캡스톤 디자인
- Design Project

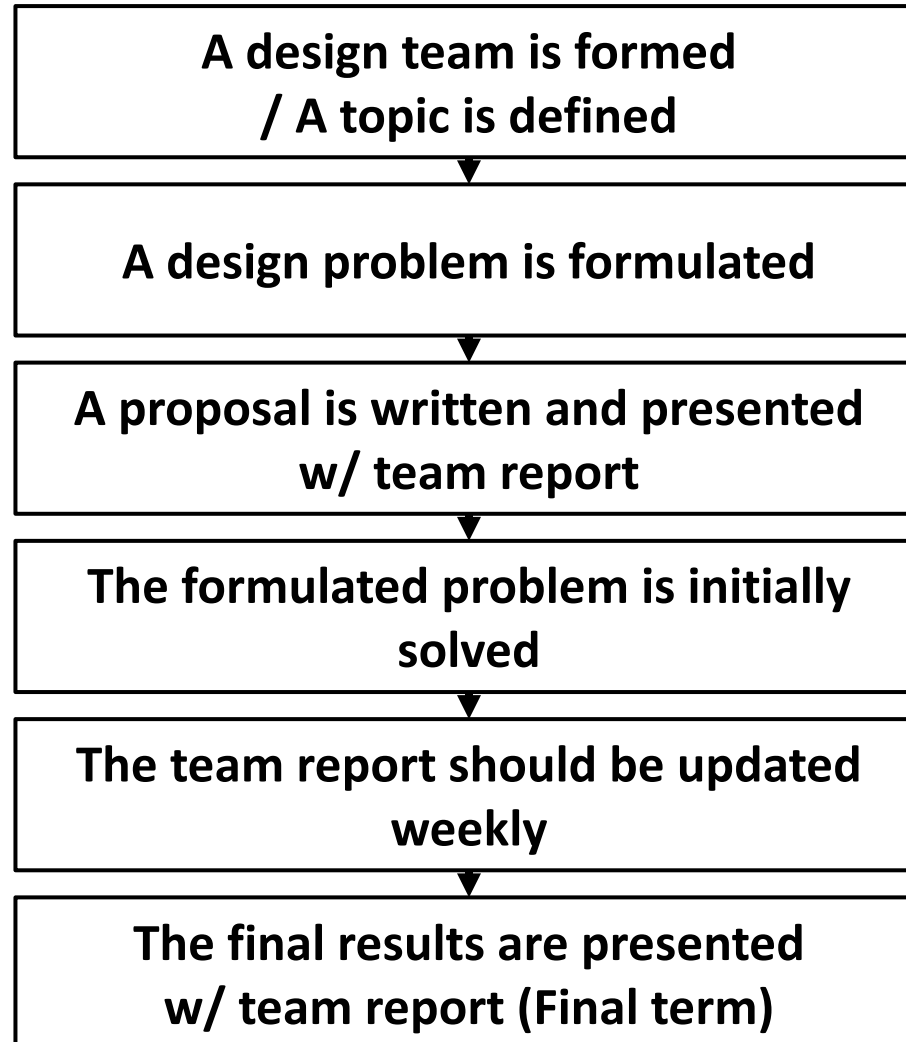정보통신공학과
Prof. Jinkyu Kang

About the Design Project

- A project is a unique sequence of work tasks, undertaken once, to achieve a specific set of objectives

- Projects are given to students as the final large-scale homework. - design project

- A team of students create a topic for their own project

About the Design Project |
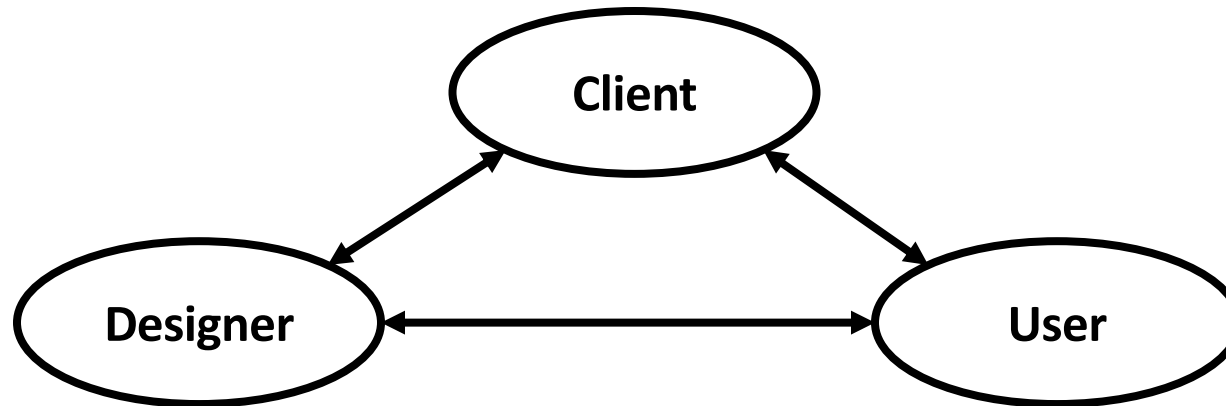## Process of Design Project

