**Inventory System for Minor and Major Equipment Related Work**

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**Introduction:**  This related work paper will cover several sources that showcase why we choose things such as what framework, database protocols, and even how we plan our application to look. To review, this project is to create an inventory management system for the University of North Dakota to keep an accurate record of their major and minor equipment around the campus. This system will be based initially on an android based software with eventual compatibility to a website and finally a IOS system.

*Microsoft Visual Studios* [1]offers a well-rounded platform for us to develop our application. With their use of .NET, we will be able to create an application that can be accessed across Android, iOS, and windows. Visual Studios also offers the use of Azure App Service to connect the Universities own database.

*Android Studio* [2]offers custom-tailored tools for Android development that helps speed up development and offers a fast and feature-rich emulator. It has prebuilt templates that you can follow, or build one from scratch. This is not the best software for us to use since we also want the use of iOS and Windows in future iterations of our system.

*Xamarin* [3]is an extension that can be added to Visual Studios that allows us to build native apps for multiple platforms on a shared C# codebase. It also allows us to test our app on over 2,000 devices with do-performances such as taps, pinches, swipes and more. This will allow us to create our application using one codebase that will be used across different platforms eliminating the need to write a separate codebase for each one.

*University Of North Dakota (UND)* [3]The University of North Dakota is required to follow “certain identity standards” while still being allowed to be flexible with the web content. UND defines a set of style guides for web content that will be brought across into the design of our application such as the color scheme, consistency of the navigation bar, and formatting of lists. These are just a few of the things that they outline.

*Mobile User Experience Guidelines and Recommendations* [4] Digital Gov published this article which outlines some of the guidelines that have been deemed the most relevant from community events from 2013-2015. They have distilled that 1) make sure your content is structured and chunked appropriately for multiple devices. This is useful to make sure that one key aspect of our design will work across multiple devices without building a dependency on it just to find out it won’t work correctly. 2) Follow industry user interface guidelines and government regulations in the development of your mobile product. For our project we will be using UND’s Identity Guidelines. 3) Leverage the device s features for usability and accessibility. We will be making use of the camera to scan barcodes and the wireless connection to be able to connect to the database anywhere with the necessary login information. 4) Test at multiple points in the design and development process. We intend to continuously test and modify our code to ensure that it is stable and brings an easy experience to the user. 5) Collect and use data to determine what content your users want and where. This will be used in the later stages of our development when we present our prototype to test subjects to see what they do and do not like about it and where it could use improvement. 6) Develop security and privacy guidelines regarding what the app does and how it protects user data. Security will one key aspect since there will be remote access to UND’s database. Our approach to security will be address later on.

# Works Cited

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