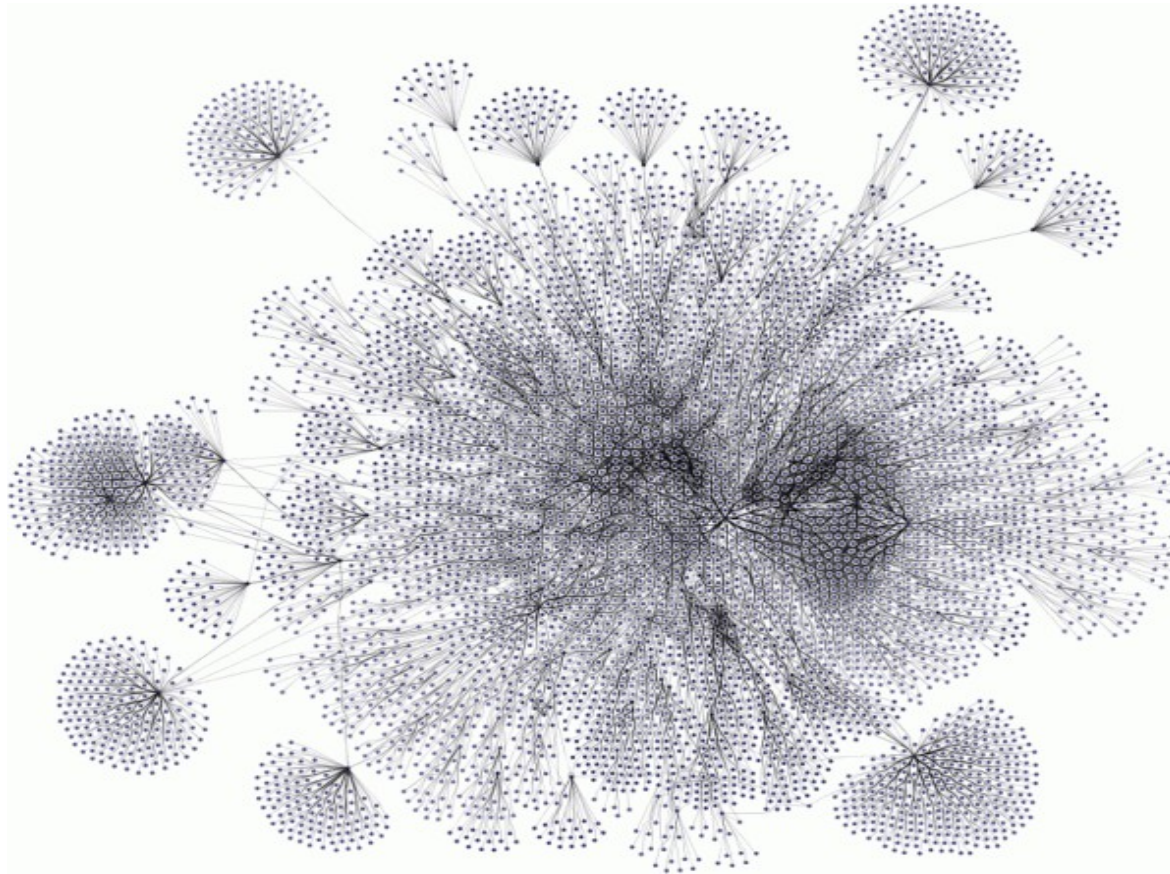


# Project II

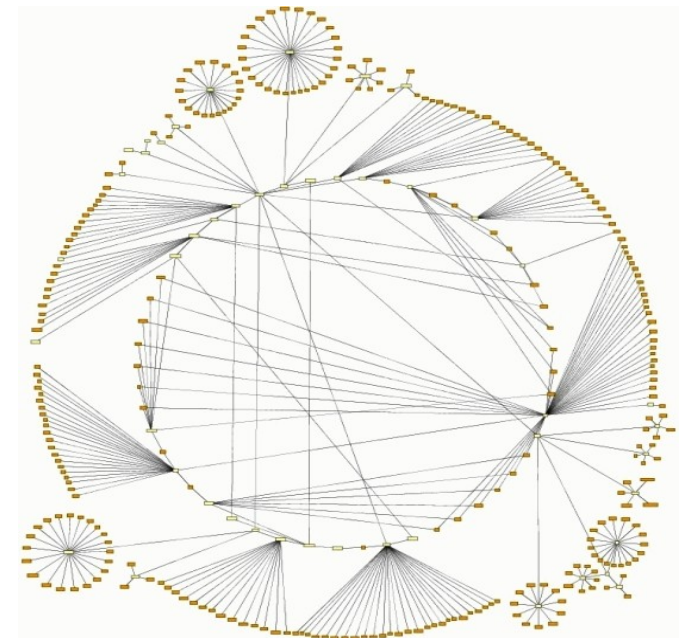
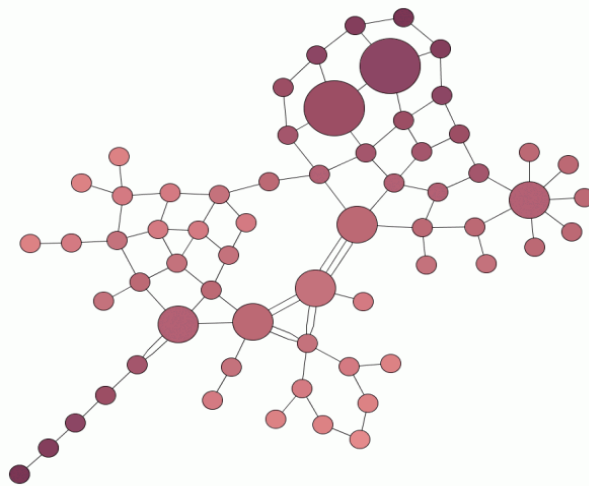
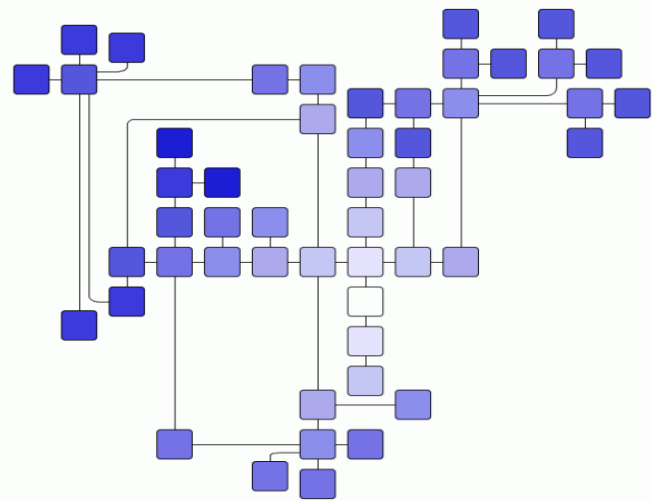
## Graph Layout Optimization



581339 Three Concepts: Utility (6 cr, 3 cu)

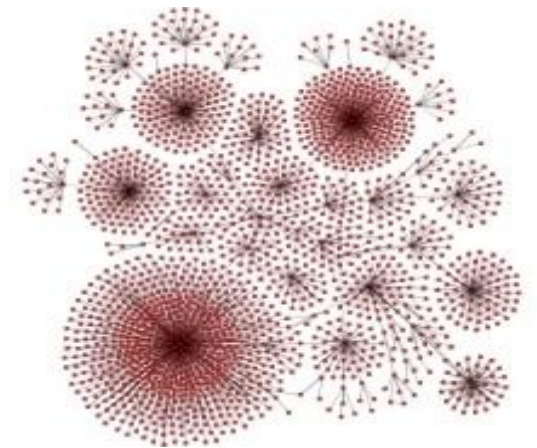
# The problem

- Graph visualization.
- Automatic layout of a graph on a 2-dimensional plane.
- Goal
  - Clear and understandable format that facilitates interpretation.
  - “Looks nice”



# Task

1. Design a utility function that measures goodness of a graph layout.
2. Write a program that finds good layouts using the utility function.
3. Participate in an (informal) experiment
  - Judge the quality of layouts optimized by other teams.
  - Rank-based scoring



# Technicalities

- Visualization program will be provided.
- Drawing area is 640 x 640 pixels.
- Nodes are circles with radius of 8 pixels, and the node number drawn inside.
- Edges are straight lines with width 1.
- Input: the number of nodes and the list of edges as pairs of nodes.
- Output: list of node coordinates.
- Your program should work with 100 nodes and take no more than 2 minutes to complete.

# Submission

- Write a short document that
  - Describes and explains the utility function,
  - Describes the search algorithm, and
  - Reports the results of your experiments.
- Turn in the source and binary codes of the search algorithm.
- Prepare a short oral presentation on your utility function and the experiments.