A design team is formed
/ A topic is defined

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A design problem is formulated

↓

A proposal is written and presented
w/ team report

↓

The formulated problem is initially
solved

↓

The team report should be updated
weekly

↓

The final results are presented
w/ team report (Final term)

Elements of a Design Project

- A project has three elements

- Client: Define customer needs (CNs). In the class project, the client can be a professor or the students
- Designer: In the class project, it is a group of students
- User: In the class project, it is a student or an imaginary user

Team Project and Communication Skills

- Supervisor-students relationship

- Student-student relationship

- The entire job should be fairly divided to team members

- Collaboration and communication skill are quite important
  - Try to understand what other members exactly mean. Different people may use different words or expressions for the same intention according to the background
  - Express what you want to say in a thoughtful way. Harsh words can hurt other members. When a person is emotionally hurt, effective communication becomes almost impossible
  - Do not explicitly criticize other members. Try to change your opinion as much as possible. If it is inevitable, do not directly criticize. Do it indirectly.

Note that members of a team have the same fate!!
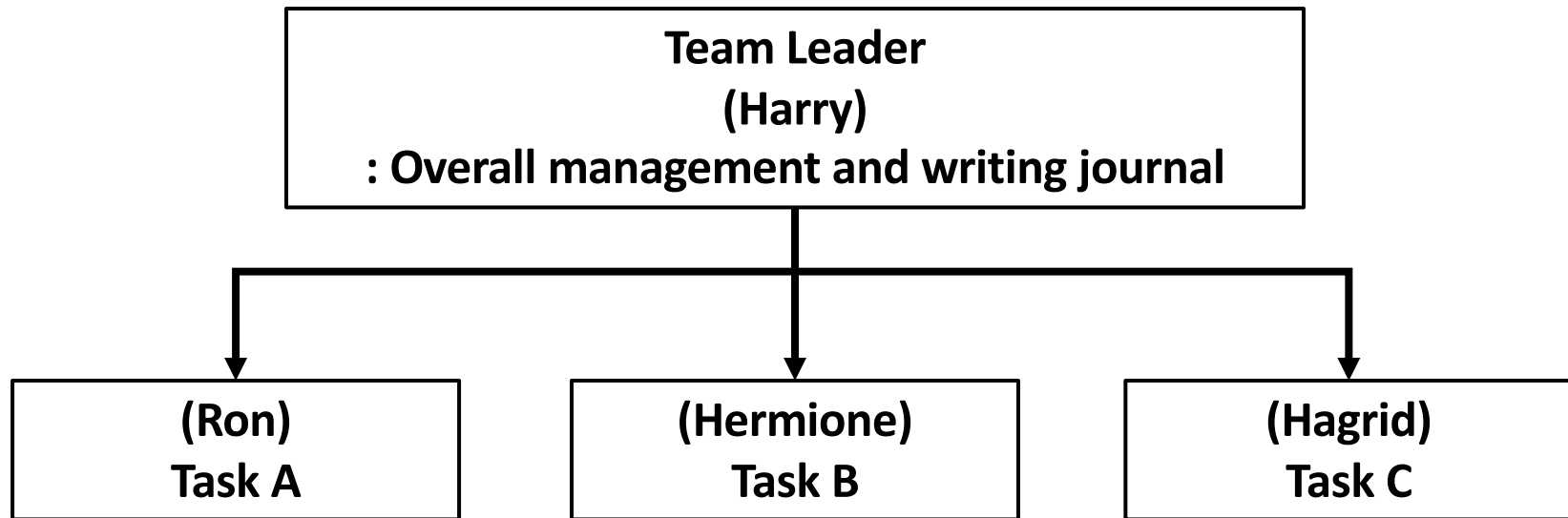
How to write a proposal (1/4)

