

Jeremy Hadfield

Independent Winterim Application

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### **Advanced Web Development**

The prolific expansion of the software industry and the growing significance of the internet makes learning web development more relevant now than it has ever been before. The Internet serves as a network of connections between people, as an art gallery for well-designed websites, as a tool for analyzing and producing massive amounts of data, and performs a vast variety of other crucial tasks. Despite their importance, very few understand the mechanics behind the Web, and even fewer know how to manipulate these mechanics. However, the Internet is a fertile field of resources for learning web development, offering a variety of free sites to promote education in computer science. For these reasons, I propose an independent Advanced Web Development Winterim.

## **PART A: LEARNING OBJECTIVES & WINTERFEST PROJECT**

I have three primary learning and project objectives for this independent Winterim. Below is a directory of the skills and knowledge I will attain during this Winterim, with the resources I will use to learn these things included. The third point includes my Winterfest project, which is to create a sophisticated website from scratch for a humanitarian organization that fights human trafficking.

## **1. Develop my practical web development skills.**

- a. Become proficient or attain a working knowledge of the following Internet-based software languages and frameworks: jQuery.
  - i. I will complete the jQuery track on Codecademy.com.
  - ii. I will utilize the W3schools.com jQuery course to advance my skills past basic knowledge. At the close of this course, I will take the jQuery test offered by this same website and report my score to my mentor.
- b. Perfect my skills in the following Internet-based software languages and frameworks, in which I am already proficient: HTML, CSS, Javascript, Wordpress, and Bootstrap.
  - i. I will complete the Javascript path on Codecademy.com.
  - ii. I will utilize the textbook “*Beginning Javascript*” by Paul Wilton to learn intermediate Javascript. While this book starts from a beginner level, it also includes intermediate-level Javascript and even some advanced material.
  - iii. I will learn a considerable portion of the practical applications of advanced Javascript from Nathan Hadfield, my uncle and a professional web developer. These skills will mostly be attained in the context of working on web development projects.

- iv. I will complete all of the advanced HTML & CSS projects offered on Codecademy.com.
- v. I will utilize the resource published by Shay Howe, a web developer, to learn advanced front-end development with HTML & CSS.  
[\(http://learn.shayhowe.com/advanced-html-css/\)](http://learn.shayhowe.com/advanced-html-css/)
- vi. I will construct two Wordpress sites, using themes I design myself. I will use primarily the Wordpress Codex resource (<http://codex.wordpress.org/>) to learn advanced Wordpress design.

**2. Advance my conceptual and theoretical knowledge of computer science and explore potential careers in this field.**

- a. I will spend a significant amount of time with my uncle Nathan Hadfield, who has participated in starting a successful software development company and is currently working on another company. This will help me to learn what being a software developer is like and will provide a basis for a potential decision to make a career in computer science.
- b. Most of the conceptual knowledge I learn will be from Nathan Hadfield, who will teach me directly or point me towards the resources necessary to learn the theory and application of crucial concepts of computer science and the Internet. These concepts will allow me to develop websites, but also to *understand* the Internet and the web itself.
- c. Finally, I will complete the parts of the course *Learn Web Development* by the Odin Project that are relevant to the concepts of computer science.

**3. Create a sophisticated website for a humanitarian organization based on preventing human trafficking (either MPA Cares or another group), integrating the skills and knowledge I learned during the Winterim.**

- a. I will develop my skills in fulfilling consumer requests by requesting and following guidelines for how I should create the website. This will include how the organization wants the website to look, how it needs to function, and what content needs to be included.
- b. I will create this website from scratch, or using only minor contributions from frameworks like Wordpress that make the web design process less exhaustive. This from-scratch approach will demonstrate that I know the back-end and front-end functioning of a website sufficiently.
- c. Nathan Hadfield will guide my development of this website and ensure that it meets the standards of the software industry.
- d. This completed website will be my Winterfest project.

## **PART B: DAILY SCHEDULE**

**8:00 AM** - Start working on a small web development project to wake up my mind and help me to adapt the mindset of a web developer.

**9:00 AM** - Finish the project, work on advancing practical knowledge in back-end development. This will include working on the variety of practical learning objectives found in the learning objective directory. For example, learning Javascript from Codecademy for two hours.

**10:00 AM** - Apply the practical skills developed in the previous two hours to the Winterfest project or some other website project.

**11:00 AM** - Work on another practical knowledge skill, this one in front-end design. This includes CSS, HTML, SQL and jQuery (which is not front-end but is still in this category).

**12:00** - Lunch

**12:30 PM** - Work on developing theoretical knowledge - reading textbooks, going through courses, and developing my understanding of computer science concepts.

**1:30 PM** - This time is reserved for working on the Winterfest project. It should be used for the project only.

**3:00 PM** - Talk to mentor (Mr. Hadfield) about what I've done today. Ask him questions about any concepts I didn't fully understand. If my code isn't really working, ask him about how to debug it or make it more efficient. Look over the project and evaluate how close I am to completing my goals and what I need to do tomorrow.

**4:00 PM** - School day complete.

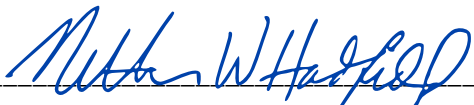
## **PART C: CONCLUSION**

It may be noted that this Winterim is similar to the Web Development Winterim offered by Maeser, but it is only as similar as AP Chemistry is to Chemistry or AP Biology is to Biology. These are radically different classes despite having similar subject matter. I have some background in web development and I am already proficient in the basics of web development that will be taught in the Maeser web development Winterim, and thus participating in the school-sanctioned Winterim would be superfluous and would not provide much of a learning

experience. Mr. Olsen, the teacher of the school's web development Winterim, has recommended that I do not take his Winterim, advising that I instead advance my education through an independent Winterim that is more customized to my current skills.

The independent advanced web development Winterim fulfills all three of the Independent Winterim Requirements: it is an academically rigorous exploration of career opportunities that serves as a humanitarian opportunity. I will learn a large amount of extremely applicable skills while exploring the career of computer science and developing a website for a humanitarian organization. This will help me to grow and develop in my ability to understand and use the technology of the modern age, as well as increasing my value as an employee and helping a humanitarian cause I believe in.

#### **PART D: MENTOR SIGNATURE**

I, , agree to mentor Jeremy Hadfield in his Advanced Web Development Independent Winterim.