I – Chapter 1 – Introduction

1. A statement of the problem

My initial project intended to compare Android and HTML applications and describe the major limitations of the latter in order to evaluate what types of application can only be developed as native applications. For this goal I attempted to acquire the needed knowledge in Android Application Development (AAD) through the most famous course available on Udemy. During the online training in AAD I faced several challenges due to several disparate reasons which caused me to change the focus of my project to the development process itself. I will attempt to describe the steps taken to learn Android Application Development and Web Application Development, describe the major difficulties in each as well as the difficulties encountered during the development of one simple application.

2. Definition of terms

3. Review of the literature

4. Description of the remaining chapters

1. Research on current AAD requirements
2. Research on current WD requirement

3. Choosing the hardware in which to develop

My initial assumption from reading the literature was that AAD has higher hardware requirements as in order to run an Android Application, one has to either have an Android Smartphone or an Android Emulator running on the development machine.

Figure 1. MEMORY/CPU USAGE + ANDROID STUDIO + ANDROID EMULATOR + PARSE DASHBOARD + APP RUNNING + 5 TABS IN CHROME

Figure 2. MEMORY/CPU USAGE + ATOM EDITOR + PYTHON SERVER + PARSE DASHBOARD + APP RUNNING + 5 TABS IN CHROME

1. Choosing the Operative System

There are three major alternatives regarding Operative Systems. Developer communities have different preferences depending on the target platform of the software being developed.

Mac OS X

Mac OS X is an operating system developed by Apple which is intended to run only on Apple developed computers. According to Apple “macOS is the operating system that powers every Mac. It lets you do things you simply can’t with other computers. That’s because it’s designed specifically for the hardware it runs on — and vice versa”.

According to a survey done by Stackoverflow and answered by 56,033 coders in 173 countries” Mac OS X is used by 26.2% of the surveyed “coders”.

<https://www.apple.com/macos/what-is/>

<http://stackoverflow.com/research/developer-survey-2016>

Linux

Linux is an OS assembled under the model of free and open-source software development and distribution initially released on September 17, 1991. It is used on personal computers, mobile devices, embedded devices, servers, mainframes and supercomputers. It is usually downloaded as a Linux Distribution, which consists of a software collection of the Operating System itself and several other applications. According to lwn.net there are more than 600 distributions of which 500 are under active development.

According to stackoverflow survey 21.7% of the inquired people use Linux, with 12.3% of the total OS market share being the distribution Ubuntu.

Canonical is the entity responsible for Ubuntu’s development. The state that “”Linux was already established as an enterprise server platform in 2004, but free software was not a part of everyday life for most computer users. That’s why Mark Shuttleworth gathered a small team of developers from one of the most established Linux projects — Debian — and set out to create an easy-to-use Linux desktop: Ubuntu”.

<https://lwn.net/Distributions/>

Windows

Microsoft Windows is an Operating System developed by Microsoft. It is the OS with the largest market share in Personal Computers and the first version was released in November 20, 1985. It is a closed source operative system available commercially.

The current version is “Windows 10”and was released on July 29, 2015.

According to stackoverflow all the versions of Windows combined are used by 52.2% of the inquired people making it the Operative System used by the majority of developers.

<https://web.archive.org/web/20121231122111/http://windows.microsoft.com/en-IN/windows/history>

<http://news.microsoft.com/facts-about-microsoft/>

For the purpose of this study I elected to use the only free and open source alternative, Linux, and opted for the most used distribution at the onset of this project, Ubuntu version 16.04 LTS.

1. Android IDEs

Android Application Development was initially conducted on Eclipse IDE. Google launched Android Studio in 15th May 2013 “based on the powerful, extensible IntelliJ IDEA Community Edition (Ducrohet, Xavier 2013)”. Eason, Android Product Manager at Google declared on 2nd of November 2016 that support for Eclipse Android Developer Tools, clearly favoring Android Studio as the primary IDE for Android Development.

Eason also states that Android Studio is“the development environment used by 92% of the top 125 Google Play apps and games” showing a clear preference from Android Developer community in favor or Android Studio.

Android Studio was used for the purpose of this project as it has the greatest market share and is the only IDE supported directly by Google.

<https://android-developers.googleblog.com/2016/11/support-ended-for-eclipse-android.html>

<https://android-developers.googleblog.com/2013/05/android-studio-ide-built-for-android.html>

6. Web Development IDEs

II – Chapter 2 – Methods Used

1. Requirements and specifications

III – Chapter 3 – through N – 1 – The middle chapters depend on your particular project.

IV – Chapter N – Conclusion

V – Appendix A – User’s Manual

VI – Appendix B – Maintenance Manual

VII – Appendix C – Design Documents

VIII – Appendix D - Source Code

IX – Appendix E – Test Suite

To include: Title page, signature page, abstract and bibliography

There needs to a statement of (1) the problem to be studied, (2) previous work on the problem, (3) the software requirements, (4) the goals of the study, (5) an outline of the proposed work with a set of milestones, and (6) a bibliography.