CST315 Software Enterprise: Concept Mapping **Fall 2015 Final**

Concept mapping is a knowledge organization technique where an individual or group organizes knowledge by labeling and visualizing relationships between concepts. In a concept map, nodes represent *concepts*, and labeled links represent *relationships*. Links only connect two nodes at a time, though higher-order node structures may be constructed to create more complex graph structures. Two concepts connected by a relationship form a *proposition*, a term you might remember from logic class. A (logical/mathematical) *interpretation function* maps each proposition to one of {true|false}, though it is generally assumed that if the proposition is included in the graph then it is true.

You are asked to create semi-structured concept maps. "Semi-structured" because you are asked to limit the concepts and link types you use, and to add extra information through the use of visual cues such as capital letters and node coloring.

Activity I: Download and Install CMap

1. You will create concept maps using the freely available CmapTools program from IHMC. Cmap is a multi-platform tool you may download from http://cmap.ihmc.us/download/index.php. Note you can give them any bogus email address and name you like, it is not required to make it to the platform download page. Download version 6.01.01.
2. After installation take a few minutes to run through the basic use of the tool. For example, in the untitled default window, create and link simple concepts together in any domain.
3. A starting template for this exercise is available at http://www.public.asu.edu/~racuna1/cst315-2015-fall/base315f15.cmap . Put this file in the "My CMaps" local directory (under your "My Documents" in Windows or simply "Documents" on Mac). NOTE: you may install the tool on ASU's computers; however it will get wiped out when you log off (which is OK).

Activity II: Construct first concept map

The concept map you are asked to create relates course topics to each other.

4. The base315f15.cmap file is a concept map that consists only of a set of nodes. Your task is to create a full concept map out of these nodes by relating them to each other. Ground rules:
    a. You may relate concepts directly to each other, but keep in mind the direction has meaning.
    b. You may create new nodes to help you organize concepts. But these new nodes must be colored GREEN.
    c. You must label each link with a single word that describes the relationship. If the connection is considered strong, then you should write the label in all CAPS. Otherwise normal case indicates a normal strength relationship.

Example: Suppose you are relating the concept "province" to the concept "state". One way to do this directly is shown on the left of the figure below, and another way through a 3rd concept is shown on the right:

Note on the left the use of CAPS for "IS-SIMILAR-TO" denoting an especially strong connection between the two. Note as well the direction of the relationship, which should be read as the proposition *A province is similar to a state*. On the right, the mapper felt it necessary to relate the two target concepts through the use of an extra node, resulting in two propositions, *A province is a governed territory of a nation* and *A state is a governed territory of a nation*. The added concept is in green and the two target concepts are in blue and connected directly from target to new concept. The relationships do not have to be the same in every case as in this example. Finally, two concepts with no path between them are assumed to be unrelated in any way, which is different than saying "I don't know if they are related." In effect, you must make a decision on whether two concepts are related and what to name that relation.

Activity III: Submit your Concept Map

Your concept map will be used as part of an assessment process that helps us determine whether the concepts are learned effectively in a project-based course. You will receive ½ lab credit for completing this exercise (there will be another ½ lab later in the semester). You will receive this credit for completing the lab in a good faith effort; you will not be scored on the contents of the cmap itself.

Steps to submit:

1. Select "File" → "Save As", and when prompted, name your file <asurite>_315f15_1.cmap. For example, I would save my file as "kgary_315f15_1.cmap".
2. Upload via the submission link to Blackboard. See BlackBoard for the submission deadline.