Guidelines for the project module of the master's degree program Mobile Computing

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1 Introduction

This document contains the guidelines for the project modules

- Project 1 (PRO-1-M) in the first semester

- Project 2 (PRO-2-M) in the second semester

- Master Thesis Project (PRO-3-M) in the third semester

of the master's degree program Mobile Computing. It contains all relevant information for deadlines, coaches, meetings, documentation, submissions, presentation and composition of the grade.

2 Processes & Deadlines

It's the idea of the project module line to find and work on a topic suitable for a master thesis, whereas the project provides a prove of concept for the master thesis. To increase the result quality (consequently of the master thesis), it is recommended that at least two project modules deal with the same topic. It is possible to change a project topic, but the overall time available to work on the project is reduced and consequently more time is needed to finish the master thesis.

In the following section the most important deadlines and aspects for the project process (s. Figure 1 and Figure 2) – finding phase and realization phase – are explained. The exact dates will be announced on Moodle in time.

2.1 Finding phase

The first semester of the master degree program is about finding a suitable project topic and advisor.
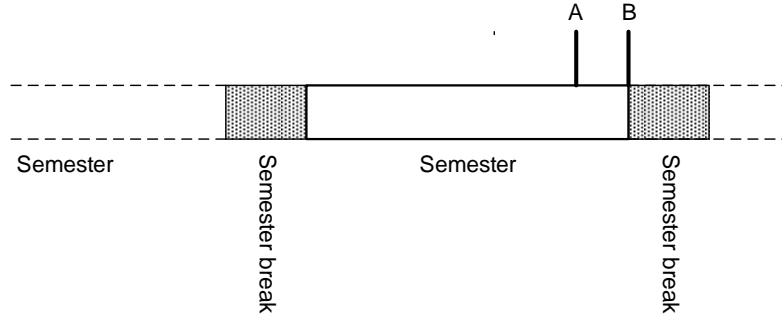

Figure 1: Chronological sequence of the finding phase of a project (first semester)

A At the point in time A (near the end of the semester) the project topic finding phase starts. The professors of Mobile Computing present their areas of interest and possible project areas.

B At the point in time B (end of semester) every student must have found a project and advisor, on his/her own behalf.

The project coordinators are to be informed through the ”'Project Data Sheet”’ of the following details:

- Name of the student(s)
- A working title of the project
- A short description of the project content
- Name of the project advisor

If this deadline is violated a project and project advisor will be assigned through the project coordinators without further consultation of the student.

2.2 Realization phase

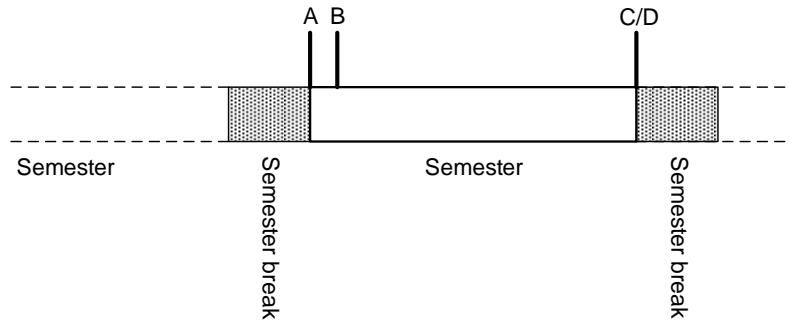The following semester(s) after the "'finding phase"' semester.

Figure 2: Chronological sequence of the realization phase (semester(s) following the finding phase)

A At the point in time A (beginning of semester) the project phase officially starts.

  If a project change is conducted, the project coordinators are to be informed as soon as possible (use the "'Project Data Sheet"' to communicate any changes).

B At the point in time B (beginning of semester plus 10 working days) a project specification (s. Section 5) must be finalized in cooperation with the project advisor and made available in the corresponding SVN repository (s. Section 4) using the corresponding templates.

  Based on the specification the available hardware gets distributed.

C At the point in time C (at the end of the semester) the complete project documentation (s. Section 9) must be available in the SVN repository. The project coordinators will then mark the SVN version, which will be the basis for the later project evaluation.

D At the point in time D (at the end of the semester – for the duration of two working days) the project presentation days will be conducted (s. Section 10). This event is compulsory for EVERY Mobile Computing student (excl. internship or abroad students).

The exact dates will be announced in Moodle on time.

3 Coaches

During the whole project phase, the students are supported through the following coaches in different areas of interest:

- Project Coordinator (PC): Organization of the project phase, assignment of the project themes and hardware, announcement of exceptional appointments, etc.: Jens Krösche and Stephan Selinger
- Project Advisor (PA): Initiator resp. content-related advisor of the project.

4 SVN

All documents, source files, etc. must be managed through the SVN repository provided by the project coordinators. The access data will be provided when the project distribution has been finalized (after point in time B, s. Figure 1. The directory structure is predefined and must not be changed, the predefined templates are to be used.

```
trunc/
    Abstract.docx
    Documentation/
        UserDocumentation/
            Users_guide_and_product_description.docx
            Poster_english.pptx
        ProjectDocumentation/
            Requirements_specification.docx
            Presentation.pptx
            Project_plan.mppx
            Milestone_status.docx
            Website_template.xlsx
            Time_recording.xlsx
            Meetings/
                Meeting_protocol.docx
            RelatedWork/
        TechnicalDocumentation/
            Doxygen/
            System_architecture.docx
        Screenshots/
    Implementation/
        Installation.docx
        ExternalComponents/
        ProjectFiles/
        SourceCode/
tags/
branches/
```

5 Project specification

Before starting with the realization and implementation of the project, a requirements specification (Requirements_specification.docx) must be written. Structure and content of the requirements specification are to be extracted from the template in the corresponding SVN directory. In addition, a coarse project plan through the use of MS-Project (Project_plan.mppx) and an overview of the status of the most important milestones (Milestone_status.docx) is to be provided. All files are to be provided through SVN.

