

Seminar: Technologies and Design of Graphical and Virtual User Interfaces

00 – Organization



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Research Group



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Current Research Topics



Interested in these topics?

Contact us for:

- students projects and
- B.Sc., M.Sc. or Ph.D. theses

- Quality Assurance (QA)
 - Test Languages (TTCN-3, TDL, UTP)
 - Defect Prediction
 - Managed Software Evolution
 - Usage-based Testing
 - Usability Engineering (websites, AR, MR, VR)
- QA for Cloud Systems
 - Automation in Cloud deployments
- Simulation applications
 - Simulation of software development processes
 - Simulations of and in the Cloud

Introduction

- Topics in context of human computer interaction and user interface types
 - Human Factors
 - Technologies (mainly AR/VR, but also NUI, VUI)
 - Interaction Techniques
 - Usability Engineering, User Experience Design

Administrative Preamble

- ECTS: 5
- Room: Container 0.101
- Language: English
- Time:
 - 10 am to 12 am, Thursday
- Modules (Kerninformatik):
 - CS M.Inf.1155 Seminar: Ausgewählte Aspekte der Softwaretechnik
 - CS M.Inf.1250 Seminar: Software Qualitätssicherung
 - CS B.Inf.1207/1208 Proseminar I / II

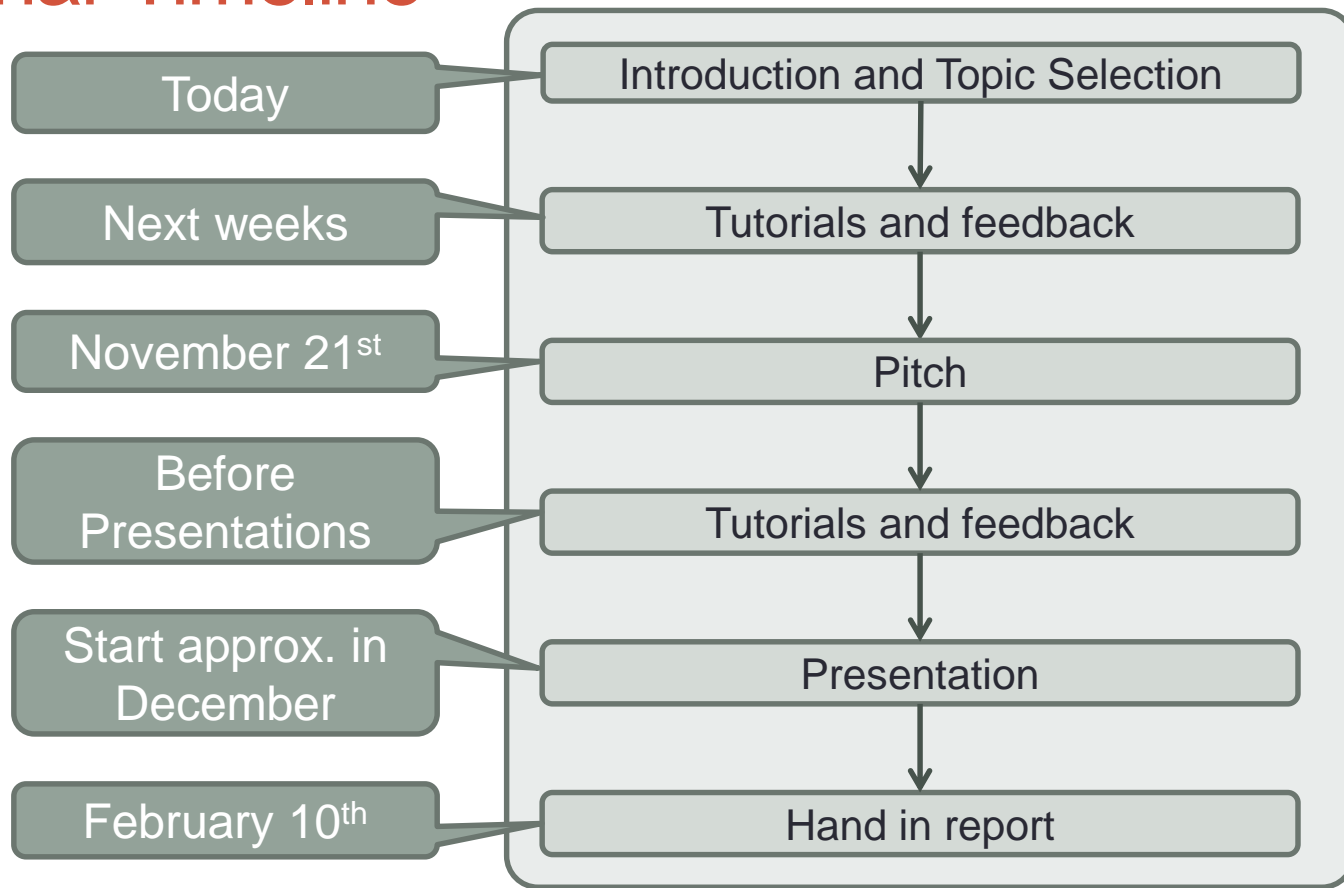
Administrative Preamble – Grade Criteria

