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Title - Vulnerabilities testing framework for android application

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**Abstract**

Applications are widely used by millions of users to perform many different activities. Android-based smart phone users can get free applications from Android Application Market. Because some applications are insecure, attacker can steal private information from users.

The proposed system develops OWASP mobile application testing methodologies to know which applications are secure or not. By testing the application, consumers are convenient to use within the organization and consequently know whether applications are good or not for people who used the applications.

**Introduction**

Android is the powerful operating system supporting a large number of applications in smartphone. An Android application, also referred to as an Android app is a software application running on the Android platform. Apps can be installed manually, for example by running an Android application package on Android device. Because the Andriod platform is built for mobile devices, a typical Android app is designed for a smartphone or a tablet PC running on the Android OS.

Android applications put the security and privacy of an individual or corporation at risk. With more vulnerabilities attributed to mobile application flaws than any other category today, security has become a core concern for the business. There are thousands of user-friendly apps on the market for most specific needs, starting from chatting, multi-video conferencing, games, communities, trading, other financial services, and so on and so forth.

**Background Theory**

With more than 1 billion users worldwide and 2.5 million applications (and still counting) available across Google and Apple digital marketplaces, smartphones have become commonplace. The difference they make to our lives is stark and simple, and is impacting our day to day life in multiple ways \_\_ in particular, the way we interact, work, and socialize. The increase in demand from consumer market and processing power and the capabilities of smartphones, such as storage, GPS, camera, displays, and so on, have changed the paradigm of the development of mobile applications.

A May 2012 comScore study reported that during the previous quarter, more mobile subscribers used apps than browsed the web on their devices: 51.1% vs. 49.8% respectively. Market research firm Gartner predicted that 102 billion apps would be downloaded in 2013 (91% of them free), which would generate $26 billion in the US, up 44.4% on 2012’s US$ 18 billion. By Q2 2015, the Google Play and Apple stores alone generated $5 billion. An analyst report estimates that the app economy creates revenues of more than €10 billion per year within the European Union, while over 529,000 jobs have been created in 28 EU states due to the growth of the app market.

**Objectives of the Study**

* To know which application is insecure application
* To cover Android Application users’ sensitive information
* To support the user about the security risk of application before installing it

**Related Work**

There are so many ways to analyze different kinds of apps such as by analyzing signature feature, behavior features or anomaly features and so on. Among them, one presented by analyzing the apps based on permissions. And to get the correlation patterns of permissions, Singular Value Decomposition (SVD) technique was chosen.

**Contributions of the Proposed System**

* Ensure quality control of our Android app
* Release apps with confidence to the Play Store
* Perform the test within the emulator or on the device

**Overview of the Proposed System**

Basic Info, Name, Developer, …….

Explore Application

Financial Info, Registration, Sensitive Info, ……

Install Application

Extract APK

Hash

Testing with OWASP

Document

Figure: Work Flow of the Proposed System

**Conclusion**

Smartphone, as handhelds devices which have started a new revolution in software engineering, almost involved in everyone’s daily life. The applications which installed on mobile phone help and improve every day’s life and work of the users. By knowing which application they used are secure application or not, they will feel more comfortable upon applications. Therefore, the work that presented in this dissertation is well for people who used applications.

**References**

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