Summarizing the project specification contains the following documents:

1. Short description of the project (`Abstract.docx`)

   (a) The title as headline
   (b) A short description of the project (three sentences)
   (c) A short description of the project (half an A4 page)

2. Documentation:

   (a) Requirements specification (`Requirements_specification.docx`)
   (b) MS-Project project plan (`Project_plan.mppx`)
   (c) Status overview of the most important milestones (`Milestone_status.mppx`)

6   Project hardware

The degree program Mobile Computing owns a number of devices used for projects. This hardware can be rented (for a limited duration) after finishing the project specification (due to the restricted amount of some devices a further coordination process is needed). After an approval by the project coordinators the devices can be obtained by the hardware rental office (AV-Verleih; FH2 level 2 western side, near library).

If hardware is kept longer than contractually agreed, a fee of 2 Euros per additional working day, independent of the business hours of the rental office. Students will NOT be informed when the deadline ends, the exact date is announced when the hardware is handed out.

7   Meetings

If needed meetings with the project advisor can be conducted in regular time intervals. All meetings must be documented in a suitable manner (s. Meeting_protocol.docx) and made available in the SVN (max. delay one week).

8   Time recording

Every student of a project group has to document his/her working times in addition to the planned ones in the dedicated template in the SVN repository (Time_recording.xlsx), truthfully and in 15 minute intervals.

9   Project submission

The project submission is based on the SVN repository. At the project submission deadline a so called tag is initiated on the repository. This tag marks all documents, data, and sources which will than be used to finally evaluate and rate the project.

The final submission must contain the following information:

1. Short description of the project (`Abstract.docx`)

   (a) The title as headline
   (b) A short description of the project (three sentences)
   (c) A short description of the project (half an A4 page)
   (d) A list of all project members including student numbers

2. Documentation:

   (a) User documentation

      i. User manual and product description: What does the application do, what's it's use case, what constraints are to be considered using it, how is it used?
         (`Users_guide_and_product_description.docx`)
      ii. Poster (Poster_english.pptx) with appropriate graphical preparation (figures, sketches, images, ...) of the content for presentation purposes

   (b) Project documentation

      i. Requirements specification (`Requirements_specification.docx`)
      ii. MS-Project project plan (`Project_plan.mppx`)
      iii. Milestone status overview (`Milestone_status.mppx`)
      iv. MS-PowerPoint presentation (`Presentation.pptx`)
      v. Time recording (`Time_recording.xlsx`)
      vi. Content description suitable for the website (`Website_template.xls`)
         A. Inside the website template only one row must be used and filled according to the hints inside the appropriate cells.
         B. All images referenced inside the template (stored as PNG, GIF oder JPG, but NOT integrated in Word or alike) must be attached also. Keep in mind, that images from the Internet are often copyrighted and can therefore not be used.
         C. Your description should attract readers not drive them away
      vii. Meetings
         A collection of all meeting protocols
      viii. Related work
         A collection of all documents, that can be counted to the related work of the project theme

   (c) Technical documentation

      i. Detailed system documentation (`System_architecture.docx`) including the system architecture based on the UML-2 standards (at least Use-Case-, Class-, Packet-, Sequence-, Activity-, and State chart-diagrams) and commenting description
      ii. Generated Doxygen documentation (HTML format)

   (d) Screen shots of the application resp. other useful images

3. Implementation

    (a) An installation description including parameters used for installation (an external person should be able to setup the development environment)
    (b) Project files and documented source code (C/C++: Doxygen, Java: Doxygen, C#: Doxygen) at class-, method-, resp. functions level and for code, that needs documentation
    (c) Compiled and runnable executables
    (d) External components (DLLs, JARs, ...), if used/needed

10   Project presentation

All projects of the current semester will be presented at one of the two presentation days (s. Figure 3).

	Day 1	Day 2
Winter Term	BSc. PRO-2 BSc. PRO-4 MSc. PRO-3-M	
Summer Term	BSc. PRO-1 BSc. PRO-3 MSc. PRO-2-M	

Figure 3: Project presentation arrangements

The following aspects are to be taken into account:

- Presentation (lecture hall)

    - Every project group/student receives a 10 minute time slot for its presentation with a 5 minute discussion slot afterwards. The presentation is conducted by one team member.
    - Every project group must provide the attending lecturer with a printed version of the presentation (in the "'Notes"' print format).
    - The project coordinators distribute the time slots.
    - Every presentation can be visited on a free basis by every student, at least one professor will be attending for feedback reasons.

- Exhibition (seminar room)

  - All project groups/students have to present their project in working condition.
  - Create a DIN A3 poster (s. Poster_english.pptx) that describes the project.
  - The project documentation is available in printed form for perusal.

If a project does not attend the presentation day, the project automatically gets a negative grade. The next presentation will then be in front of a commission.

11 Grades

Each project member gets an individual project grade. For the master project the following weighted evaluation criteria are used:

Part of the project	Weight	Evaluated by
Technical Solution	40%	PA
How does the concept look like How does the technical solution look like Have all the aspects been solved sufficiently		
Process	50%	PA
Technical documentation (system architecture) Source documentation User/Project documentation Compliance to deadlines and process Meeting and minutes quality		
Presentation	10%	attending professors
Presentation style Content Slides		

After the grades have been given, a review over the evaluation process can be obtained at the secretary.

Noncompliance to the rules described in this document can result in a negative project evaluation.