

COMP1002 Assignment Documentation

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1 Overview

This program is designed to simulate a social network. The user interface is as specified in the assignment brief, with additional functionality including graphical representation of the social network in interactive mode, and interactive liking/unliking of posts.

There exists only one post at a time, with a new post being loaded when the current post has not had any activity in the last timestep. The original poster always likes their own post. A user can only like a post once.

The simulation consists of timesteps, with a function `update()` to move between timesteps.

The social network consists of a set of users that may follow each other, which has been represented in code as a directed graph. Users may not follow themselves, or follow each other more than once.

The update algorithm works as follows:

1. Check that there exists some users that have liked the post in the previous timestep. If there are none, the update ends and the next post is loaded.
2. Iterate through all users who liked the post in the previous timestep. Each of their followers is 'exposed' to the post, and have a chance of liking the post. This chance is sampled from a Bernoulli distribution with probability $\text{clamp}(\text{prob_like} \times \text{clickbait_factor}, 0, 1)$.
3. If a user likes a post in the current timestep, they have a chance of following the original poster. This is sampled using the same technique as above, with global probability prob_foll .

Note that in the above algorithm, if a user does not like a post, they may potentially be exposed to it later via a different friend. This behaviour is intentional, as it incentivises a highly connected network.

2 Justification

3 Generated Documentation