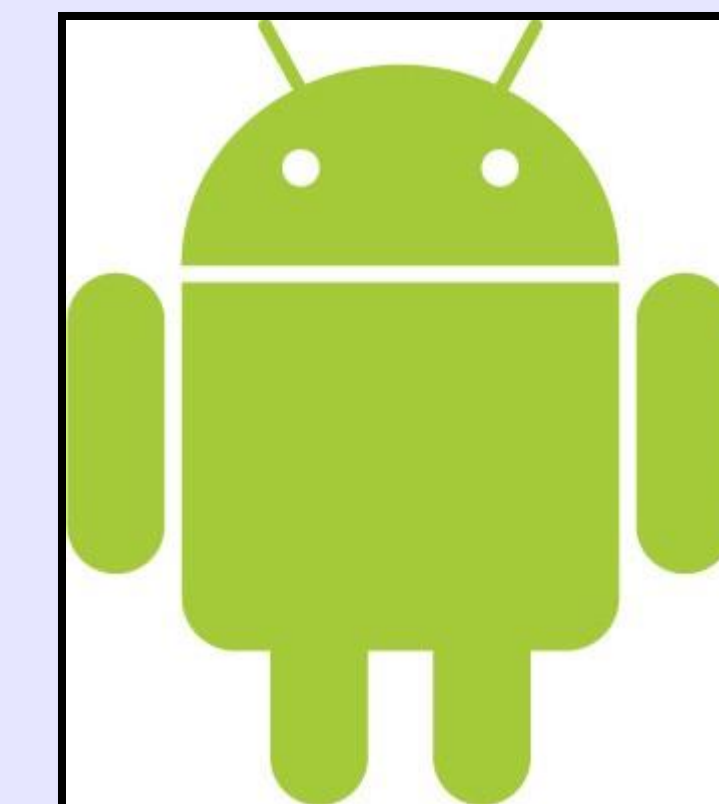


# Comparing Android App Permissions

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## Introduction

Currently, the only convenient way to make choices about what Android app to use based on permissions settings is to cycle through the most popular apps on the Play Store to decide which app requires the fewest permissions. As the number of apps in the Play Store grows and as an increasing number of people own Android phones, the security of these apps becomes a concern.

The purpose of this research was to develop an interface that can automate searching through the permissions of Android apps to best suit the user's preferences and to determine whether such an interface gives the user more useful information than the standard Play Store.

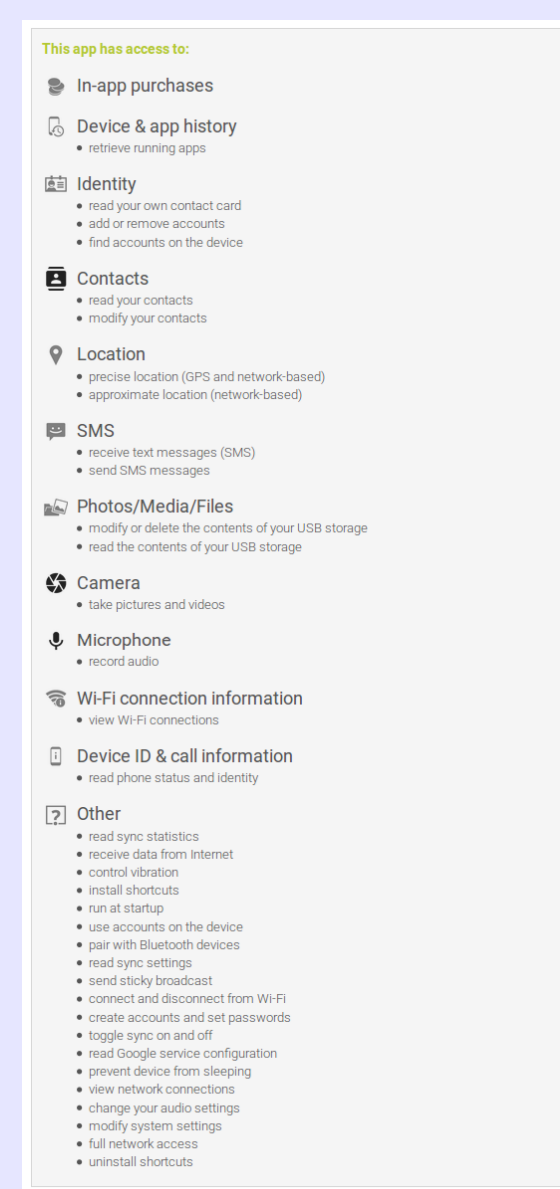
## Methods and Materials

The program was developed in Gauche Scheme using a web user interface. The interface allowed users to input their preferred permissions and returned a page displaying each app in order of descending desirability.

