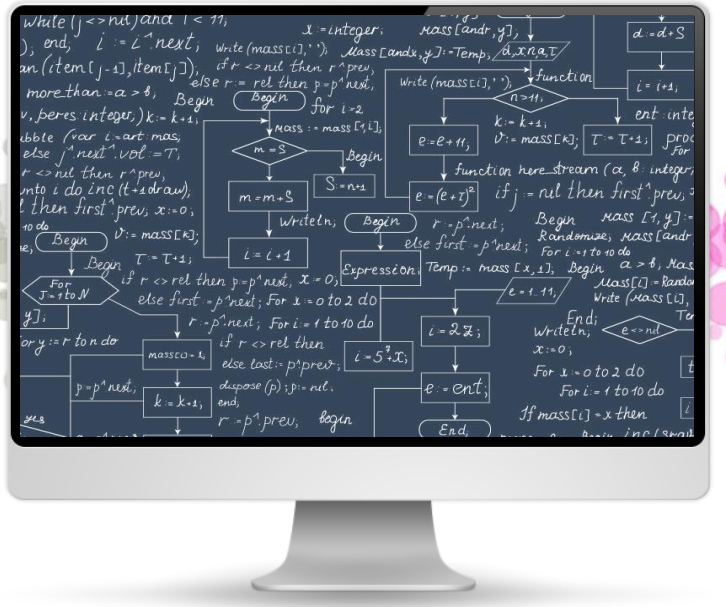


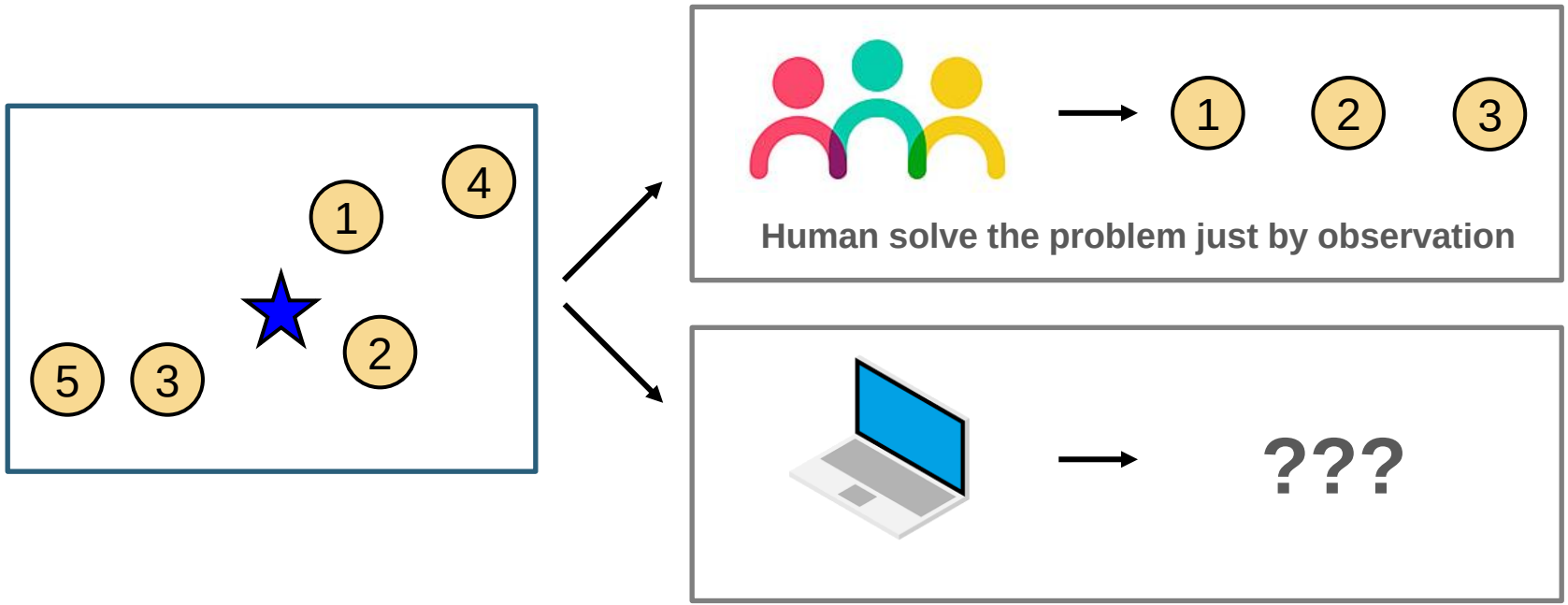
Algorithm

Lecture 1: Course Overview

Instructor: Jeong-Hun Kim (etyanue@chungbuk.ac.kr)

