COMPUTER-SUPPORTED CO-OPERATIVE WORKING
CROWSOURCING TASKS

Group Project

This document describes the course-work to be completed by the students who are taking the module on CSCW in the academic year 2011/2012.

Mark component: Group work = 100%[1] (50% of total module mark)

<u>Learning outcomes</u>: the project is designed to give students first-hand experience on social computation and crowdsourcing. The students will work in the design, implementation, and evaluation of crowdsourcing tasks. They will learn to analyse and interpret data within the theoretical frameworks introduced in the course, and to write a research report. Students will be exposed to typical group work dynamics, and will learn how to share information and co-ordinate tasks.

<u>Deadline</u>: May 28th – the final report will be handed in to Maria Menendez – alternatively the report need to be submitted at least 2 weeks before the date the students intend to take the exam

<u>Objectives</u>

The assignment consists in the design, implementation, and evaluation of crowdsourcing tasks to be used in a social application for researchers. The design of crowdsourcing tasks involves the definition of the task (what do we want to know from the contributors?), decomposition of the task in micro-tasks (what do we ask to the contributors?), definition of methods for quality control (how do we assign level of confidence to the crowd-sourced data?) and methods for aggregation (how do we combine all the responses?). Examples of research questions addressed by the assignment are:

a) Are there "best practices" for the design of crowdsourcing tasks?

b) Which are the metrics which measure the quality of the task/results?

c) What is the effect of community (human computation vs social computing) on crowdsourcing? Does it have an effect on the metrics used for measuring the quality of the results?

In order to answer these questions, students will have to obtain real life data from potential users of the system (further details about the platform to be used will be given during the project presentation).

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[1] The project will include both individual and group activities. Students will hand-in evidence of their individual work (interview transcripts and data analysis), which will be marked for completeness and accuracy and influence the student's mark in case of discrepancy with the group-work mark (+ - 5%). Students will also be invited to evaluate each group member contribution, including their own. Evidence of exceptional performance or sub-average contribution will be taken into consideration in the final mark.

Methodology

The project consists of the following activities

I. Methodology definition. The group will do a literature review on crowdsourcing and task design. The group will design the crowdsourcing tasks (task, quality control method, and aggregation method), implement them, and run an evaluation. Quantitative data will be collected from the contributors' logs and existing database. Optionally, qualitative data can be collected. Data collection for qualitative analysis might include sampling procedures, outline of the semi-structured interviews (including question wording), and a format for activity logging. An indication of data analysis procedures should also be defined at this stage, although may be revised after the analyses of the first interviews or the first users' logs.

II. Data collection. During the data collection for quantitative analysis, users' actions will be stored in logs (users' actions should be linked to users' profiles) and the crowdsourced data will be automatically stored in the database. During the data collection for qualitative analysis, each student will carry out the interviews following the methodology defined by the group. It is recommended that the interviews are recorded. Transcripts of the interviews, supplemented by screen shots of the interviewee virtual space, will be prepared by each student and shared with the group.

III. Data analysis. For the quantitative data analysis, logs and datasets will be analysed. For the data analysis of qualitative data, interviews and logging data will be analysed by the group who will also define the outline for the follow up interviews, to be conducted by each student with one selected participant.

IV. Report writing. The group will produce a 20 pages (max) report including the literature review, task design, implementation and results of evaluation. Report writing is both an individual and a group activity. All members are expected to contribute to it and the report will be marked as a group deliverable not as a collection of chapters authored by different people. The report will be composed of:

    o Executive summary (1 page stating the main findings and recommendation form your study)

    o Related work (literature review on similar studies)

    o Objectives (stating and justifying the objectives of the study)

    o Methodology (clear description of the evaluation procedures)

    o Results (clear report of what was found during the study)

    o Conclusion (recommendations, suggestion for further research)

- Deliverables: a paper copy of the report and a CD rom including, Interviews transcripts, and an electronic copy of the report

<u>Help and contact information</u>

The work will be carried out independently by the students under the supervision of Maria Menendez (<menendez@disi.unitn.it>) who will organise and participate in group meetings. It is of utmost importance to the success of the project that each member of the group contributes to the work. In case of problems and conflicts which students are unable to deal with independently, they are invited to e-mail Prof. De Angeli (deangeli@disi.unitn.it), copying **<u>each group</u>** member in the e-mail. People who did <u>NOT</u> contribute to the group work will receive a lower mark (up to 0 in case of no contribution at all).

A reading list will be distributed separately with clearer design spec.

Marking scheme

Presentation (10%);

Background research (20)%

v Validity and reliability of methodologies and procedures applied for design (30%);

v Critical analysis of evaluation results (20%);

v Quality of design suggestions (10%);

v Reflections and suggestions for further research and new design spaces (10%).