A standard for "universal" UI automation

The Argument from Appium

Jonathan Lipps - OpenJS Standards Working Group Meeting - 2021-11-02

Context
(and miscellaneous background)

- Appium is an OpenJS project and has existed as a Node JS project for almost 9 years
- The point of Appium is to provide a Selenium/WebDriver-compatible interface for platforms other than desktop web browsers
- Appium is very popular (less so among "developers" than "QA engineers")
- I am the longest-tenured maintainer, mostly de facto responsible for project direction, and I think the time is ripe to engage the Foundation and platform vendors with an argument about standards-based UI automation
- ...You first! Looking for feedback, ideas, next steps
- Ultimately the target audience is platform vendors, who will need to buy in and build implementations

The preliminaries
(parts of the argument I hope I don't need to make explicitly)

- Apps are everywhere; people's lives depend on apps; etc
- Good quality apps are better than poor quality apps
- Automated testing practices helps improve app quality
- Well-designed tools are essential for reliable automation
- Platform vendors (Apple, Google, Microsoft, etc...) have a strong argument for implementing high-quality automation tools as part of their overall DX goals as well as overall platform goals

Platform vendors should invest in UI automation

- Platform vendors should invest in *all* kinds of tools related to testing and quality. One of those is UI automation.
- UI automation is famously unwieldy but also provides "highest fidelity" (not "highest granularity") feedback about app quality.
- Ultimately, the user interacts with the UI. This level of access should be susceptible to automation (within all appropriate security bounds).

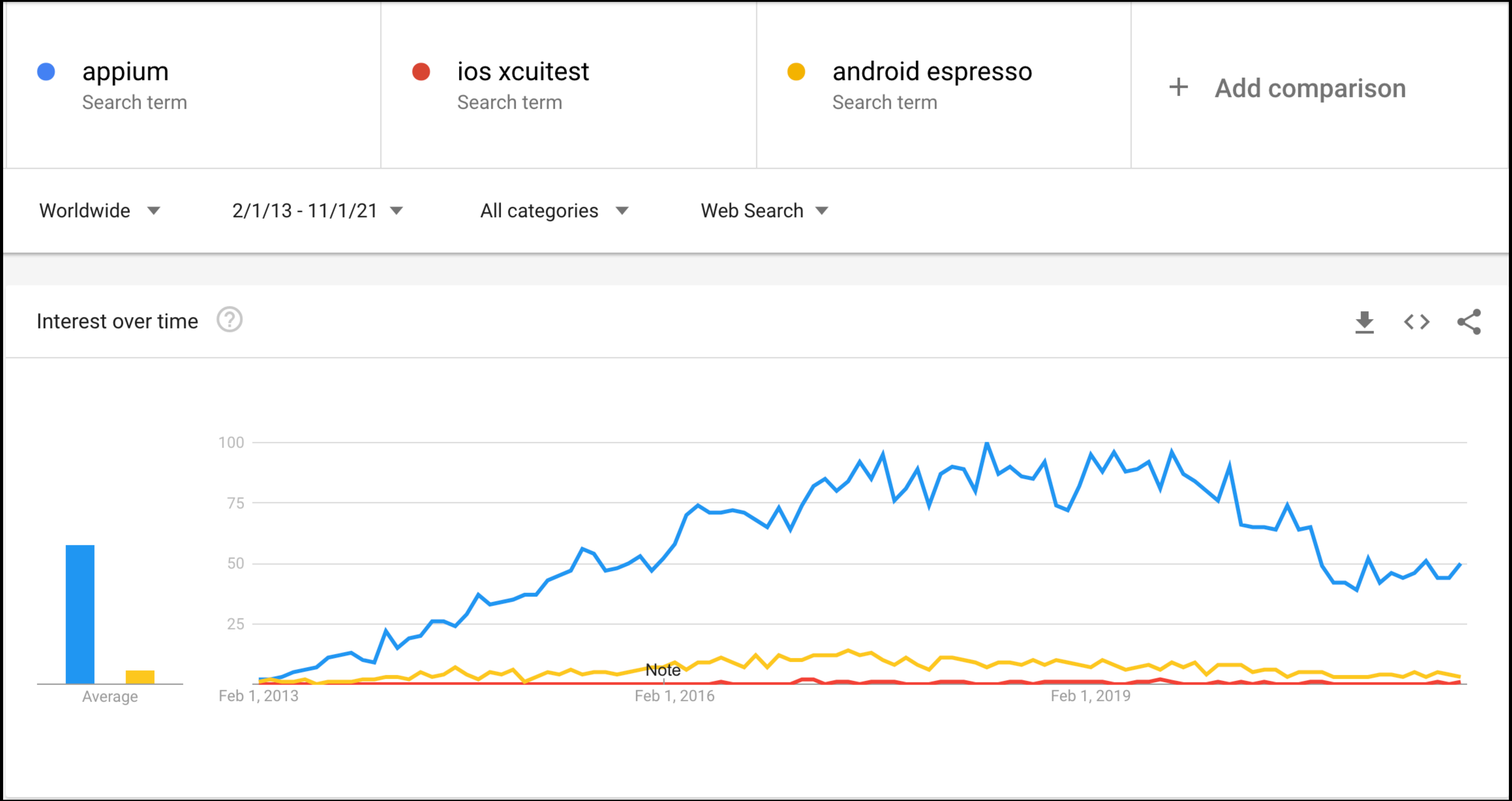
Platform vendors should support *standard* UI automation

- There's very little value in UI automation platform lock-in, given that it follows other more "important" aspects of developer lock-in .
- (Same point) granted that vendors need to differentiate and have some unfortunate built-in aversion to standards, this need not apply to testing tools.
- UIs are largely similar cross-platform (unlike internals), so a standard here is *possible*.
- The costs to vendors (loss of lock-in) are outweighed by the benefits (reduction of cognitive load, reuse of code and infra, skill portability, etc...)

Appium should be the UI automation standard

(or at least its starting point)

- Appium is based on (and is a valid extension of) an existing standard supported by all the usual suspects--the W3C WebDriver protocol.
- Appium is already a de facto standard for platforms beyond the desktop web; it is generally more popular than the natively-provided platform tools (citations needed; see next slide)
- Appium is popular because reasons
    - Client/server protocol = scalability, test code in any language
    - Testers != developers in most enterprises
    - Open source, DIY possible, avoid vendor lock-in, etc...



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Interest over time

Platforms should buy in to an Appium-inspired standard

(and write/maintain their own implementations)

- The Appium team does not have access to any vendor internals, and cannot make the best tools.
- The Appium team is always going to be reactive.
- Platform vendors already maintain browser automation implementations. It's the same idea!
- An "Appium" UI automation implementation need not be independent of existing automation technology. It could be a wrapper/interface.

Questions for this group

- Is this a convincing argument? If not what does it need to move the needle for the big vendors?
- Assuming standards work needs to happen (I think it does), where's the best place for that? W3C? Here?
- What's the right strategy for moving a proposal forward? Open letter? Backchannel politicking?
- The ultimate goal obv. isn't just a standard but one that is implemented and adopted by all the important players.