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A Developer Tool to Achieve Mobile Application Accessibility

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Abstract

Accessible mobile applications play a vital role in the hands of disabled and senior citizens. Despite the exponential growth of the mobile application market, the number of accessible mobile apps are quite low or partially implemented. Design and development of a mobile application with accessibility is often neglected by the developer due to challenges surrounding the area. Vague and confusing guidelines compared to standard web accessibility guidelines, implementation inconsistencies across platforms, lack of knowledge, use of multiple testing tools and complexity could be mentioned as primary challenges for the developer. Hence, developing an accessible app is mostly a trial and error process than a stepwise process. It requires a considerable amount of time and effort from the developer.

This study concentrates on the exhaustive list of guidelines, development guides, best practices, and tools used to implement and evaluate accessibility. And finally presents a guiding tool to the mobile developer in order to provide more accessible apps and reach a greater audience. The tool provides implementation guides and also provides the capability to manually and automatically evaluate accessibility by delivering a score at the end.

The tool was tested using many approaches. Functionality testing, non-functionality testing, memory usage testing and performance testing were few of them and all tests passed in a good level. The tool was also benchmarked with Google accessibility scanner and it performed well in capturing many different guidelines, but the Google accessibility scanner performed well in terms of capturing touch target issues because it has the capability to scan a running application. As future work automatic accessibility evaluation could be done in iOS, the tool should be able to scan a running application and also should try to automate many accessibility guidelines as much as possible.

Keywords: Mobile Application Development, Mobile Accessibility, Accessibility Guidelines, Accessibility Evaluation, Accessible Apps