Design Decisions – Milestone 2

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This document provides detail on design decisions made on the SocialSim project, explaining the rational behind all design decision. The project follows following java beans convention, allowing our team members to save with the XML encoder and decoder. The project is currently separated into 5 main sections:

* Simulation
* Document
* User: Consumer & Producer
* Searching
* Main Window

# User: Consumer & Producer

The primary change made to the implementation of Consumer and Producer was the introduction of an abstract User class. The Consumer and Producer now inherit from the abstract User class. The User class has a list of followers, a list of Users they are following, the User’s payoff, their tag, ID, preferred search method, and the list of documents they like. It also contains shared methods to follow users and like documents (as well as common assessors & modifiers). When the Consumer and the Producer class inherit from User they implement two abstract methods responsible for: how they take their turn (takeTurn) and how they calculate their payoff (caluclatePayoff). This allows the Consumer to behave differently from the Producer. One example of such behaviour is the Producer’s payoff calculation. The Producer’s payoff is calculated by examining the top k documents. The Producer’s payoff is incremented after every search by the number of its own Documents returned by the User’s search method. This design change was discussed with Professor Babak Esfandiari.

# Document

The Document class represent a document. It includes data to be used as metrics for the simulation. The Document is a representation of real documents but only include relevant simulation data. It stores a list of who likes that document, and a method to add to this list.

# Simulation

The simulation currently keeps track of all documents, consumers and producers. Since consumer and producers inherit from User, they are contained in a single User list which makes selecting whose turn it is independent of User type. This was modified from Milestone 1, as before it contained a list of Consumers. It is the central hub of the emulation software. It currently keeps track of all documents and the simulation state. The user interaction is handled by a Main Window, which gets updated by the Simulation. The simulation handles starting the game and controlling whose turn it is. It also updates the users each time a turn is taken and passing that information to the Main Window.

# Searching

Searching interface is using the strategy design paradigm to use different methods of selecting documents to discover what searching method is the most beneficial to the consumer and the producer. The consumer and the producer store which search method they use, as it may differ per user.

# Main Window