3. The three resources that I found helpful to learn Swift programming and developing are

* The Swift Programming Language (Swift 5.2)

This is the basic resource which I found useful to learn the Swift programming language. This Swift guide will help to get a clear idea about the programming concepts by providing an overview of all the concepts. The Guide provides example code resource which helped me to practice each concept in Xcode. while learning I focused on concepts which task question required and try to figure out the task question based on my learning. In Swift Language guide they provided a clear theoretical explanation for each concept, which helped me to understand the new concepts very well.

* Hacking with Swift

This is another resource which I found useful to learn swift programming. In this website, they made 100 days of Swift program to learn a swift from scratch. The author has given video wrap up for each concept followed by a theoretical explanation regarding the concepts. The concepts went on slowly which helped me to learn concepts slowly and precisely. Another usefulness in this course is they have given a quiz test for each concept which helped me to know the concepts and work on my mistakes.

* Introduction to IOS 11 development: Swift 4 and Xcode 9

I have taken this course in Udemy to learn the swift concepts and to develop an IOS app using Xcode. Meanwhile, during the entire course, they will teach to build 20 IOS mobile apps which helps me to get some sort of idea regarding the app development. The course is built by focusing on students who don’t have any programming knowledge and teach swift concepts from scratch. The course will provide design assets, by gaining all knowledge I try to develop my own custom app which I need to do during my course work. The course also helps to build intelligent apps using machine learning, learning. I took this course by hoping that all these learning materials will help to complete all my future tasks.

4. What is one thing that you think will be difficult coming from other languages? Or if you are not new to the language, what is the thing that caused (or still causes the most difficulty)? Why?

Learning a new language always needs a lot of practice since every programming language uses their own way of initialising and writing the code. I felt difficult in learning swift programming since I am from a mechanical background and knowing only java programming. Swift has many similar concepts like java but the way of writing a program which caused me a lot of difficulties and took a lot of time to understand and carry out swift programming task. I really felt protocol and struct concepts really caused me a lot of difficulties to understand and carryout the task.

5. Following on from a discussion in class, please identify something about Swift that you or your group members had not originally considered during your self-study time. Please identify who you discussed this with.

Initially, before looking at the lab task I was feeling like swift programming will be quite easy and I can easily carry out my tasks. But the task question was tricky and changed my entire way of thinking about swift programming. I discussed my situation with my brother who realised me that to learn any new language we need to first put a lot of efforts to first learn the basics and then we need to practise code instead of simply reading the code. By taking his guidance I spend a week to practise and learn all the basic concepts. I practised writing programs for each concept and Utilised all Swift learning resources to understand the programming. Finally, by doing the right work I figured out the task questions and written code for the given program.

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