Problem solving (human vs. machine)

Objective: find the three ● closest to ★

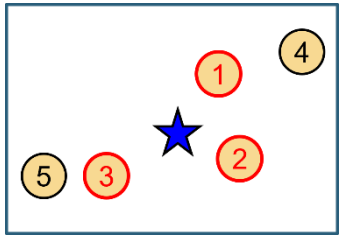


Problem solving (human vs. machine)

Objective

Problem definition

Algorithm

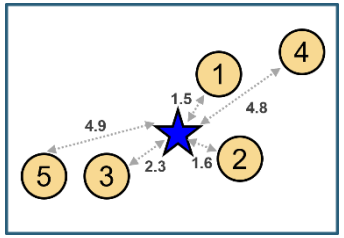


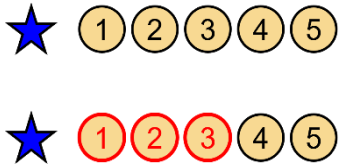
Find the three circles closest to a star

Distance calculation

Sort the objects

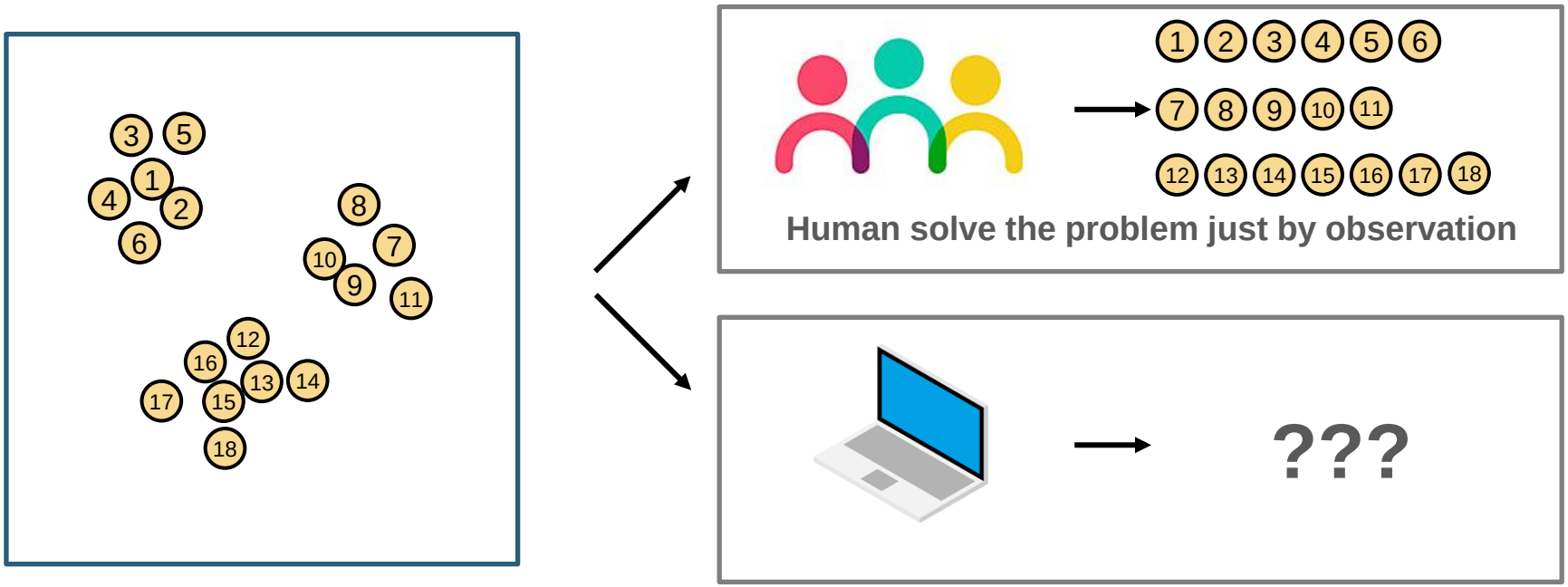
Select first three circles





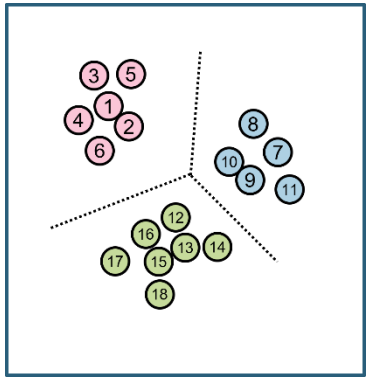
Problem solving (human vs. machine)