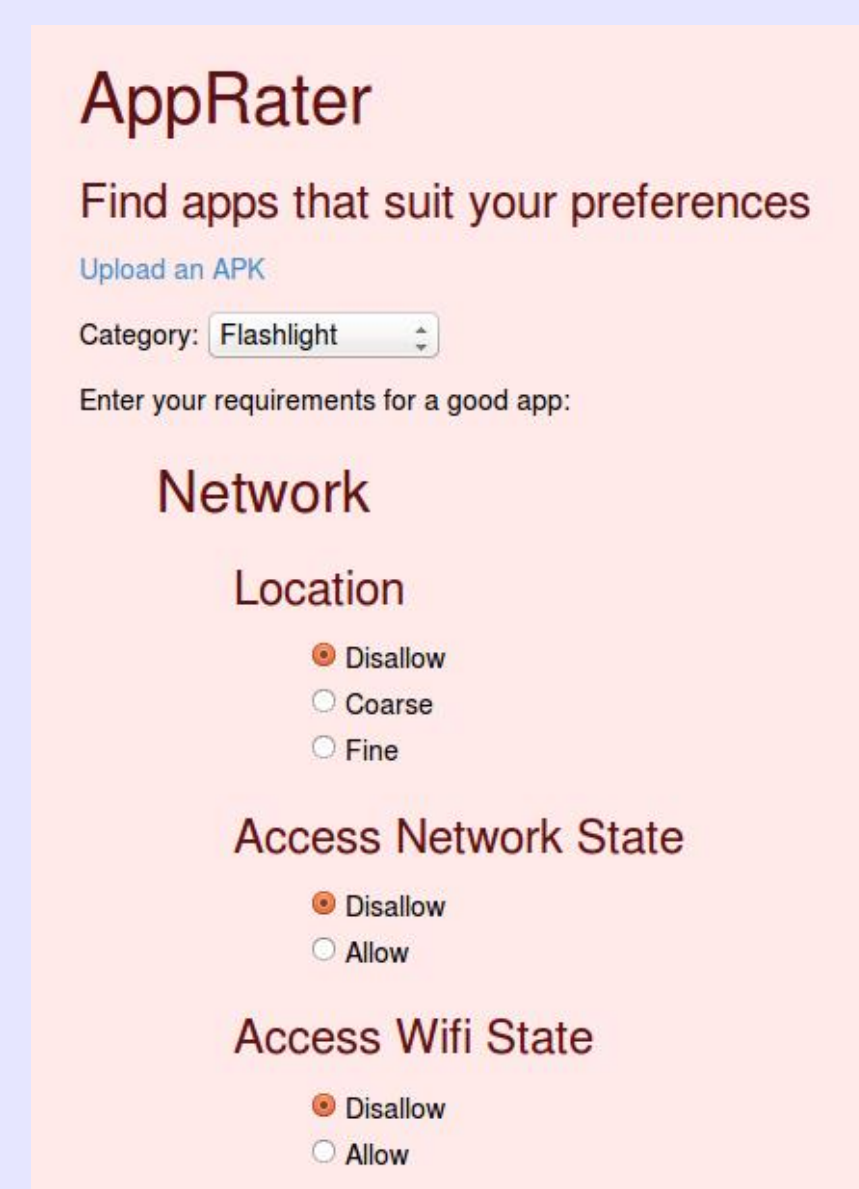
A survey of five questions, designed to evaluate the effectiveness of the new interface to influence the user was distributed by e-mail to a community of university students. It was hypothesized that the interface will make users more concerned about app security because it provides clear feedback comparing the apps, instead of displaying a long list of permissions which the user may not be concerned with. Rather, it allows the user to select which permissions matter and consolidate the results based on that information.

