Description

The first feature provided by our framework is a uniform user interface, which allows the user of the framework to input information such as the network he or she wants to analyze, a specific user ID of a social network and then let the framework to start an analysis. Also it provides an area on the UI for the analysis plugins to render the analyzing results to the users.

The framework asks the user of the framework to specify a user ID in order to perform the analysis. With a user ID specified, the data provided by the framework includes the followers and followings of the user and the posts of a user that may be tweets in Twitter or commits in GitHub. For each post, the framework provide data such as the time it was posted, the message of the post and the times that the post is shared by others. When an ID is provided by the framework user, the framework will call the data plugins to retrieve these data from the APIs provided by a social network. When the query is completed, the framework will cache and update the data. Then the framework will iterate and notify the analysis plugins that the data has been prepared. Analysis plugins will perform their own customized data analysis and return a JPanel to the framework to render the results.

We did a research on the APIs to verify the feasibility of providing the data our framework wants to provide. We can get the user information from a social network API by giving the user ID and the API will give information such as the followings and followers of the user and the ids of the user's posts. After having the ids of the posts, we can get the information related to the post from the API, like the posts' message, and how many times the post is shared.

There are several hot spots in the framework. First of all, the data source is extensible that a data plugin developer may chooses their own data source such as Twitter, Facebook or GitHub. Besides, with the data provided by the framework, data analysis plugins are able to perform their own customized analyses.

The constraints include that the data that is retrieved by a data plugin is defined, so it may not be possible for the data plugin to provide customized data types. Also, it may not be possible to analyze a social network that does not provide the kind of data required by the framework. For analysis plugins, they must provide a JPanel to the framework to render the analysis results. Thus, analysis plugins are not supposed to provide results that are rendered by a video or a webpage.