- Presentation
 - Approx. 45 min (English)
 - Approx. 35 minutes presentation, and
 - Approx. 10 minutes questions and discussion
- Report
 - 10 - 12 pages
 - Including „reasonable“ amount of figures and tables
 - Excluding title page, empty pages, bibliography
 - Format: a Latex template will be available in the StudIP

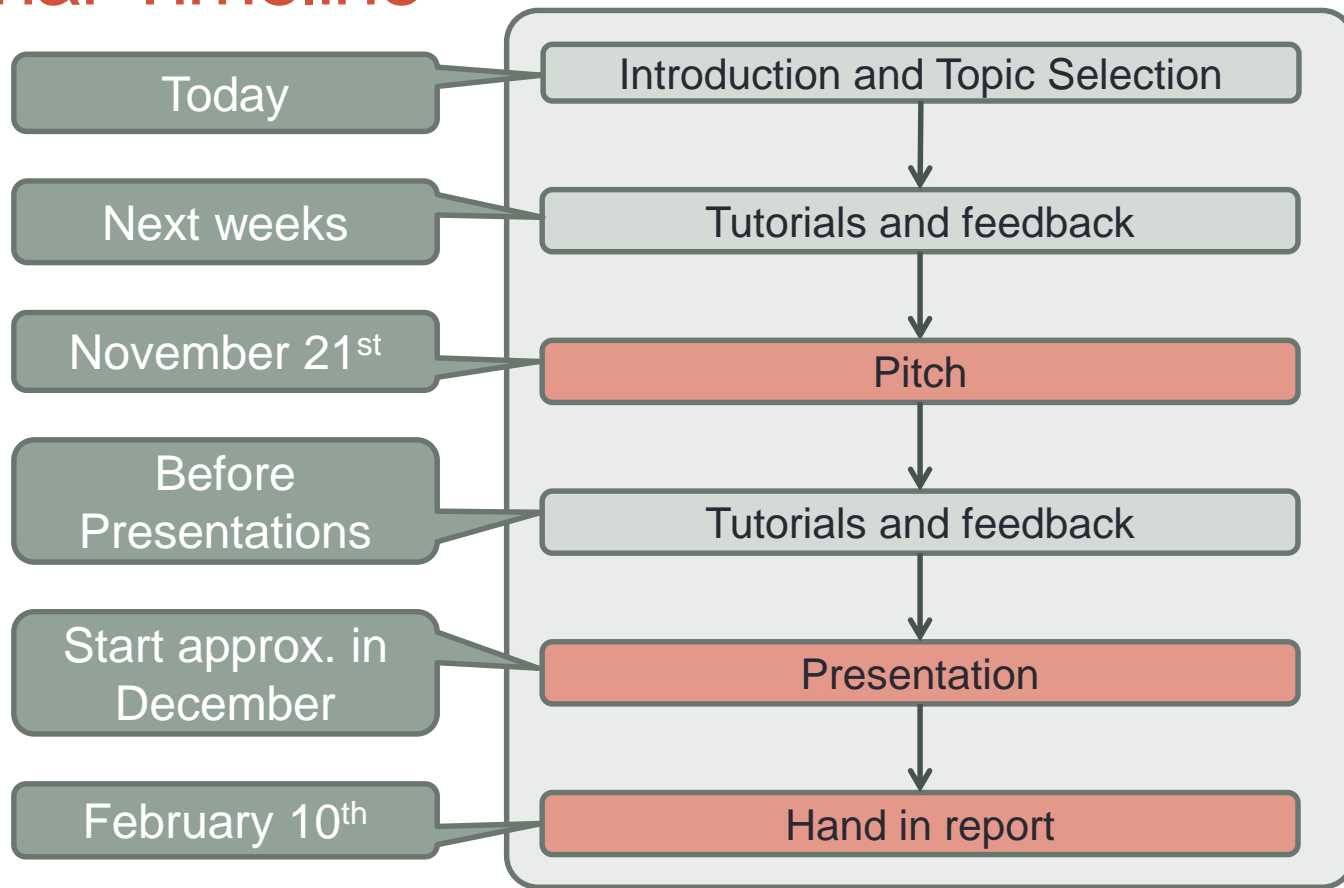
