Android UI automation test with Appium

In this Appium automation test sample project, I will use real Android device to execute the test script. The test script is written in Python language.

Testing environment:
Host OS: macOS Sierra 10.12.5
Device: Galaxy Note 4 (Android 5.0.1)

Test scenario:
Add item
Steps:
1. Launch OutOfMilk app
2. Click [Skip] at login page
3. [Optional] Remove the "What's New in v5.4.4..." dialog if it shows up
4. Type "sugar" in [Add item] box
5. Show onscreen keyboard
6. Press [Done] in onscreen keyboard

Expected result:
"Sugar" item is created successfully

Delete item
Steps:
1. Perform "Add item" scenario above
2. Check the "sugar" item checkbox
3. Click [DELETE ALL] button
4. Click [DELETE ALL] button in Confirm page

Expected result:
"Sugar" item is deleted successfully

Pre-condition installation:
1) Install Android SDK
    https://developer.android.com/studio/index.html

    1.1. Download necessary Android kit (in this case, I downloaded Android 5.0 for my test sample project)

    1.2. Make sure ANDROID_HOME path is the path of your Android SDK. In Terminal, type
    nano ~/.bash_profile

    add lines:
    export ANDROID_HOME=/YOUR_PATH_TO/android-sdk
    export PATH=$ANDROID_HOME/platform-tools:$PATH
    export PATH=$ANDROID_HOME/tools:$PATH

    re-open terminal and check if it works:

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```
echo $ANDROID_HOME
```

2) Install Java 8 JDK
   http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

3) Install Homebrew from https://brew.sh/

4) Get Node.js. In Terminal, type
   ```
   brew install node
   brew update
   ```

5) Get Appium. In Terminal, type `npm install -g appium`

6) Get Appium Client. In Terminal, type `npm install wd`

7) Install Python 2.7
   7.1 My test script is written in Python, so you will need to install python:
   https://www.python.org/downloads/mac-osx/

   7.2 Install pip (pip is package installer for python)
       in Terminal, type `sudo easy_install pip`

   7.3 Install package dependency for this project. In Terminal, type
       ```
       sudo pip install Appium-Python-Client
       sudo pip install -U selenium
       ```

   7.4 Download Selenium Java Server from:
       http://selenium.googlecode.com/files/selenium-server-standalone-2.7.0.jar
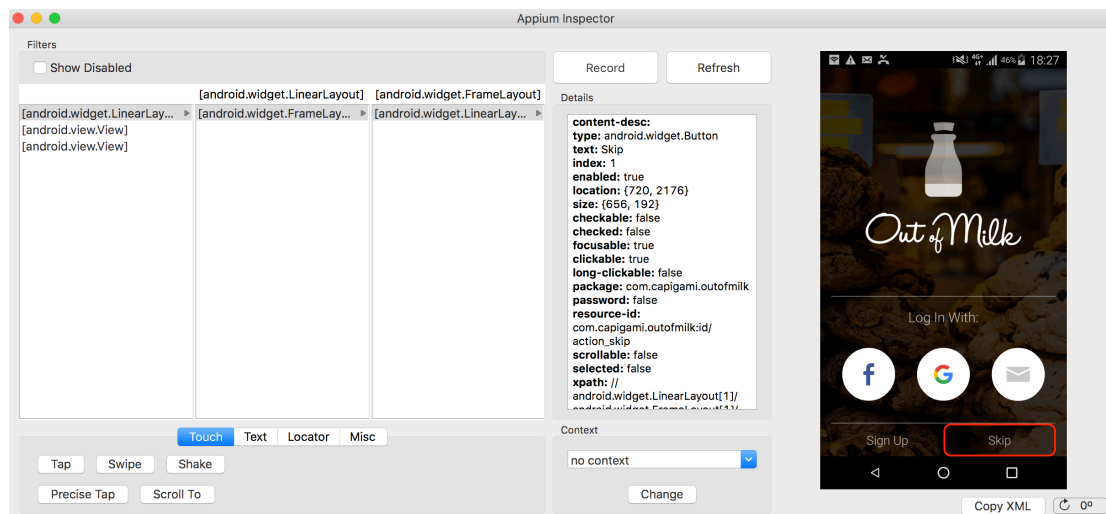
       and type (in Terminal) in the download path
       ```
       java -jar selenium-server-standalone-2.7.0.jar
       ```

2 [OPTIONAL] Get Appium Desktop (this is for Appium Inspector to inspect App object XML property)
   https://bitbucket.org/appium/appium.app/downloads/appium-1.4.0.dmg

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Testing steps:
1) Get the project files from GitHub (download the "apps" folder and the "outofmilk_test.py")
   https://github.com/mantoshka/OutOfMilk

2) Connect Android device (with Android 5.0.1) and make sure "USB debugging" mode is enabled on the device
3) Start Appium: in Terminal, type appium &
4) Run the test script: open new Terminal tab, navigate to the project files, and type python outofmilk_test.py
5) The script should automatically install the App if it's not installed yet, then proceed with the test scenario
6) If the result is OK, the Terminal should show

```
[Antos-MBP-2:OutOfMilk anto$ python outofmilk_test.py
test_add_shopping_list_item (__main__.OutOfMilkAndroidTests) ... ok
test_delete_shopping_list_item (__main__.OutOfMilkAndroidTests) ... ok

----------------------------------------------------------------------
Ran 2 tests in 68.683s

OK
```