

# Swift Programming Training

A class taught by Ash Dreyer.

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## Class Overview

Welcome to Swift Programming Training! This training is meant to be a rapid but generally comprehensive overview of programming for those who have never programmed before. We will use Swift, the programming language created by Apple, but will generally focus on topics that are applicable to most programming languages. We will also be covering basics of the command line, as, while it seems very complicated at first, the command line is a powerful and efficient tool for most programmers.

We will cover topics in Swift such as

Constants	Types	Input/Output
Conditional Statements	Arrays	For Loops
Functions	Classes	Subclasses
Dictionaries	Optionals	And more!

We have a range of resources we have created for this class, so please feel free to use as much as is useful to you and ask us tons of questions. Also feel free to give us suggestions on improvements we can make to create a better learning environment. We want programming to be as fun for you as it is for us!

With that said, we do highly encourage you to seek answers to your questions online as much as possible, so that you can be a better programmer. A lot of programming involves learning from other people's code and asking the right questions. We want you to have the skills to help yourself when you leave this training.

## Class Resources

This training relies on an array of resources we have created. Lectures will consist of a open-question presentation along with live code demonstrations and handouts such as this to read along with. Coding practice will consist of individual worksheets, group programming assignments (to be done during meetings), quizzes, weekend write-ups, and a final project. All of these will be posted on the class Piazza along with other resources such as work solutions and helpful outside guides.

### Piazza

[piazza.com/frc\\_1678/fall2017/cs1](https://piazza.com/frc_1678/fall2017/cs1)

Access code: Squeezecrush1

Ask questions of us and your classmates about the lessons, work, and the class. Access all class resources, including this handout. We will try to respond as promptly as possible.

## Outside Resources

We won't pretend to know everything. That's another reason why we want you to be able to research your questions online, in case we cannot answer them ourselves! Here are some of the many resources we have found extremely helpful:

### Stack Overflow

<https://stackoverflow.com/tour>

This is probably going to be your most visited site from here by far. This website is for programmers to ask, answer, and learn from a wide variety of programming questions.

### Apple's Official Swift Page

<https://swift.org/>

Who is most likely going to know about how something works? The creator, hopefully! Apple has documented their new language, in my opinion, amazingly well. They make topics fairly simple to understand, all while keeping the complexities. Their book, The Swift Programming Language, is a great place to start on your general Swift knowledge, and their developer documentation is a great place to read more in depth on specific concepts in Swift.

### Ray Wenderlich

<https://www.raywenderlich.com/category/swift>

Ray Wenderlich's tutorials are very clear and easy to read, with lots of pictures for you to make sure you're on the right track. He has tutorials that will guide you through actually creating pretty cool projects! However, most of his Swift training is geared towards Mac users, so just be aware of the things your computer can and cannot do.

### We ♥ Swift

<https://www.weheartswift.com/learn-swift/>

While it doesn't have as many tutorials as other sites, We ♥ Swift has a lot of great exercises that range from Swift basics to algorithms and data structures.

### iTunes U Courses

<https://itunes.com/StanfordSwift>

<https://itunes.com/PlymouthSwift>

If you have some Swift knowledge under your belt and you're itching for more and to do more, you should check out these great app development lectures created by internationally recognized universities.

### Ryan's Linux Tutorial

<http://ryanstutorials.net/linuxtutorial/>

Learning the command line can be very overwhelming, but this tutorial does a good job of taking you through each step, showing pictures, and explaining the important details. Be sure to read the lesson you're working on thoroughly for the best learning experience.

### Linux Journey

<https://linuxjourney.com/>

A super cute and interesting guide to many important topics involving Linux. It has small, helpful exercises and quizzes so that you can track your progress.

## **GitHub**

<https://help.github.com/>

We will be using GitHub a lot, because you, if you decide to continue on in programming after this training, will be using GitHub a lot. We suggest you make an account as soon as possible and get everything set up so that you can start working!

## **Official Git Documentation**

<https://git-scm.com/docs/gittutorial>

<https://git-scm.com/doc>

<https://services.github.com/on-demand/downloads/github-git-cheat-sheet.pdf>

While GitHub does have a graphical interface application and website that you can work with, we recommend at least trying to work with it on the command line. Once you get the hang of it, it will make you a lot more efficient in your workflow (and, in my opinion, it's pretty fun.)

## **Setting up Your Environment**

... <https://github.com/frc1678/vagrant-box> ...