Assessment Criteria for the Grade

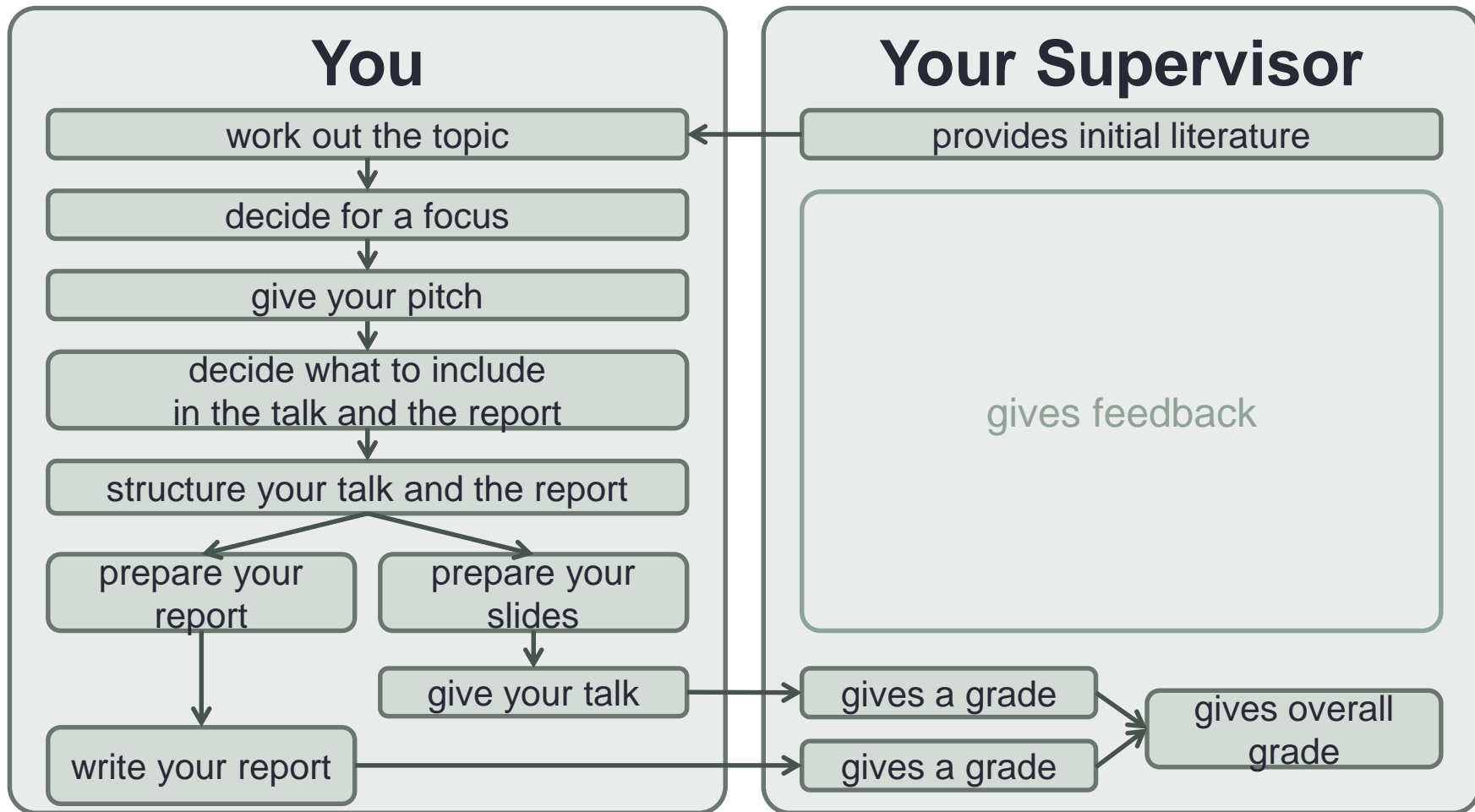
- Presentation 40%
 - Quality of presentation materials
 - Preparation of the presenter
 - Structure and organization of the presentation
 - Answers to questions
- Report 60%
 - Completeness
 - Scientific content
 - Form and style
- Pass criteria is 50% (Grade 4.0) in each

