DevPoint Labs

Syllabus Weeks 1 - 4

Full Stack

Winter 2015/2016

OVERVIEW:

The curriculum of the first four weeks will establish the foundation for the remainder of the course. The first two weeks will be primarily dedicated to understanding and using the Ruby programming language. Weeks three and four will be dedicated to understanding and using the basics of Web Application Development with Ruby.

Week One

The first day of class will be an introduction to DevPoint Labs. We will start to get to know each other, go over expectations, tour the building, etc. We will also begin getting your computers up to speed with the correct software and setup that will allow us to dive right into the course content. Once we all know each other's' names, can find the nearest bathroom and understand what to expect from the course, we can start learning core Ruby concepts.

We begin with the basics. A brief history of computer programming leads us into **Ruby**. We will break down the basics of Ruby into all the meaningful chunks that you need to know. You will create and manipulate variables. Execute Ruby scripts on your terminal. Build games and other programs that will allow you to explore the tools and possibilities with Ruby.

In addition to core Ruby skills, we will also begin with the basics of **Git** and **Github**. Git is a popular version control system that is tremendously useful for storing and sharing and updating your code for different projects. Github is an online repository for your git repositories. We will be using these tools throughout the cohort and you will continue to use them throughout your career.

Week One Concepts and Competencies

Ruby	**Common Data Types**	**GitHub**
● **Variables** ● **Conditionals** ● **Loops** ● **Methods** ● **Classes** ● **Modules** ● **Arithmetic Functionality** ● **Data Type Methods** ● **Ruby Docs** ● **Hashes** ● **Arrays** ● **Symbols**	● **Integers** ● **Strings** ● **Booleans** ● **Arrays** ● **Hashes** ● **Symbols** ● **Date / Date Time**	● **Git** ● **Git Commands** ● **Git Init** ● **Git Status** ● **Git Add** ● **Git Commit** ● **Git Push** ● **Git Pull** ● **Git Merge** ● **Git Checkout** ● **Git Stash** ● **Git Fetch** ● **Git Log**

Week Two

Week two will begin with a review of the Week 1 Quiz, terminal commands review, sublime package manager and some useful shortcuts . Then we will transition into some topics that will help us get ready for beginning to learn Rails in week three and four. We will go over some more Git/Github material, HTTP protocols, HTML, CSS, and Dev Tools. This week is a short 2 day week due to Thanksgiving break.

Week Two Concepts and Competencies

Review / HTTP / HTML	**Thanksgiving Break**	**Thanksgiving Break**
● **Terminal Review** ● **HTML / CSS Review** ● **Sublime Package Manager** ● **Sublime / Atom Shortcuts** ● **How The Web Works(HTTP)** ● **Dev Tools**	● **Keep studying Ruby, HTML and CSS**	● **Keep studying Ruby, HTML and CSS**

Week Three

We will introduce Sinatra, a Ruby-based web app framework. Sinatra is essentially a less complex version of Rails. We will spend a day focusing on some of the important concepts that will transfer to Rails. Once you feel like you have a basic grasp on Sinatra we will transition into basic Ruby on Rails. Week three will also consist of learning **SQL**. We will focus on the basics of **SQL** databases and the foundational parts of the Rails' structure (Models Views Controllers or **MVC**). The **models** are what Rails uses to reference the database, the **views** are the actual HTML pages that are viewed on the browser and the **controllers** are the directors of traffic in between the views and the models. Understanding the basics of how each component works and

how they interact with each other is the primary goal of week three. We will also be covering user authentication, and do a short intro on Heroku.

Week Three Concepts and Competencies

Sinatra	**Rails / SQL / MVC**	**Gems**
● **Routes** ● **GET and POST** ● **HTML** ● **CSS** ● **Embedded Ruby (erb)**	● **Models** ● **Views** ● **Controllers** ● **Routes** ● **Raw SQL** ● **Postgresql** ● **Active Record** ● **Heroku** ● **Commands**	● **Gemfile** ● **CRUD** ● **Restful Architecture**

Week Four

Week four continues our journey into Rails. We will introduce **Materalize** (a front-end styling / javascript framework) and go deeper into using **Git** and **GitHub** as tools for effective collaboration and code sharing.

Week four ends with the first **hackathon** of the cohort. The hackathon will require that small groups of students are able to create an entire Rails web app from start to finish in an eight hour period. Class instruction during week four will be designed to prepare you for the hackathon.

Week Four Concepts and Competencies

Git / Github	**Materialize CSS**	**Debugging**
● **Review / Live Examples**	● **Grid system** ● **Commonly Used Classes** ● **Components** ● **Mobile First** ● **Responsive Design**	● **Debugging Gems / Tools** ● **Fixing a broken project** ● **Stack Traces** ● **Best Practices**