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Please open issue or email me if you encounter any bugs.

This document provides guidance to migrate the old python-for-android development toolchain to the latest python-for-android master branch.

Environment preparation

Get Python-for-Android

Clone the git repo of the python-for-android:

```
git clone https://github.com/kivy/python-for-android.git
cd python-for-android
```

The latest branch version is

Before compiling and installing the p4a, we need to manually fix some bugs.

There exists a bug for the Mac OS X platform in setting, see https://github.com/kivy/python-for-android/issues/622. For linux, the default p4a local storage directory is located at ~/.local/share/python-for-android/. But let us change the p4a local storage directory at `<python-for-android>/pythonforandroid/steup.py`, line 97:

```
def setup_dirs(self):
    '''Calculates all the storage and build dirs, and makes sure
    the directories exist where necessary.'''
    self.root_dir = realpath(dirname(__file__))

    # AND: TODO: Allow the user to set the build_dir
    # self.storage_dir = user_data_dir('python-for-android')
    self.storage_dir = expanduser('~/.python-for-android')
```

Copy the new `mobildinsight` recipe into the `python-for-android` directory:

```
cp -r <MobileInsight2>/recipes/mobileinsight <python-for-android>/pythonforandroid/r
ecipes
```

Then install python-for-android:

```
sudo python setup.py install
```

Install dependencies

- For Linux platform (Ubuntu 14.04 or newer):

```
sudo apt-get install git pip python2 ant openjdk-7-dev unzip libncurses5-dev
sudo dpkg --add-architecture i386
sudo apt-get update
sudo apt-get install libncurses5:i386 libstdc++6:i386 zlib1g:i386
pip install cython virtualenv
```

Then install Android SDK and NDK according to http://developer.android.com/sdk/installing/index.html?pkg=tools

- For Mac OS X:

Use `Homebrew` to install all the dependencies:

```
brew install android-sdk android-ndk ant pip
pip install cython virtualenv
```

```
export ANDROIDSDK=/path/to/sdk
export ANDROIDNDK=/path/to/ndk
export ANDROIDNDKVER=r10e
export ANDROIDAPI=19

export PATH=$PATH:$ANDROIDNDK:$ANDROIDSDK/platform-tools:$ANDROIDSDK/tools
```

Install Android SDK platform

Next, open Android SDK manager via

```
android sdk
```

Install the **newest** SDK tools, SDK platform-tools, and build-tools. Then, install the newest SDK platform (API 23 as the time of this guide) and the Android 4.4.2 SDK platform (API level 19):

A list of required Android SDK versions

Name	Rev.
Android SDK Tools	24.4.1
Android SDK Platform-tools	23.1
Android SDK Build-tools	23.0.2
Android 6.0 SDK Platform	API 23
Android 4.4.2 SDK Platform	API 19
Android Support Repository	25
Android Support Library	23.1.1

The executable is called `python-for-android` or `p4a` (both are equivalent). To test that the installation worked, try

```
python-for-android recipes
```

Build the application

1. Build the distribution

```
p4a create --dist_name=mi2 --bootstrap=pygame --requirements=pyserial,kivy,mobileins
ight
```

~~Caveat: there might be a bug when patching the jnius, do the manual patch instead. on Mac: /Users/Dale/.p4a/build/other_builds/pyjnius-python2-sdl/armeabi/pyjnius/setup.py~~

^^ This issue is solved: https://github.com/kivy/python-for-android/pull/642

2. Build the application

[Not ready] Go to `<MobileInsight>/demo_app` , and then `python deploy.py apk`

Manual build:

```
p4a apk --debug --compile-pyo --copy-libs \
--name MobileInsight2 \
--version 0.2 \
--package edu.ucla.cs.wing \
--private /Users/Dale/Workspace/mobileInsight/demo_app \
--icon /Users/Dale/Workspace/mobileInsight/demo_app/icon.png \
--presplash /Users/Dale/Workspace/mobileInsight/demo_app/presplash.jpg \
--orientation portrait \
--permission INTERNET \
--permission WRITE_EXTERNAL_STORAGE \
--sdk 19 \
--minsdk 14 \
--android_api 19 \
--sdk_dir /Users/Dale/Library/Android/sdk \
--ndk_dir /Users/Dale/Library/Android/android-ndk-r10e \
--ndk_version r10e \
--arch armeabi \
--dist_name mi2 \
--whitelist whitelist.txt
```