

# Communities within a Social Network

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## Overview

This project investigate how social network switching from product A to product B depending on product reward points (mean product popularity) and number of other people connected in network. It will show how and what number of user switchind between products. We will use GUI to show visualization of data.

## Data

The provided UCSD facebook data and added some data for purpose of the project.

## Questions

Examine how to determine which user should decide to switch from current product to another? Will be used reward points schema to determine which product is better an then based on number of friends choose product. How to show data as a visualization to end user.

## Algorithms and Data Structures:

First find ego network of specif user, to create network of users and determine which product they use and how make them to change decision about using product.

**Easier Question:** The algorithm will iterate between users connected in network and choose if user will switch to another product or not.

**Harder Question:** How to optimal iterate throught whole proccess in most effcent way. What API use to visualization data for end user.

## Algorithm Analysis, Limitations, Risk:

**Easier Question:** It looks like algorithm will run  $O(n)$  times where  $n$  is number of iteration between users that need to be check.

**Harder Question:** Need to determine reward schema – which product is better to use and how to calculate it. That will involve end user to interact with application. Need to figure out how it will be done. Then simulate whole proccess and see how it works.