Seminar Timeline

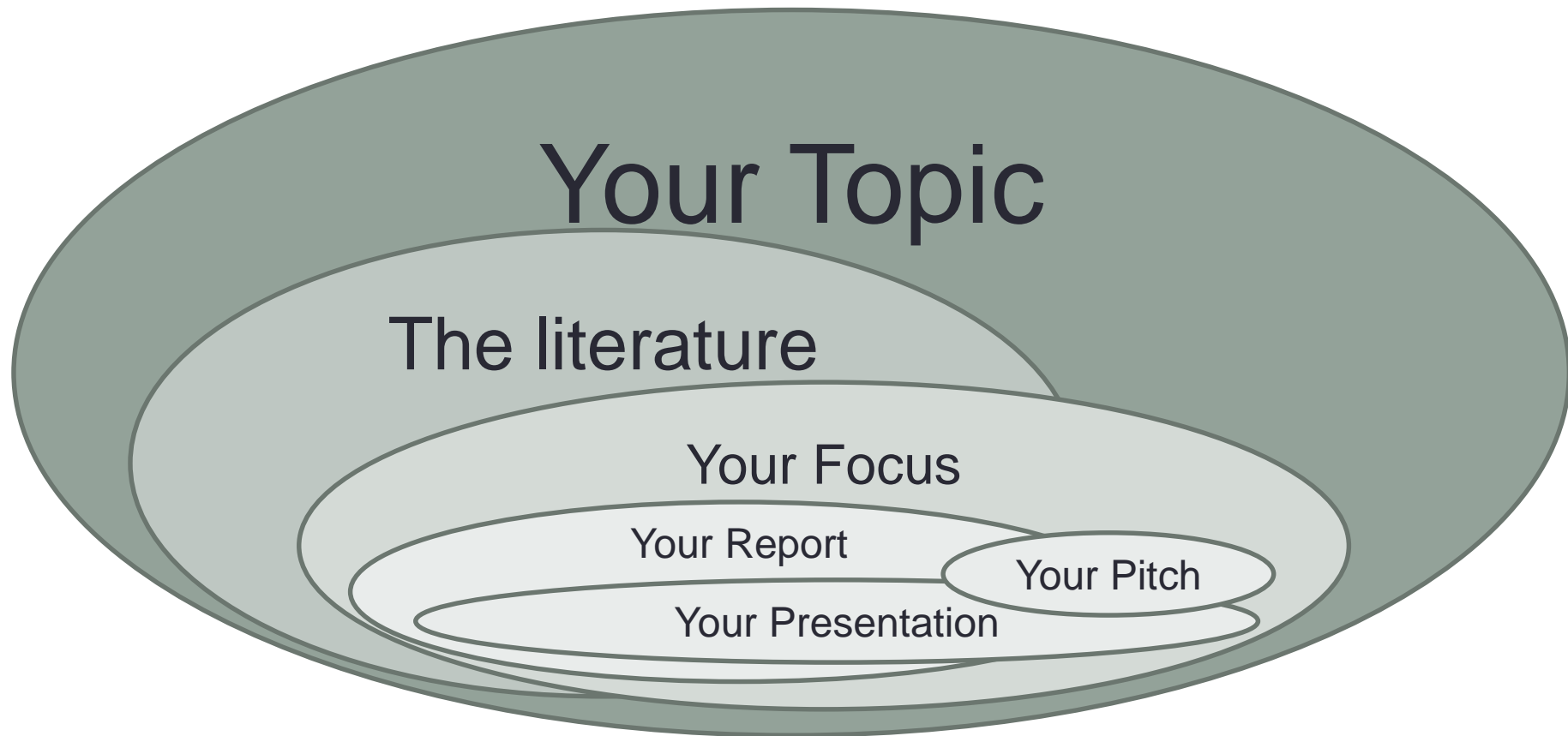


Seminar Timeline





Selection of the Subtopic



Seminar Timeline

- Pitches on the 21st November
 - 5 minutes
 - Topic introduction + focus
- Presentation Schedule
 - Provided as soon as all registrations are done and topics are chosen
- Attendance
 - Quite useful for the introduction session
 - Quite useful for the support sessions
 - **Mandatory for the pitches and the student presentations**

Organization

- Register in Stud.IP!
 - Schedule
 - Share literature
 - Share presentations

Organization

- Register for the exam via FlexNow **for one module** latest until

November 7th, 2019

Organization

- Deliver the report latest until

February 10th, 2020

Topics

- Human Factors in UI Design
 - Conceptual models, natural mappings, action cycle, errors and slips, Gestalt Principles, Fitt's Law, ...
- Virtual Prototyping of Technical Devices
 - Terminology, tools, application areas, evaluation methods, ...

Topics

- 3D User Interfaces and the Concepts of Augmented and Virtual Reality
 - Virtual worlds, scenes, field of view, view frustum, presence, immersion, behavior, animation, ...
- Creation of Virtual Worlds
 - Scene graph, transformation groups, meshes, materials, textures, particles, ...
- Interacting with Virtual Worlds
 - Development guidelines, interaction with AR and VR, ...

Topics

- Application Areas of Augmented and Virtual Reality