- Proposal: Plan for a project
- Example of the contents in a proposal
  - Title page including team members' names
  - Summary: The overall process is briefly described
  - Statement of Problem: The definition of the problem is described
  - Background
  - Proposed Solution
  - Advantages of Proposed Solution (if needed)
  - Disadvantages of Proposed Solution (if needed)
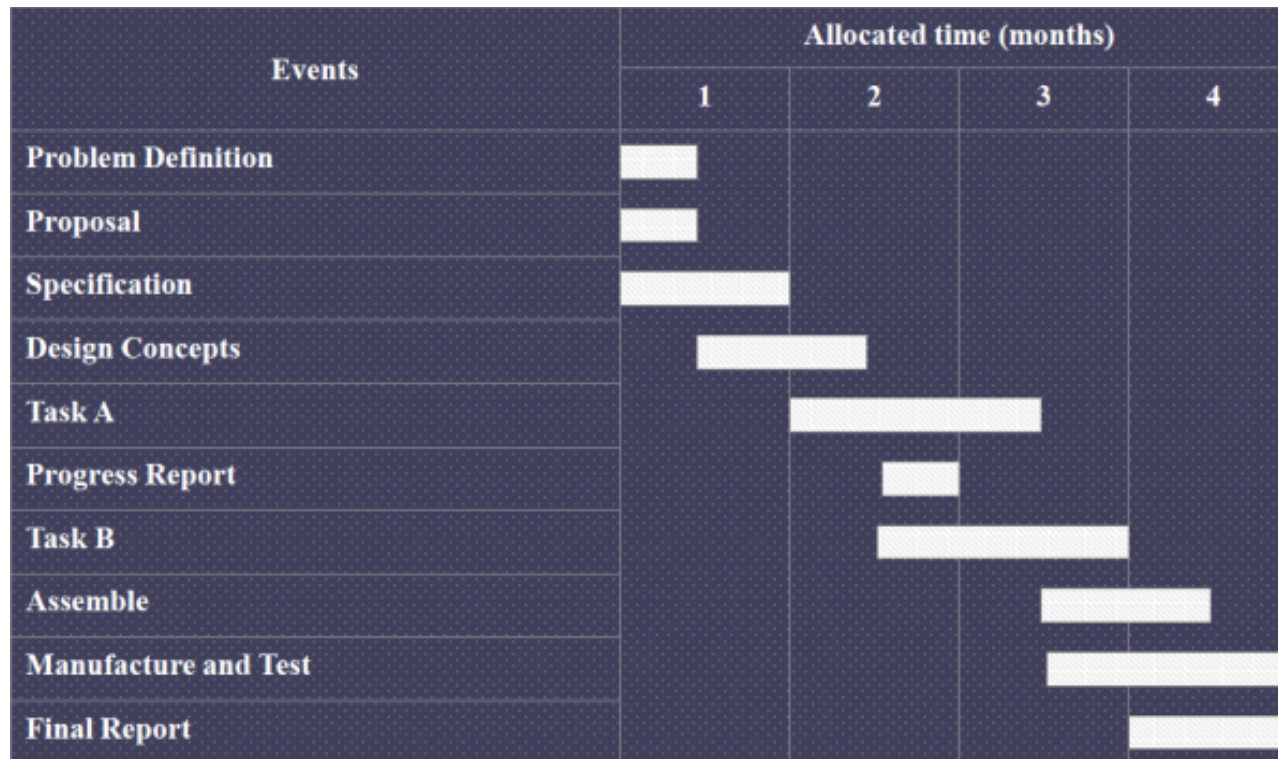
How to write a proposal (2/4)

- Qualification of personnel and facilities

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│                  Team Leader                      │
│                    (Harry)                        │
│    : Overall management and writing journal       │
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(Ron)	(Hermione)	(Hagrid)
Task A	Task B	Task C

How to write a proposal (3/4)

- Project Schedule (Gantt chart)

Events	Allocated time (months)			
	1	2	3	4
Problem Definition	▭			
Proposal	▭			
Specification	▭▭			
Design Concepts		▭		
Task A		▭▭▭		
Progress Report		▭		
Task B		▭▭▭		
Assemble			▭▭	
Manufacture and Test			▭▭	
Final Report				▭

How to write a proposal (4/4)

- Budget

Item		Funding
Labor		Not applicable to the design project
Direct cost	Equipment	
	Travel	
	Material and supplies	
	Publication and reports	
	Subtotal	
Indirect (overhead) cost		Not applicable to the design project
Total		

- References
- Appendix (if needed)

How to Write the Progress Report

- Title
- Description of Problem
- Statement of Progress:
  - The progress is described
  - Achievement in terms of percentage rate can be shown by comparing the original plan in the Gantt chart
- Amendment of the Original Plan:
  - The original plan can be modified
  - The modification is explained.
- Problems in Progress
  - Difficulties of the project are described
- Schedule of the Remaining Period
  - The Gantt chart can be used
- Summary

How to Write the Final Report (1/2)

- Title

- Abstract

- Introduction
  - Overall description of the project

- Background

- Methods or Theories

- Working Process (Design process, Experiments)
  - How the project is carried out is explained

How to Write the Final Report (2/2)

- Results
  - Design results are demonstrated by a drawing, sketch or description of the product

- Conclusions and Future Study

- References

- Appendix (if needed)

Final presentation (1/3)

- Title
  - This identifies the title of the project, the client, team members

- Contents
  - The order of the presentation is introduced

- Problem statement
  - The characteristics of the problem are described

- Objectives
  - The key objectives of the design project are presented

Final presentation (2/3)

- Background
  - Background theory is explained

- Organization of the responsibilities
  - Organization of the students is presented

- Design process
  - The detailed design process is explained
  - The reason as to why the final design was selected should be mentioned

- Outcome of the design
  - The design results are presented

Final presentation (3/3)

- Design alternatives (if there is)
  - If it is possible to make alternatives, show them and explain why they are not selected

- Evaluation of the design results
  - The advantage and disadvantage of the final design are explained

- Discussion
  - Overall discussion of the final design is made

- Conclusions and future work

2nd Week Assignment

1. 아이디어 하나로 확정하기.

2. Proposal 작성

Thank you