**Universal JSON Proposal for TranslationEngine**

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While the TranslationEngine program works quite well at parsing JSON, pulling components and performing actions mostly based on ids ( or jerry-rigged workarounds which seek to make the most out of the information we are given with the JSON files) over the length of the semester it has become apparent that there are some issues we simply cannot create workarounds with by using the files that we are given.

These issues include:

* Certain actions such as “SWIPE-(direction)” being given without end coordinates or time duration. While we are given direction, the lack of coordinates means that we have no idea how long a swipe should be. This would make all the difference in whether or not an element appears or disappears from the screen. Incompete SWIPE information has the potential to absolutely ruin a test, especially Black Box tests.
* X and Y coordinate listings in JSON files which are completely out of the range for the bounds listed for some elements in UIAutomator.

The original device tested on should be listed in the JSON file according to its name at the following link:

* + <http://www.emirweb.com/ScreenDeviceStatistics.php>

This link contains statistics pertaining to screen size, resolution, etc. for a large number of mobile devices and tablets. Preferably, this information should be scraped, put into a database, and lastly used to keep track of information including original screen size of testing device and resolution. The database should be updated regularly with screen information concerning newly released devices, and possibly any custom emulators made by a tester on their machine.

With this information, devices which scale properly to one another and/or share resolutions should be able to share roughly the same tests, since the x and y coordinates of every action should be able to be scaled proportionately.

Additionally, this information could be used for error handling by allowing us to detect whether or not a particular JSON test is valid for the device the user intends to test it on before we even begin to parse the JSON. As an example, tests written in JSON which list specifications which match screen statistics for a line of tablets could be caught and prevented from being tested on Phones and vice –versa.

In general, devices with completely mismatched width:length ratios would not be able to share tests, and instead tests would have to be rewritten to accommodate these different devices. This would absolutely be a good thing because for a number of apps there are different views given to the user based on their device. Even in the case of apps where there is no noticeable difference to a consumer in the views, the tests should still be made from the ground up due to problems which may arise with the use of “android:id”-id based widgets.