

1. An investigation into the use of common libraries in Android apps

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Source: 2016 IEEE 23rd International Conference on Software Analysis, Evolution and Reengineering (SANER), p 403-14, 2016; **ISBN-13:** 978-1-5090-1855-0; **DOI:** 10.1109/SANER.2016.52; **Conference:** 2016 IEEE 23rd International Conference on Software Analysis, Evolution and Reengineering (SANER), 14-18 March 2016, Suita, Japan; **Publisher:** IEEE Computer Society, Los Alamitos, CA, USA

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Abstract: The packaging model of Android apps requires the entire code necessary for the execution of an app to be shipped into one single apk file. Thus, an analysis of Android apps often visits code which is not part of the functionality delivered by the app. Such code is often contributed by the common libraries which are used pervasively by all apps. Unfortunately, Android analyses, e.g., for piggybacking detection and malware detection, can produce inaccurate results if they do not take into account the case of library code, which constitute noise in app features. Despite some efforts on investigating Android libraries, the momentum of Android research has not yet produced a complete set of common libraries to further support in-depth analysis of Android apps. In this paper, we leverage a dataset of about 1.5 million apps from Google Play to harvest potential common libraries, including advertisement libraries. With several steps of refinements, we finally collect by far the largest set of 1,113 libraries supporting common functionality and 240 libraries for advertisement. We use the dataset to investigate several aspects of Android libraries, including their popularity and their proportion in Android app code. Based on these datasets, we have further performed several empirical investigations to confirm the motivations behind our work. (0 refs)

Inspection controlled terms: advertising data processing - Android (operating system) - software libraries

Uncontrolled terms: Android apps packaging model - Android analyses - library code - Android libraries - Android research - Google Play - advertisement libraries - Android app code

Classification Code: C6150J Operating systems - C6115 Programming support - C7170 Marketing computing

IPC Code: G06F9/46 - G06Q30/02

Treatment: Practical (PRA)

Database: Inspec

Data Provider: Engineering Village

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