############################# Android Game Explanation #############################

The following is an explanation for how to run this python script in order to automate the popular android game ---Stick Hero-- as well as a short explanation about how it all works.

In order to get the python script to run directly on your phone you must do the following:
1. Enable usb debugging on your mobile device.
2. Get Android platform tools for your operating system at the following link https://developer.android.com/studio/releases/platform-tools
3. Download and set up scrcpy ** this is the most important ** this is how the script communicates to the python
4. Connect phone to computer via cable
5. Start server
6. Run python file

How the python script works (picture illustration to make explanation easier) :

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Using the PIL and numpy libraries the script takes a photo (PIL) of what is currently displayed on your phone screen. This file becomes available to python and using (numpy) every pixel is converted to an RGB value in the form of a list of lists (2d Array). The script then scans the data on the first column of pixels (RED line in the diagram) in order to find the first black (0,0,0) pixel. This location is the location of the top level of the platform in which the player is currently standing. From here the script looks at the data on that particular row (YELLOW line) and finds the varying values of pixels based on colors. This difference in color allows the scrip to calculate the distance between one pillar and the next (BLUE line). From here the script communicated to the phone by simulating a touch on the screen to create a line that is exactly the size of the blue line and thus making it to the next pillar. This process continues on and on.