Environment Setup & Installation

ICT2105 Mobile Application Development Spring 2020

Objective

This lab provides instructions to install and set up the Android Development Environment, Git version control and SDK tools on Windows.

- Install and set up Android Studio and SDK tools
- Install and set up version control Git and GitHub

Requirements

- Microsoft® Windows® 7/8/10 (32- or 64-bit)
- 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
- 2 GB of available disk space minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- Java Development Kit (JDK) 7 and above
- Optional for accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality
- Android Development Phone (Nougat 7 and above preferred)
- Micro USB and/or USB-C cable

Install and set up Git, Android Studio and Android SDK Tools

In this section, download and install the necessary tools and software to start using Android Studio and version control. It is assumed that the development machine has a 64-bit version of Windows installed.

1. Download a 64-bit version of the Java Development Kit (JDK) (preferably version 8) from the following link:

   https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

The **PATH** is the system variable that the OS uses to locate needed executables from the command line or Terminal window. Ensure that Java is configured in the system **PATH** after installation:
http://docs.oracle.com/javase/tutorial/essential/environment/paths.html

The **JAVA_HOME** system variable should be set to the following (dependent on your install):
```
C:\Program Files\Java\<jdk_version_number>
```

More info on configuring **JAVA_HOME**:
http://javatechig.com/android/installing-android-studio

2. Download and install git from the following link:
   http://git-scm.com/downloads

   The git executable should be located in the following folder or similar:
   ```
   C:\Program Files\Git\bin
   ```

   Ensure that the Git executable is configured in the system **PATH** after installation:
   http://blog.countableset.ch/2012/06/07/adding-git-to-windows-7-path/

3. Download and install the GitHub windows client:
   https://windows.github.com/

4. Download and install Android Studio from the following link:
   https://developer.android.com/studio/

   Additional instructions on how to install Android Studio are at the following link:
   https://developer.android.com/studio/install

5. **Optional but highly recommended if running an Intel machine**:
   During installation, select the Intel Hardware Acceleration Manager (HAXM) to be installed as part of the SDK. Intel HAXM is a hardware-assisted virtualization engine for Android. Ensure that HAXM is enabled in the computer's BIOS before proceeding.

The location of the HAXM installer may be the chosen path where you installed the Android SDK:

```
C:\Users\<username>\sdk\extras\intel\Hardware_Accelerated_Execution_Manager
```

Click on the executable intelhaxm-android.exe to install HAXM.

6. Configure the Android SDK tools in the **PATH.** The installation path could be**:**
   ```
   C:\<install path>\Android\sdk\platform-tools\
   ```

   Launch and run Android Studio. It will proceed to download additional SDK components and then finally start.

   Android Studio as of late-2014 is the official IDE for Android and is based on the IntelliJ Java IDE.

   Further information can be found at the following links:
   - https://developer.android.com/studio/
   - https://developer.android.com/studio/intro/