Objective: create three subsets, each containing similar data



Problem solving (human vs. machine)

→ **Objective** → **Problem definition** → **Algorithm**



Create three subsets, each containing similar data

Define similarity

↓

Compute similarity

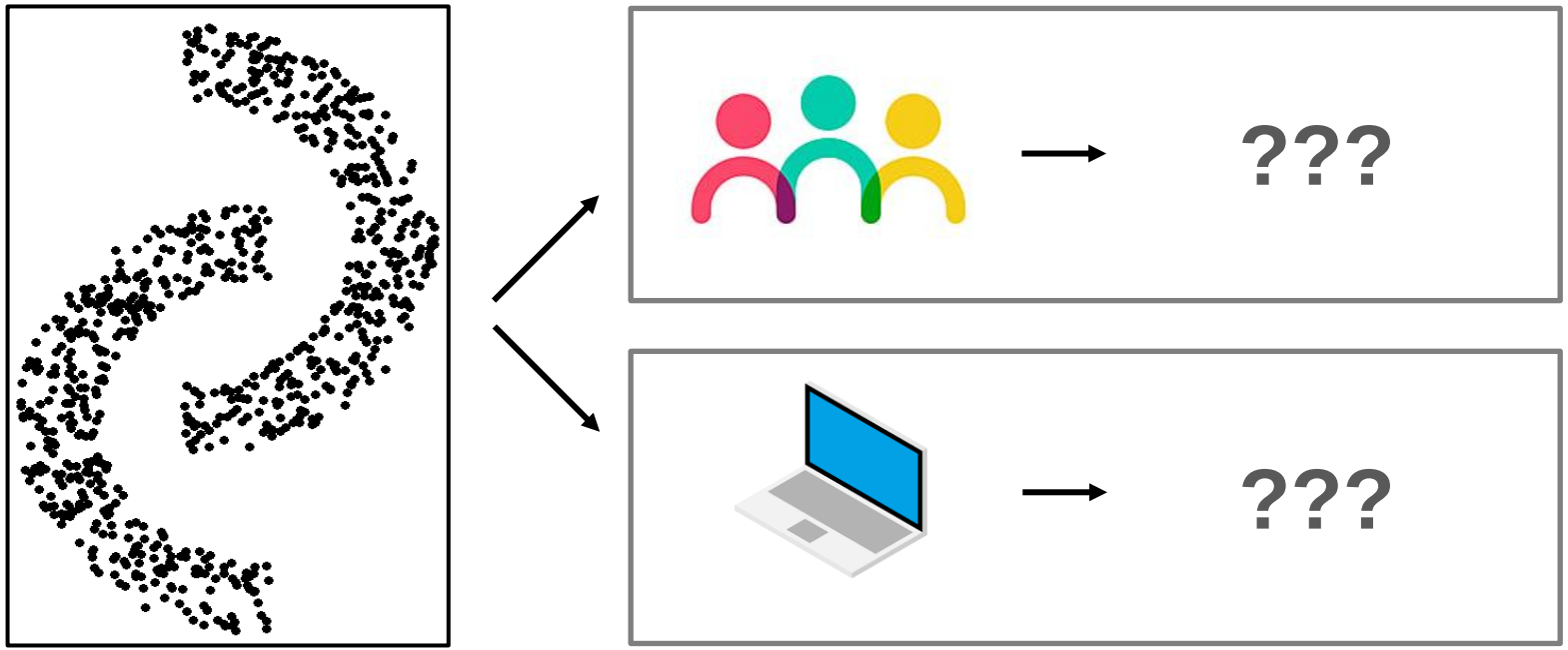
↓

Split dataset

e.g., k-means

Problem solving (human vs. machine)