## Results

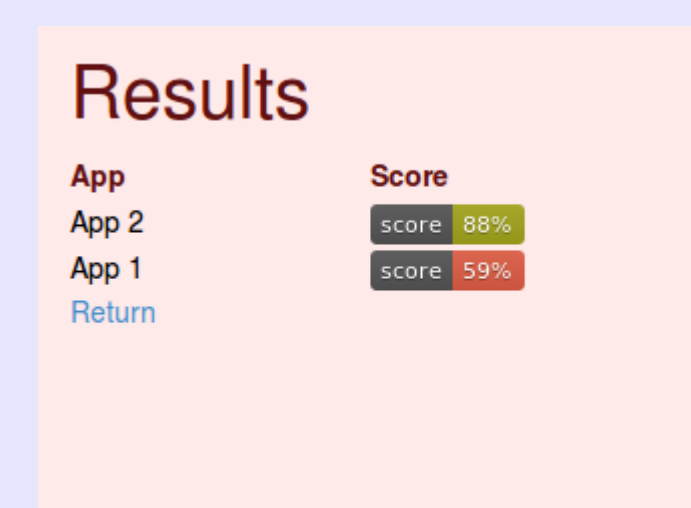
From the current Play Store:      The new interface:



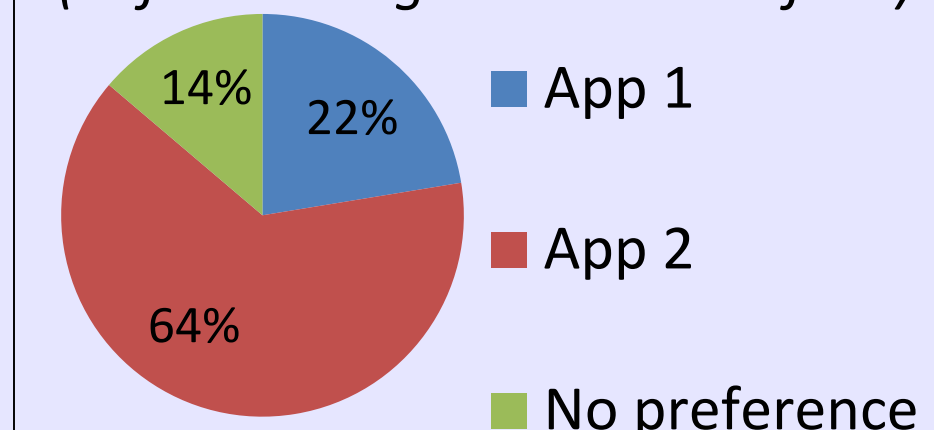
App 1



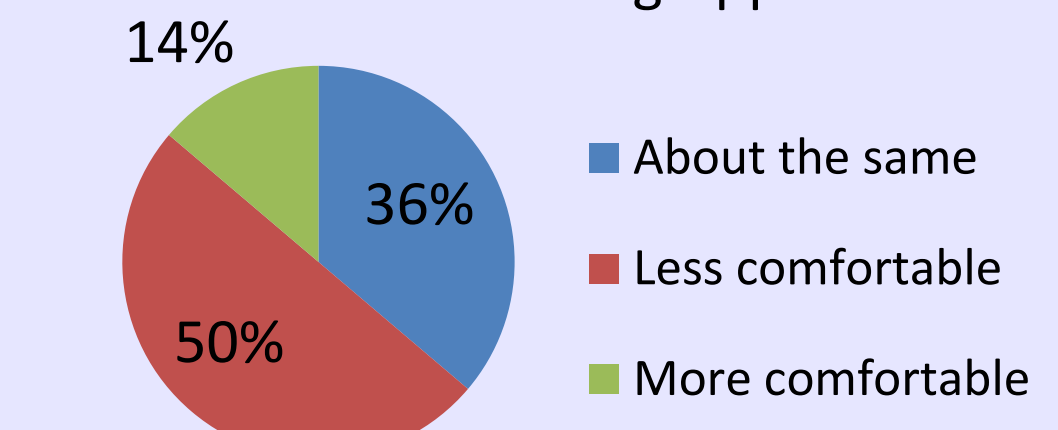
App 2



Which app would you rather dowr (before seeing the new interface)



After seeing this interface, how do you feel about downloading App 1?



58 students from Kean responded to the survey. We found that after seeing the new interface ("App 2"), students were more reluctant to download App 1 compared to App 2 compared to the current Play Store.

## Conclusions

This research showed that when given a new interface, people will re-evaluate the security of App 1 whether they would have originally preferred it or not. We believe that by refining the underlying algorithm used for this interface, the program can represent a useful tool for Android users to become more aware of app security and to make choices that better represent how they want their phone to be used.

Some results of this research are inexplicable regarding the answers of respondents, and provide information for future research directions. As many as 22% of the responding users felt more comfortable with App 1 than App 2 when presented with the Play Store interface, which is much more than expected. The main goal of future research should be to supply qualitative data to better understand how users felt about each interface and why the second one impacted their opinion.

## References

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