*CIS 166AA Final project Android Java Mobile Application*

*Introduction:*

This is a mobile Android application that provides the user with a detailed explanation of five topics learnt during the timeline of the CIS Introduction to Java course. Android is an operating system for mobile devices such as Pixel and Samsung. Android has a framework that provides a means to produce applications that run on the OS. The framework allows development in Java and other JVM languages such as Kotlin and it uses XML markup language for defining UIs.

*The application:*

This application will have two pages, the first showing the list of all topics that can be viewed. The second page will be shown via clicking the topic cardview on the first page, thereby showcasing the topic’s lesson in full detail.

*The code:*

Each page in the application consists of an Activity and an XML file. The activity is where all the code is written in Java. The XML is where the UI is defined and referenced by the activity. Our two activities of the application are the HomeActivity and TopicActivity. HomeActivity is where the list of topics will be displayed. HomeActivity’s XML will consist of a RecyclerView. RecyclerView is a UI class that will work to display a list of views of the same kind, namely ItemViewHolders. RecyclerViews are connected to an Adapter, which acts as the brains of the RecyclerView. Adapters need to know the class of the objects that will populate the ItemViewHolders contained in the RecyclerView namely in this case Topic.

Topic is the class which will contain the lesson’s data that will be used to populate the ItemViewHolders. The HomeActivity class will implement OnTopicClickedListener interface, which will be triggered when the user taps on a ItemViewHolder, or Topic. When ItemViewHolder is clicked the Adapter will click its OnTopicClickedListener which is the HomeActivity that then launches the TopicActivity with respect to the clicked Topic. When TopicActivity is launched it will show in full screen the Topic’s lesson in full detail, laying out all of its attributes. The TopicActivity will contain a back button which takes the user back to the HomeActivity.

The data is stored in Json, and then parsed to Java objects of the Topic class. I mapped the Topic field members to Json keys. The library Gson by Google did most of the heavy lifting for me.

*Conclusion:*

Majority of applications in the mobile space follow this applications UI pattern namely the use of lists of data accompanied by an in depth view of that data after clicking on that item, such as Instagram, Reddit, and CNN. This application was previously done in another way pretty much hard coded without the use of an Adapter and RecyclerView. I had made five ItemViewHolders that were already specified in the HomeActivity, and five different TopicActivities which contained the lesson or data.