UI Pep Internship Program Curriculum

Below are the details for the 12 week internship program at UI Pep

We will be training the candidates to become a Front-End, Back-End or Full Stack developer.

# Week 0:

These are the pre-requisites the candidates needs to know before starting the internship program:

1. Git – Source Versioning   
   Links:
   1. Learn about how git works with a sample code base:   
      <https://www.tutorialspoint.com/git/>
   2. Git Workflow – Learn how a team maintains a code repository  
      <https://leanpub.com/git-flow/read#leanpub-auto-git-flow-workflow>
   3. Free Course:   
      <https://www.codecademy.com/learn/learn-git>
   4. Tutorial:  
       <https://www.learnenough.com/git-tutorial>
2. Basics of HTML
   1. How to create a sample static pages.
   2. How to serve a website
3. Basics of CSS:
   1. Know how to apply basic styling for different elements.
   2. Know the difference between Inline, External & Internal CSS.
   3. Know what is the CSS, SASS, LESS (Just a basic introduction)
4. Familiar with basics of any OOPs based language (Java, C++, etc)
5. Know how to write a modular program, using variable names and method names that describes the purpose.
6. Please go through these videos to learn how to write effective code and to know why:
   1. <https://www.youtube.com/watch?v=ZsHMHukIlJY> - Seven Ineffective Coding Habits of Many Programmers
   2. <https://youtu.be/YyhfK-aBo-Y> - Code As Risk
7. Setup a Code Editor, I suggest to start with Visual Studio Code. Alternatively, you can install Web Storm.
8. Install Postman, you will learn its uses later in the training the program.   
   <https://www.getpostman.com/>
9. If interested go through this additional resources:
   1. <https://howtocode.io/why-become-a-web-developer/> - Why Become a Web Developer
   2. <https://howtocode.io/back-end-front-end/> - Learn about Front-End, Back-End and Full-Stack developers and responsibilities.
10. Remember all your progress will be monitored on github.

# Week 1:

In first week you will start learning about HTML & Basics of CSS.

## Day 1:

1. [Building Your First Web Page](https://learn.shayhowe.com/html-css/) – 4 Hrs
2. [Getting to Know HTML](https://learn.shayhowe.com/html-css/getting-to-know-html/) – 4 hrs

## Day 2:

1. [Getting to Know CSS](https://learn.shayhowe.com/html-css/getting-to-know-css/) – 4 hrs
2. [Opening the Box Model](https://learn.shayhowe.com/html-css/opening-the-box-model/) – 4 hrs

## Day 3:

1. [Positioning Content](https://learn.shayhowe.com/html-css/positioning-content/) – 8 hrs

## Day 4:

1. [Working with Typography](https://learn.shayhowe.com/html-css/working-with-typography/) – 8 hrs

## Day 5:

1. [Setting Backgrounds & Gradients](https://learn.shayhowe.com/html-css/setting-backgrounds-and-gradients/) – 8 hrs

## Assignment:

By the end of this week you need to create a static webpage of your resume.

Some of the sample references will be:

Use any of the examples from the landing page here, for point of reference:

<https://about.me/>

# Week 2:

In second week, we will start diving deeper into HTML & Presenting Data & Information

## Day 1:

1. [Creating Lists](https://learn.shayhowe.com/html-css/creating-lists/) – 2 hrs
2. [Adding Media](https://learn.shayhowe.com/html-css/adding-media/) – 6 hrs

## Day 2:

1. [Building Forms](https://learn.shayhowe.com/html-css/building-forms/) – 8 hrs

## Day 3:

1. [Organizing Data with Tables](https://learn.shayhowe.com/html-css/organizing-data-with-tables/) – 4 hrs
2. [Writing Your Best Code](https://learn.shayhowe.com/html-css/writing-your-best-code/) – 2 hrs
3. [Performance & Organization](https://learn.shayhowe.com/advanced-html-css/performance-organization/) – 2 hrs

## Day 4:

1. [Detailed Positioning](https://learn.shayhowe.com/advanced-html-css/detailed-css-positioning/) – 2 hrs
2. [Complex Selectors](https://learn.shayhowe.com/advanced-html-css/complex-selectors/) – 6 hrs

## Day 5:

1. [Responsive Web Design](https://learn.shayhowe.com/advanced-html-css/responsive-web-design/) – 4 hrs
2. [Preprocessors](https://learn.shayhowe.com/advanced-html-css/preprocessors/) – 4 hrs

## Assignment:

1. Make your Resume responsive.
2. Replicate a mockup that is shared by us.

By the end of this week, you should be comfortable designing and developing a full-fledged Responsive website. You are what we companies called a Bootstrapper, congrats!!