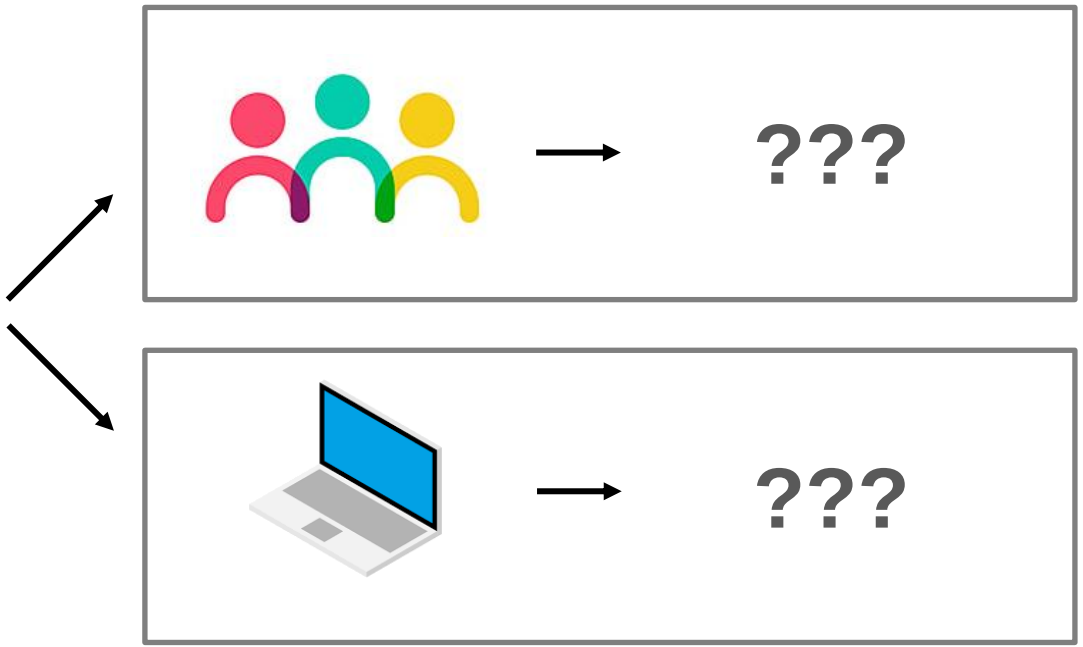
Objective: create two subsets, each containing similar data



Problem solving (human vs. machine)

Objective: find a hotel with good value for price based on distance to the station

Hotel	Price	Distance
A	$280	0.9 km
B	$210	1.1 km
C	$150	2.2 km
D	$130	4.0 km
E	$50	6.0 km
F	$230	1.4 km
G	$230	2.5 km
H	$160	3.2 km
I	$180	4.1 km
J	$150	5.7 km
K	$70	6.1 km



