Intro to Programming Nanodegree Syllabus

Contact Info

While going through the program, if you have questions about anything, you can reach us at enterprise-support@udacity.com. For help from Udacity Mentors and your peers visit the Udacity Classroom.

Nanodegree Program Info

This introductory Nanodegree program teaches you the foundational skills all programmers use, whether they program mobile apps, create web pages, or analyze data. It is ideal for beginners who want to learn new skills, make informed choices about career goals, and set themselves up for success in career-track Nanodegree programs.

Prerequisite Skills

A well-prepared learner is able to:

- Basic computer skills: web browsing, file management, installing applications

Required Hardware

- Webcam
- Microphone
- 64-bit computer

Required Software

- Sublime Text 2.0.2+
- Python 2.7/3.6
- HTML Validator
- CSS Validator
- Atom 0.177.0

Version: 2.0.0

Length of Program: 96 Days*

** This is a self-paced program and the length is an estimation of total hours the average student may take to complete all required coursework, including lecture and project time. Actual hours may vary.*

Part 1: Welcome to the Program!

Welcome to the Introduction to Programming Nanodegree program. This is your first step on your journey to become a programmer. Learn what this program is all about as well as how to find support along your learning journey.

Part 2: Intro to HTML

Get acquainted with how the web works! Learn about your browser, the internet, and a filetype called HTML. HTML stands for "Hypertext Markup Language." HTML is the language used to create webpages. Learn the basics of HTML to create a simple web page!

Part 3: Intro to CSS

Learn how to add CSS, divs, spans, classes, and ids to your page. CSS allows you to create the aesthetics that all web users enjoy when browsing the web.

Project: Animal Trading Cards

Use your knowledge of HTML and CSS to create a web-based trading card depicting your favorite animal.

Supporting Lessons

Lesson	Summary
Styling with CSS	Learn how to add style to your website by using Cascading Style Sheets (CSS).

Part 4: Intro to Python, Part 1

Learn Python, a versatile programming language, to build your skills as a developer. In this first part, you will use Python statements and functions to draw colorful designs on the screen.

Part 5: Toolkit: Shell Workshop

The Unix shell is a powerful tool for developers of all sorts. In this lesson, you'll get a quick introduction to the

very basics of using it on your own computer.

Part 6: Intro to Python, Part 2

Learn Python, a versatile programming language, to build your skills as a developer. In this second part, you will install Python on your computer, and learn to work with textual data in strings.

Part 7: Intro to Python, Part 3

Learn Python, a versatile programming language, to build your skills as a developer. In this third part, you will use Python to work with files on your computer's disk, as well as learning the fundamentals of Object-Oriented Programming with classes and methods.

Project: Rock Paper Scissors

Apply your Python and Object-Oriented Programming knowledge to create a game of Rock Paper Scissors where a human can play against a computer player!

Supporting Lessons

Lesson	Summary
Working with Files	Learn to work with files on your disk using Python code: listing files in a directory, moving files around, and reading & writing the contents of text files.
Objects and Classes	Learn to create new kinds of data object using classes, including creating your own methods.

Part 8: Intro to JavaScript

Learn the history of JavaScript and how it compares to Python programming. Understand how the DOM is formed, what Nodes and Elements are, and how to select items from the DOM. By the end, you'll write JavaScript code that lets the user to create a grid of squares representing their design, and apply colors to those squares to create a digital masterpiece.

Project: Pixel Art Maker

Create a single-page app in JavaScript where the user can create artistic designs!

Supporting Lessons

Lesson	Summary
What is JavaScript?	Learn the history of JavaScript and start writing your code immediately using the JavaScript console.
Data Types & Variables	Learn to represent real-world data using JavaScript variables, and distinguish between the different data types in the language.
Conditionals	Learn how to add logic to your JavaScript programs using conditional statements.
Loops	Harness the power of JavaScript loops to reduce code duplication and automate repetitive tasks.
Functions	Dive into the world of JavaScript functions. Learn to harness their power to streamline and organize your programs.
Arrays	Learn how to use Arrays to store complex data in your JavaScript programs.
Objects	Meet the next JavaScript data structure: the Object. Learn to use it to store complex data alongside Arrays.
The Document Object Model	The Document Object Model (DOM) allows developers to interact with and control the rendered page. You'll learn how the DOM is formed, what Nodes and Elements are, and how to select items from the DOM.
Creating Content with JavaScript	Static is boring, so we'll use JavaScript and DOM methods to create new page content, update existing content, and delete content. You'll also learn how to check and set the styling of page elements.
Working with Browser Events	Hundreds of events fire every time you interact with a page. Learn what an event is, how to listen for an event and respond to it, what data is included with an event, and the phases of an event.
Performance	Learn how to measure the code you write to make sure it's performing efficiently and how reflow and repaint affect performance. Learn how to harness the JavaScript Event loop for performance gains.

Part 9: Congratulations! What's next?

Great work finishing the program! Here's some advice on next steps in your programming journey.



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