# Week 3:

This week, you will be introduced to JavaScript

## Day 1:

1. [Introduction to Javascript](http://jsforcats.com/) – 8 hrs

## Day 2:

1. [Values, Types, and Operators](http://eloquentjavascript.net/01_values.html) – 2 hrs
2. [Program Structure](http://eloquentjavascript.net/02_program_structure.html) – 2 hrs
3. <Functions> – 2 hrs
4. [Data Structures: Objects and Arrays](http://eloquentjavascript.net/04_data.html) – 2 hrs

## Day 3:

1. [Higher-order Functions](http://eloquentjavascript.net/05_higher_order.html) – 1 hr
2. [The Secret Life of Objects](http://eloquentjavascript.net/06_object.html) – 1 hrs
3. [Project](http://eloquentjavascript.net/07_elife.html) – 6 hrs

## Day 4:

1. [Bugs and Error Handling](http://eloquentjavascript.net/08_error.html) – 2 hr
2. [Regular Expressions](http://eloquentjavascript.net/09_regexp.html) – 4 hrs
3. [Modules](http://eloquentjavascript.net/10_modules.html) – 2 hrs

## Day 5:

1. [Project](http://eloquentjavascript.net/11_language.html) – 8 hrs

# Week 4:

By End of this week, you will be familiar with JavaScript and all its concepts.

## Day 1:

1. [JavaScript and the Browser](http://eloquentjavascript.net/12_browser.html) – 2 Hrs
2. [The Document Object Model](http://eloquentjavascript.net/13_dom.html) – 2 hrs
3. [Handling Events](http://eloquentjavascript.net/14_event.html) – 4 hrs

## Day 2:

1. [Project: A Platform Game](http://eloquentjavascript.net/15_game.html) – 8 Hrs

## Day 3:

1. [Drawing on Canvas](http://eloquentjavascript.net/16_canvas.html) – 2 hrs
2. [HTTP](http://eloquentjavascript.net/17_http.html) – 4 hrs
3. [Forms and Form Fields](http://eloquentjavascript.net/18_forms.html) – 2 hrs

## Day 4:

1. [Project: A Paint Program](http://eloquentjavascript.net/19_paint.html) – 8 hrs

## Day 5:

1. [Node.js](http://eloquentjavascript.net/20_node.html) – 2 hrs
2. [Project: Skill-Sharing Website](http://eloquentjavascript.net/21_skillsharing.html) – 6 hrs

After week 4, we will have a competitive coding week.   
Where you will be asked to solve various problems (20-30 problems).

The result of this competitive coding week, will have weightage in your final assessment.

# Competitive Coding Week

This week you will be solving 20-30 problems based on various algorithms & data structures.

## Day 1-5:

Everyday you will be asked to solve 4-5 problems. It will be a timed test.

Some problems might have a space & time complexity requirements.

# Week 5:

Now you are comfortable and well trained with HTML, CSS & JS. This week you will be also learning typescript. Which is a OOPs based version of JavaScript. In other words, Superscript of JavaScript.

## Day 1:

1. [Introduction](http://www.dotnetcurry.com/typescript/1287/typescript-quick-start-tutorial) – 2 hrs
2. [What is Typescript?](https://www.codeproject.com/Articles/1198279/Learn-Angular-in-days-Day-Part#_Toc488711055) – 3 hrs
3. [Setup Typescript](https://www.codeproject.com/Articles/1198279/Learn-Angular-in-days-Day-Part#_Toc488711056) – 2 hrs
4. [Why Typescript](https://www.codeproject.com/Articles/1198279/Learn-Angular-in-days-Day-Part#_Toc488711057)? – 1 hr

## Day 2:

1. [Basic Data Types](https://www.codeproject.com/Articles/1198279/Learn-Angular-in-days-Day-Part#_Toc488711058) – 4 hrs
2. [Functions](https://www.codeproject.com/Articles/1198279/Learn-Angular-in-days-Day-Part#_Toc488711066) – 4 hrs