronous Programming with JavaScript*

7. 44-minute Workshop*: Working with the Fetch API*

8. 100-minute Course*: JavaScript Array Iteration Methods*

9. Instruction*: Practice Array Iteration Methods (such as forEach in JavaScript)*

10. Start the Project: Use an API to Create an Employee Directory

Project 8 Resources

Project Study Guide: https://s3.amazonaws.com/treehouse-techdegree/fewd/study-guides/Employee+Directory+Study+Guide.pdf

The Random User Generator API: https://randomuser.me/

Random User Generator API Documentation: https://randomuser.me/documentation

HTML/CSS3 Image Thumbnail Gallery with Lightbox Effect: https://blog.teamtreehouse.com/html5css3-image-thumbnail-gallery-with-lightbox-effect

Blog: https://blog.teamtreehouse.com/tap-power-api

Developing over the YouTube API with JSON: https://blog.teamtreehouse.com/developing-over-the-youtube-api-with-json

Unit 9: Capstone Portfolio

The final capstone project for the Front End Web Development Techdegree Program. Show off your skill and expertise in the tools and techniques you've learned in the Techdegree by building a professional portfolio to showcase your work.

Project Overview

In this project, you'll build an online portfolio to showcase the work you've created as part of this program and any projects you've built on your own. This is your chance to show the world (and potential employers) the work you've done. In fact, the portfolio site itself is a great way to show what you can do. Bring all of your talents with HTML, CSS, and JavaScript together to create a fun and interactive online portfolio.

You'll host the portfolio site on the web either using a traditional web hosting company or use free GitHub Pages hosting.

We aren't supplying any files for this project: what it looks like and how it works is up to you. You can use a framework like Twitter Bootstrap or Zurb Foundation, or simply build the HTML and CSS from scratch. The design is up to you, but see the Resources section for our courses on using frameworks and example portfolio sites you can use for inspiration.

NOTE: Please avoid submitting any projects that rely on a server-side technology like PHP or Ruby on Rails.

List of courses and workshops you need to complete in order to do the project:

Note: *Some of the courses/workshops/short instructional videos listed below won't be available to you unless you enroll in the Techdegree program.*

1. Instruction: **Building your online portfolio**
2. Course: **Bootstrap 4 Basics**
3. Workshop: **Hosting a Website with Github Pages**
4. Start the Project: Capstone Portfolio

Project 9 Resources

Using the viewport meta tag to control layout on mobile browsers: https://developer.mozilla.org/en-US/docs/Mozilla/Mobile/Viewport_meta_tag

Configuring the viewport: https://web.dev/responsive-web-design-basics/#set-the-viewport

JSHint: a tool that helps to detect errors and potential problems in your JavaScript code: https://jshint.com/

W3C HTML Validator: https://validator.w3.org/#validate_by_input

W3C CSS Validator: https://jigsaw.w3.org/css-validator/#validate_by_input

Amelia Greenhall portfolio: https://ameliagreenhall.com/

Ryan Scherf portfolio: https://ryanscherf.com/

Bjorn Meier portfolio: http://bjoernmeier.com/

Cihad Turhan portfolio: http://cihadturhan.com/

More Front End Coursework

Development Tools and Processes

- Introduction to Front End Performance Optimization

- Front End Optimization Workflow

- Web Accessibility Compliance

- Introducing Progressive Web Apps

- Console Foundations

- REST API Basics

- Github Basics

- Scrum Basics