IE04 Integrated Exercise for Software II

Introduction

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Course Description

- Integrated Exercise for Software II

- Duration：10/2～1/29 (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)

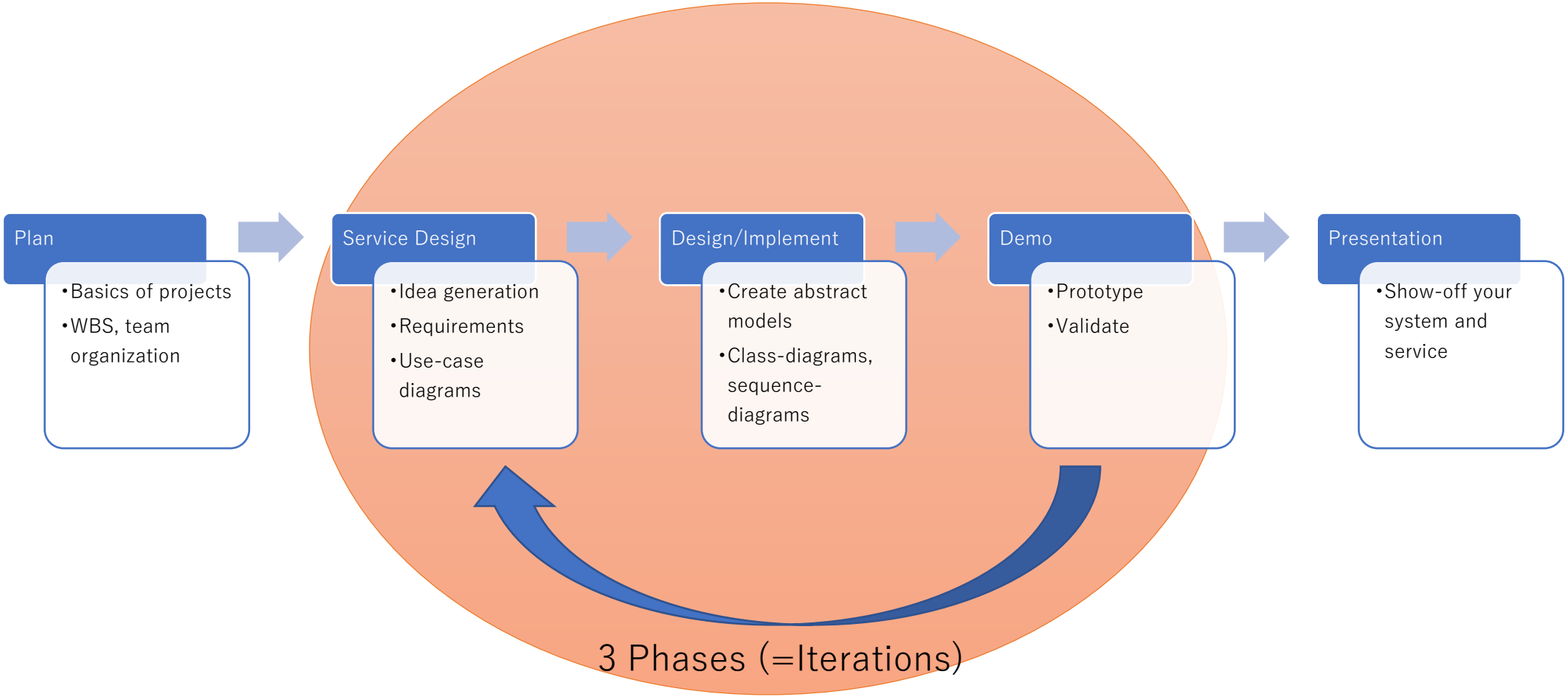
- Description of service
  - Target users
  - Location of usage
  - User-stories (as use-cases)

- 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	**10/2**	Plan	Team formation, understand RFP	Team profile	**Common**
2	**10/16**	Req. Def.	Requirements & use-case analysis	Product backlog	Separate
3	**10/23**	Phase 1	Requirements definition, use-case analysis	Phase backlog, Use-case diagram, Class-diagram (model)	Separate
4	**10/30**	Phase 1	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
5	**11/6**	Phase 1	【Phase demo】	Class-diagram, sequence-diagram, program	**Common**
6	**11/13**	Phase 2	Revise & update requirements and use-cases	Phase backlog	Separate
7	**11/20**	Phase 2	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
8	**12/4**	Phase 2	【Phase demo】	Class-diagram, sequence-diagram, program	**Common**
9	**12/11**	Phase 3	Revise & update requirements and use-cases	Phase backlog	Separate
10	**12/18**	Phase 3	Design, implementation	Use-case diagram (description), Class-diagram (model), UI definition	Separate
11	**1/8**	Phase 3	【Phase demo】	Class-diagram, sequence-diagram, program	**Common**
12	**1/15**	Test	Validate and verify	Test-plan (including test-cases)	Separate
13	**1/22**	Test	Final improvement & prepare for presentation	Test report, issue-list	Separate
14	**1/29**	Finish	【Final presentation】	Final report (presentation slides), 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-2024.github.io/
- GitHub repository
  - https://github.com/ie04-aizu-2024
  - 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