Problem Finding & Research (Group)

Due: Tuesday, January 22, 2013

Overview

Your assignment is to do concept mapping on a problem domain. Use the higher level, more generalized problem domain of the project team you are on (i.e., for "personalized workout coach" pick the domain of exercise and for "the happiness project" pick mental health, etc). Using this technique generate 7-10 problems areas that are promising for further research. From those pick the 3-4 best problem areas and analyze which make sense to do further work on for the class. Perform an analysis of the best problem to work on and some basic research about that area.

Concept Map

Concept Mapping is a way to quickly come up and reflect on some problems in a particular domain. The steps:
1. List 10-20 words associated with the topic
2. Group them into named categories
3. Start diagramming
4. Add categories + examples
5. Label relationships between concepts (e.g., enables, employs, stakeholders, consumes, etc.)
6. Keep going until you lose momentum (and/or run out of time)
7. Highlight 8-10 areas for further investigation
8. Prioritize (i.e., create matrix of significance, feasibility, your interests) & select 3-4

You should generate 8-10 problems in your domain and then using the prioritization matrix select 3-4 problems to follow-up with further analysis/discussion. After some basic analysis, pick one of these 3-4 problems for further problem research (see below) and justify why you chose it.

Problem Research

Using web search, deep reflection, informal interview (e.g., chatting your friends), or any other research method you can bring to bear in the next 4-5 days, find out more about your chosen problem area in terms of its *Significance* (market size, why is it important? who is impacted?, etc.), *Stakeholders* (target users as well as other impacted and interested groups), and *Precedents* (what has been done so far, who are the competitors, etc.).

Deliverable

You will submit a PowerPoint/KeyNote presentation deck summarizing your work (submit one per team to the TAs in dropbox before the start of class on Tuesday, Jan. 22nd). Pictures are free (so **include pictures of your concept mapping** result) and *encouraged – we'd suggest 12-18 slides.* Your slides should follow the outline below.
1. Introduce Team (team title & for each member: name, picture, major, outside interests) – [1-2 slides
2. Concept Map Result (image showing what you produced) [1-2 slides]
3. Top 3-4 Problems
    1. Show prioritization matrix for 8-10 [1 slide]
    2. Give brief sentence about each of 3-4 top problem [1-2 slides]
4. Top Problem
    1. Brief overview/statement [1 slide]
    2. Reasoning for Selection from Top 4 [1 slide
    3. Analysis of Problem
        1. Significance [1-2 slides]
        2. Stakeholders [1-2 slides]
        3. Precedents / Prior Work / Competition [3-5 slides]

Grading Rubric (100 points)

Team Introductions (10 points)

Introductions should include creative team title, as well as each member's name, picture, major, and outside interests.

Brainstorming (15 points)

Idea generation should start on a higher level than original project proposal. Consider the problem at hand with a broad perspective and explore a wide range of ideas.

Problem Space Exploration (20 points)

Ideas brainstormed should be categorized, diagrammed, and connected in a way that makes sense. Key problems should become apparent through this step.

Problem Prioritization (15 points)

Analyze problem areas with careful reasoning. Problems selected for project focus should offer opportunity for innovation as well as make sense for using technology to solve.

Problem Research (40 points)

Significance, stakeholders, and precedents thoroughly researched. Information should be clearly presented.