

IE04 Integrated Exercise for Software II

Introduction

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Course Description

- Integrated Exercise for Software II
- Duration : 10/8~2/4 (2nd semester)
- Objective:
Obtain knowledge & skills to develop practical software
 - Plan and design software based on requirements
 - Perform collaborative software development
 - Make use of knowledge & skills of other courses

Student Learning Goals

1. Understand **software requirements** and define corresponding **models**
2. Create a **software design** that satisfies **functional and quality requirements**
3. Setup a suitable **development environment** and effectively **manage development** activities
4. **Design sufficient tests** and **verify** software
5. **Validate** software by checking that it meets the needs of **stakeholders**

So, what will you do?

- What will you develop
 - You will receive an RFP (Request For Proposals) of a software
 - You will propose and design software that satisfies the RFP
 - Your software will have a graphical user interface and use a database
 - You may decide the programming language and frameworks
- How will you work
 - You will work in teams of 3-5 students each
 - You will develop the software incrementally in phases
 - You will validate and verify your software
 - You will present (deliver) your software in the final class

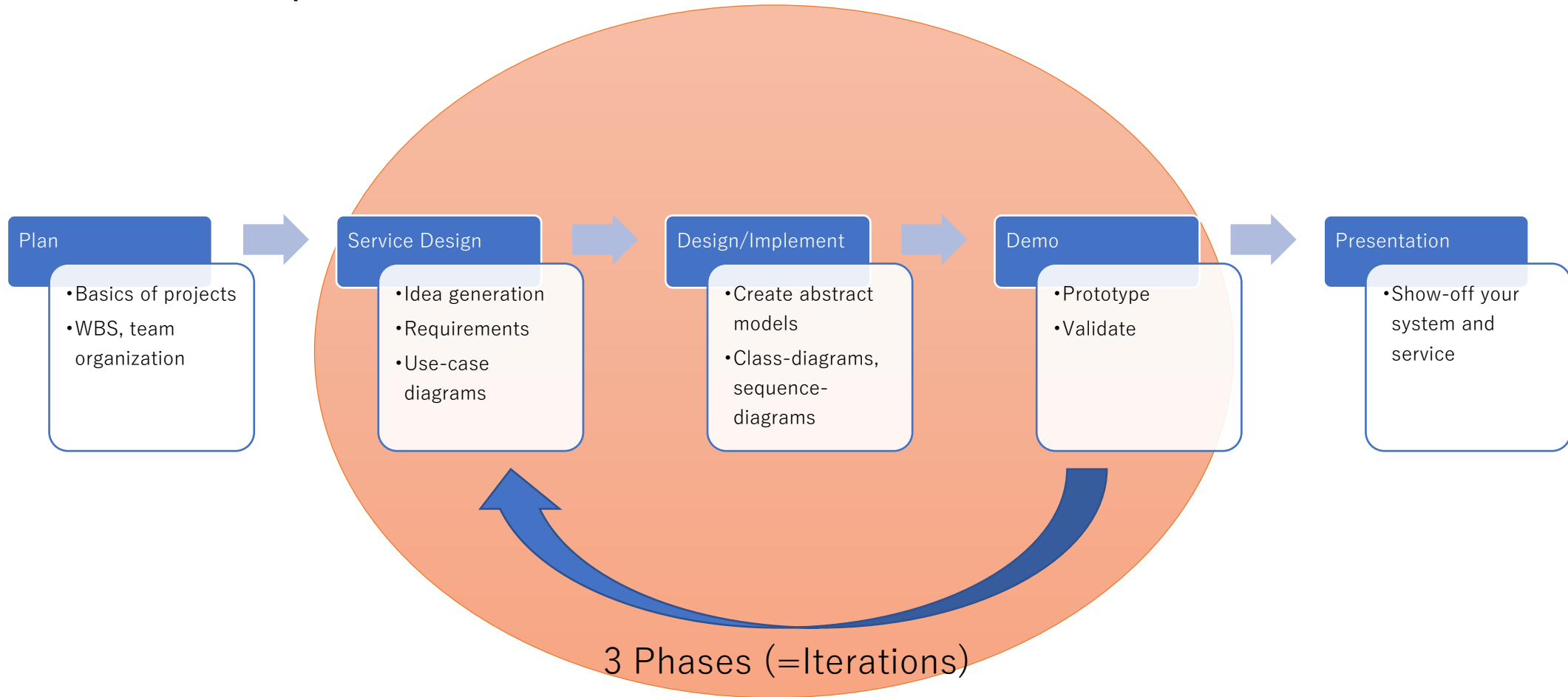
Expected Output

- A software system that satisfies given requirements
 - Proposed service (user-stories)
- Description of service
 - Target users
 - Location of usage
 - User-stories (as use-cases)
- Output methods
 - Software system
 - Project documentation
 - Presentation

RFP: Project Theme

“Lab Student Management System”

