CSCI 420-03: Analysis Plan

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1 Research Questions

RQ1: *Do apps use all of the permissions they request?*
RQ2: *Are any of the following dangerous permission combinations included?*
`RECORD_AUDIO & INTERNET` *(eavesdropping),*
`ACCESS_FINE_LOCATION & RECEIVE_BOOT_COMPLETED` *(tracking),*
`CAMERA & INTERNET` *(stalking),*
`SEND_SMS & WRITE_SMS` *(use phone as spam bot)*
RQ3: *Do apps verify certifications incorrectly (Incorrect overrides of trust managers or error handlers methods)?*
RQ4: *Do apps use improper Hostname verification?*
RQ5: *Are apps using deprecated or vulnerable SSL protocols?*
RQ6: *Do apps have mixed SSL use/are vulnerable to SSL Stripping attacks?*
RQ7: *Are sensitive data or mutable objects used in any implicit intents?*
RQ8: *Is trusted content loaded within any webviews? If displaying user-provided content, is data loaded into webviews sanitized?*
RQ9: *Are applications that use webviews and* `addJavascriptInterface()` *correctly using the* `@JavascriptInterface` *annotation?*

2 Hypotheses

3 Evaluation Plan

A description of how you plan to answer the research questions. The experiments may mirror the research questions, or multiple research questions (e.g., **RQ??** and **RQ??**) may be answered by a single experiment. A simple approach for designing the evaluation plan would be to design an experiment for testing each hypothesis, which in turn will answer the research questions.

3.1 Name of Experiment 1

State some hypothesis for the experiment. Note which hypothesis and research question(s) it is designed to address.

3.1.1 Experimental Setup

Describe *how* you are going to test the hypothesis. That is, what techniques/tools you are planning to use. Go into as much detail as possible. Be realistic in what you can achieve in the given time frame.

3.1.2 Expected Results

Describe the specific measurements and metrics you plan to use. Describe what constitutes success (i.e., what you expect to achieve).

3.2 Name of Experiment 2

State some hypothesis for the experiment. Note which hypothesis and research question(s) it is designed to address.

3.2.1 Experimental Setup

Describe *how* you are going to test the hypothesis. That is, what techniques/tools you are planning to use. Go into as much detail as possible. Be realistic in what you can achieve in the given time frame.

3.2.2 Expected Results

Describe the specific measurements and metrics you plan to use. Describe what constitutes success (i.e., what you expect to achieve).

3.3 Name of Experiment 3

State some hypothesis for the experiment. Note which hypothesis and research question(s) it is designed to address.

3.3.1 Experimental Setup

Describe *how* you are going to test the hypothesis. That is, what techniques/tools you are planning to use. Go into as much detail as possible. Be realistic in what you can achieve in the given time frame.

3.3.2 Expected Results

Describe the specific measurements and metrics you plan to use. Describe what constitutes success (i.e., what you expect to achieve).

References