Slovenian Uprising
Analyzing Progression of Political Unrest via Twitter

Motivation
There is a growing political movement against corruption in the Slovenian government. Corruption allegations against Franc Kangler, mayor of Maribor, Slovenia, in November 2012 caused citizens to rally under the slogan "Gotof je!" (meaning "he is finished"). Kangler has since stepped down, but protestors continue to mobilize against other corrupt government officials by using the term as a hashtag on Facebook and Twitter. We wish to investigate properties of the movement around the #gotofje tag.

Question
Given the set of Slovenian Twitter users, how has the #gotofje tag propagated throughout time? From this graph, to what degree has the Slovenian Twitter population been exposed to the hashtag? Are there cliques, clusters, or small sub-communities within the population that differ in propagation and exposure compared to the country-wide population? Finally, is the use of the tag on Twitter representative of the population?

Dataset
We have collected Twitter posts made with the #gotofje tag since November 9, 2012. On March 20, 2013, we began collecting the user account information for those posts. By collecting data on their followers and those people who follow them, and narrowing the set based on the optional time zone and location fields, we have collected information on 48,367 users who are likely to be Slovenian. This is out of a population of two million living in Slovenia.

Approach
We restricted our set of users to those that publicly expose their followers list so that we may know where each user sits in the graph. We also remove users who have made fewer than 5 tweets to maintain a graph of reasonably active users. Using this dataset, in combination with the posts tagged with #gotofje, we graph the Slovenians who have used the hashtag in a tweet and observe this graph has changed over time. We then use the fast modularity maximization algorithm ("Finding Community Structure in Very Large Networks", A. Clauset, M.E.J. Newman, C. Moore) to identify clusters of users, and repeat the process.

Results
Of our original 48,367 users, we find 15,346 to be active. Of the population, 10% used the #gotofje tag in a new and original tweet with 4% using the tag only in retweets. The remaining 86% of the population were passive observers, never using the tag.

In Figure 1 we observe the usage of the tag over time, with the 10% original tweeters saturating early, the additional 4% retweeters, and 84% of the population that is exposed to the tweet by a follower relationship.

We identified 29 communities within the population, but we restrict our analysis to the three that contain more than 100 users. Figure 2 is the same graph for each community, adding the visibility of communities’ members tweets on the entire population in addition to the members of that community. Surprisingly, even within this subgroup the results are nearly identical to the global population.

Lessons Learned
It is fascinating to us that, for nearly every two activists using an uprising tag, there is another who only propagates the information and does not contribute more. Also, detecting communities within a population is difficult, and we consider using an algorithm that also takes into account tweets or content, rather than simply the follower graph.