Development Process



Master Schedule

Week	Date	Phase	Activity	Deliverables (to submit)	Classroom
1	10/8	Plan	Team formation, understand RFP	Team profile	Common
2	10/15	Req. Def.	Requirements & use-case analysis	Product backlog	Separate
3	10/22	Phase 1	Requirements definition, use-case analysis	Phase backlog, Use-case diagram, Class-diagram (model)	Separate
4	10/29	Phase 1	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
5	11/5	Phase 1	【Phase demo】	Class-diagram, sequence-diagram, program	Common
6	11/12	Phase 2	Revise & update requirements and use-cases	Phase backlog	Separate
7	11/19	Phase 2	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
8	12/10	Phase 2	【Phase demo】	Class-diagram, sequence-diagram, program	Common
9	12/17	Phase 3	Revise & update requirements and use-cases	Phase backlog	Separate
10	1/7	Phase 3	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
11	1/14	Phase 3	【Phase demo】	Class-diagram, sequence-diagram, program	Common
12	1/21	Test	Validate and verify	Test-plan (including test-cases)	Separate
13	1/28	Test	Team and individual interview; Preparation of final presentation	Final report, test report, issue-list	Separate
14	2/4	Finish	【Final product presentation】	Final report, program	Common

Progress Report and Demos

- Objective
 - Confirm and share the **project status** with team members
 - Teachers will provide feedback on the contents and guidance on project activities
- Progress report
 - Each team will give a 5 min. progress report in **each class**
 - The report will be a brief presentation using slides
 - The report should cover the contents in the **template**
- Phase demo
 - Each team will give a short demo **at the end of each phase**
 - The demo must be based on a working program (in combination with UI mockups is acceptable)
 - The demo will be given together with the progress report

Notes on Required Deliverables

- All deliverables assume formats used in [FU14 Introduction to Software Engineering](#) course
 - Reasonable adjustments/improvements are acceptable
 - All deliverables must be shared on designated repository on GitHub
- Use-case diagram(s) is required
- Class diagram of model-classes (as in the MVC model) is required
- Sequence diagram(s)
 - At least one sequence diagram is required: select an appropriate use-case
- Software:
 - All code produced for the project is required to be shared on GitHub
 - Working code must be [pushed to GitHub by Phase 1 Demo](#), and [incrementally improved continuously throughout the course](#)
- Product backlog
 - Describes the values your software provides to users
 - It is a list of “user stories”
 - Describe a function in terms of user’s values (benefits)
 - Who is it for? What is it for? What does it do?
- Phase backlog
 - A task-list for the phase
 - Select user-stories from the product backlog

Evaluation

1. Presentation at each review (phase demo and final) 25%
 2. Software product (documents and software) 40%
 3. Final exam (individual interview) 25%
 4. Participation in team activities and attitude 10%
- Assessment of software product
 - Degree of fulfillment of requirements (number of functions and their quality), performance, creativity, and innovation.
 - Assessment of student contribution
 - Explanation provided at each phase demo
 - Development records (documents & GitHub repository activities).
 - Final examination
 - Students will be interviewed during their final presentation (QA session)

Summary

- Experience the development of practical software
- Practice cooperative team activities
 - Team members should **inform, consult, and assert** each other
- Let's be creative!
 - Enjoy making people happy with your skills and abilities

Course Web-site, etc.

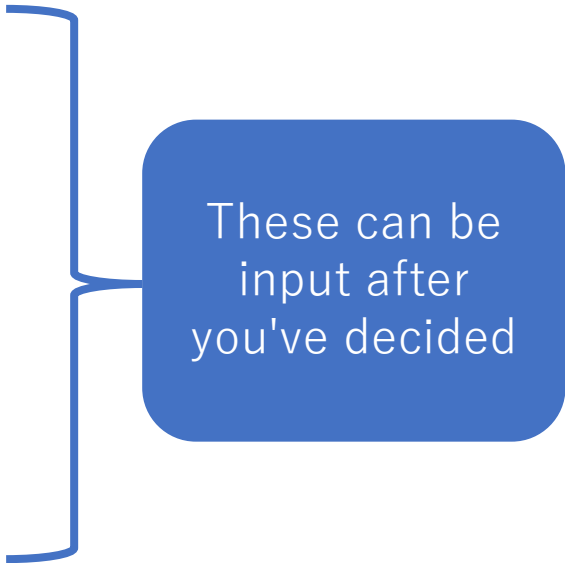
- Web-site
 - <https://ie04-aizu-2025.github.io/>
- GitHub repository
 - <https://github.com/ie04-aizu-2025>
 - You must login to view private repositories

Tasks for today

- Regroup with your team members (the list will be provided to you)
- Join GitHub classroom
- Input your team profile in the README.md at the top level of GitHub
- Read the RFP
- Prepare for next-week's first progress report

Team Profile

- Team name
- List of members
 - Student ID, name
- The type of software you will develop:
 - Desktop application
 - Web application
 - Smartphone application
 - Others: please describe
- Programming language & framework



These can be
input after
you've decided