 - Contexts, Approaches, Advantages, Drawbacks, ...
- Frameworks for Augmented and Virtual Reality
 - Contexts, Approaches, Advantages, Drawbacks, ...

Topics

- Natural User Interfaces
 - Touch, multi-touch, gestures, kinect, leap motion, ...
- Voice User Interfaces
 - Voice recognition, language processing, ...

Topics

- Usability-Engineering, User Experience Design
 - Overview, methodologies and classifications, integration in development processes, prototyping, ...
- Remote Usability-Engineering and User Experience Design
 - Tools, Approaches, Advantages, Drawbacks, ...
- Automated Usability-Engineering and User Experience Design
 - User recording, Analytics, eTracker, USF, AutoQUEST/MAUSI, ...

Topics

- Usability Engineering vs. Virtual Worlds
 - Specific methodologies, advantages and disadvantages of traditional techniques
- Usability Engineering vs. Ubiquitous Computing
 - Specific methodologies, advantages and disadvantages of traditional techniques

Topic Selection

- Send me three preferred topics from the list in your order of preference, e.g.:
 - 1. Natural User Interfaces
 - 2. Creation of Virtual Worlds
 - 3. Voice User Interfaces
- I will try to assign to you the most preferred topic.
- If multiple students prefer the same topic, I will roll the dice.
- If you get none of your topics, I will contact you.

Contact Information

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Questions???

