Freie Universität Berlin, Software Engineering Research Group
Prof. Dr. Lutz Prechelt, Franz Zieris

Practice sheet 4 **Survey: Method and Topic** due on 11.05.2015

The remainder of this semester's tutorial will consist of a small project. You will conduct a **survey** in small project groups.

With **this practice sheet**, we are in the first step of the research process, where you
- decide on the topic of interest,
- formulate the research question and hypotheses,
- think about how to operationalize the research question and the hypotheses, and
- select a target population.

In the following phases, i.e. the **next practice sheets**, you will
- design, test, and revise the survey instrument, the *questionnaire*,
- administer the survey,
- collect, validate, and analyze the data
- answer the research question, and
- present the results.

See the last page of this practice sheet for more detailed information.

Task 4-1: Literature research: Questionnaire design

1. When planning a survey, which aspects and typical problems do you need to consider?
2. Search for methods of how to develop a research question and hypotheses, and how to operationalize their aspects. Explain these methods.
3. What are the different kinds of survey questions and what are their respective pros and cons?
4. Read about the question wording in a questionnaire. What are the criteria for good questions? List the Do's and Dont's and provide examples to explain them.

Task 4-2: Choose a topic

1. Select the topic of interest you would like to investigate in your group.
2. Familiarize yourself with that topic. Only then can you design a good survey. Investigate whether there are already comparable studies to the one you plan.
3. Develop and formulate research questions and hypotheses and decide which one to answer with the questionnaire. As the scope of most topics is quite broad and diverse, you need to focus with your survey. Write down your considerations. Also note those aspects you decided to drop, and why.
4. Use the method you found in **Task 4-1 2.** and write down how you want to operationalize which aspects of your research question.
5. Finally, delimit your specific aim and decide on your research question. Also form some early ideas regarding the form and conduct of the survey: group of participants to be targeted, form and distribution of the questionnaire (should be web-based), gathering of answers for the evaluation.
6. Create a wiki-page in the KVV for your survey project. During the next weeks, you will present the output of the survey-concerned tasks there.

   Name the page according to the following scheme:

   `<ProjectName> - <Surname 1> {, <Surname n>}*`

Some advice

Topic areas

Areas for potential topics have already been presented in the last tutorial, including:

- Consequences of the change to the Bachelor/Master system for the studies of computer science (lecture's organization).
- Effect of having to work while studying on study duration and success.
- Preconceptions of computer science/computer scientists.
- Usage of software (OSS, e-mail, data safety, ...)
- Software engineering: theory and reality of different activities or problem areas.

You can also pick your topic from a different informatics-related area.

Project timeline

CW 19 Learn about surveys, choose a topic (this sheet)

You determine the concrete aim and focus of your survey (concrete research question(s)).

CW 20 Design the questionnaire (sheet 5)

You design an adequate catalogue of questions, develop the concrete questionnaire, and implement it as a web form.

CW 21/22 Validate and improve the questionnaire (sheets 6 & 7).

You will peer-review each other's high-level survey design and more detailed issues (layout, formulation, etc.).

CW 23 Pilot testing and recruiting (sheet 8)

You run a pilot test and give helpful feedback. In the pilot test, three to five suitable participants fill in the questionnaire while under observation (but without receiving help) and document its strengths and weaknesses. After receiving the results, you finalize your questionnaire.

You look for and choose forums in which to present your survey and ask for participation. Possible sources for participants are university lectures (via the lecturers), relevant mailing lists, and possibly others. You formulate and review a suitable recruitment letter.

CW 24–26 Conduct the survey; prepare interim report (sheets 9 & 10)

You send off your recruitment letter; the survey starts. Duration: 2 weeks. Before the end of the first week you prepare an interim report: How many questionnaires have been completed? How complete? Who are the participants?

CW 26–28 Evaluate the survey's results, present the results, and compile a final report (sheets 12 & 13).

You compile the answers from all questionnaires in machine-readable form. You evaluate them: characterization of the respondent's population; global overview of the results; analysis of the correlations between answers and respondent/domain/etc. You summarize the most interesting results on slides to present them within 5 minutes.

Total effort

This course is worth 5 credit points, each of which being the equivalent of 30 hours of work. The total effort (including lecture, tutorial, and exam) therefore sums up to 10 hours per week over 15 weeks.

Per week (and person) you need to invest about 5 hours of work for the tutorial in addition to being present. Therefore

- split the work sensibly within your group,
- work as a team, i.e. help each other, and
- start early enough.