Course Objectives

Objective 1

Concepts
Understand the definition of algorithms

Objective 2

Design
Define the problem and design an algorithm to solve it

Objective 3

Implementation
Implement the designed algorithm

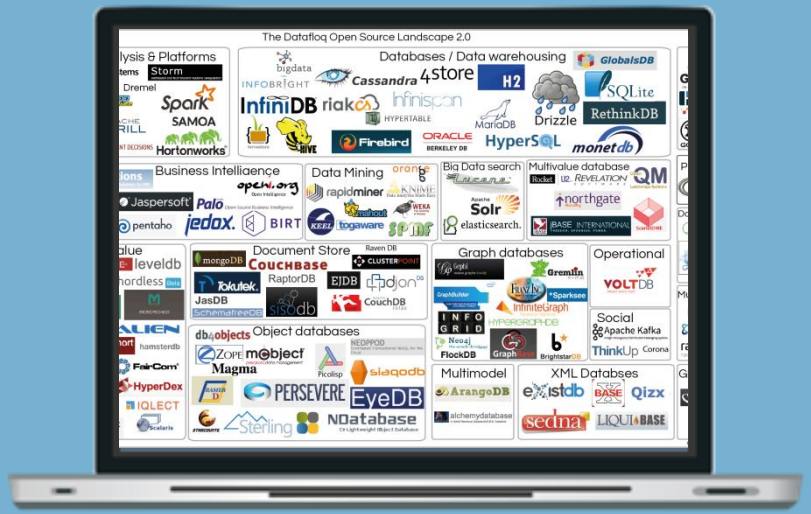
Objective 4

Evaluation
Analyze and evaluate the algorithms

Objective 5

Practice
Develop an algorithm that satisfies the given conditions

Course Features



Algorithm

Learning algorithms of various techniques

Practice

Performing practical assignments

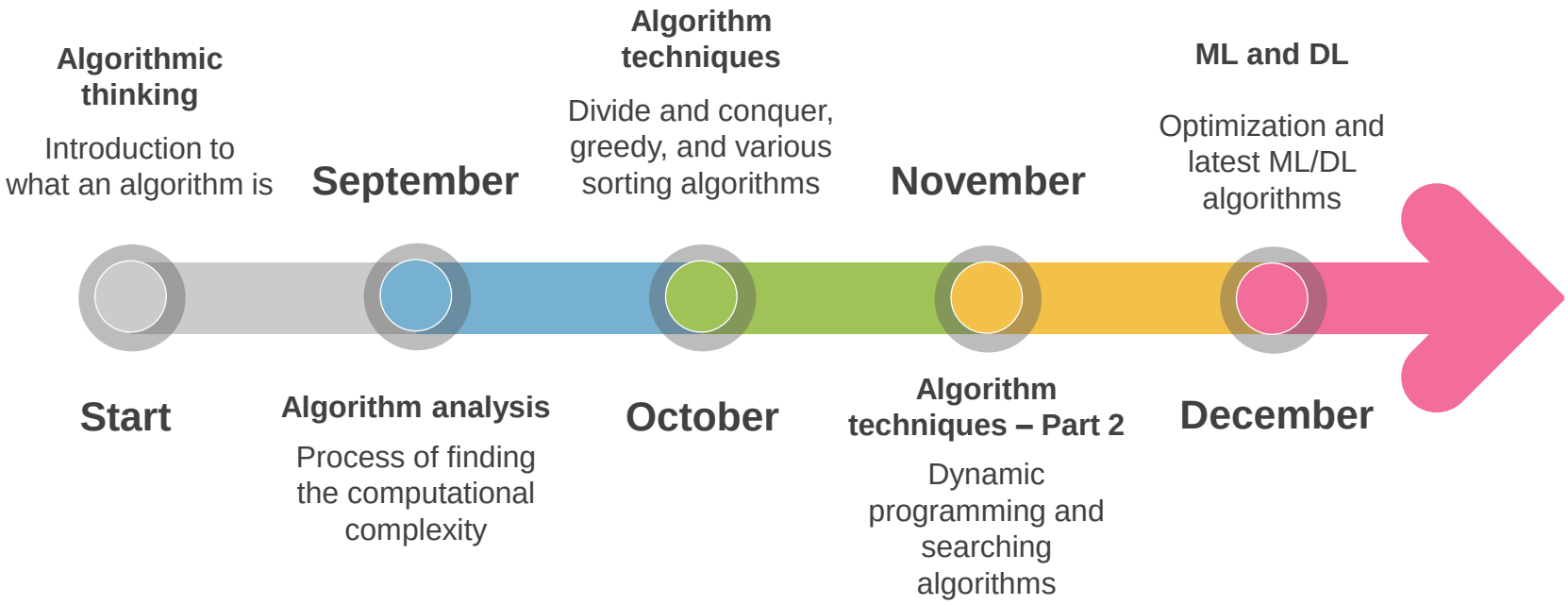
Discussion

Discussing with other students for the algorithmic problem solving

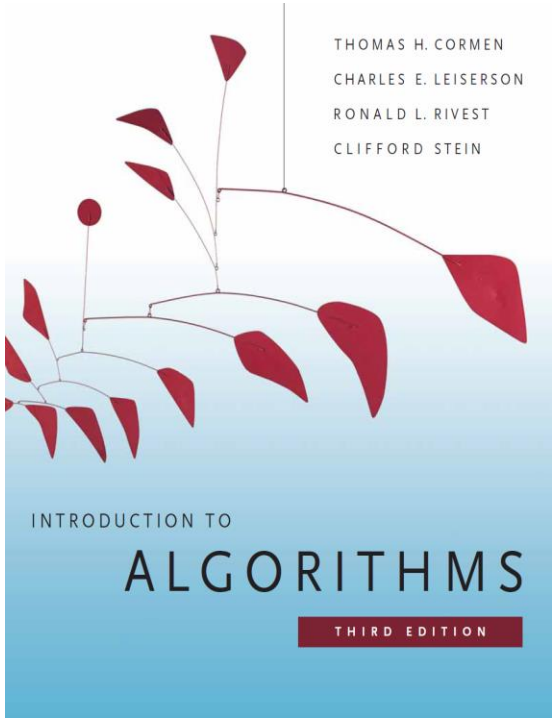
Preparation

Enhancing coding test skills for the future

Monthly Schedule



*Note that the course schedule may change depending on students' understanding



Textbook and References

PPT Slides from Course 01

Jeong-Hun Kim, CBNU, 2023

Introduction to algorithms 02

Thomas H. Cormen, The MIT Press 2009

Course Evaluation

30%

Mid-Term Examination

Mid semester and related to algorithm analysis and algorithm techniques – part 1

30%

Final Examination

End semester and related to algorithm techniques – part 2 and other algorithms

30%

Assignment

Weekly tasks that will be used to check your progress

10%

Attitude

Late submission of assignments, being late for the lectures

Course Policies

Lecture Style

Lecture 100%

Lecture Notes

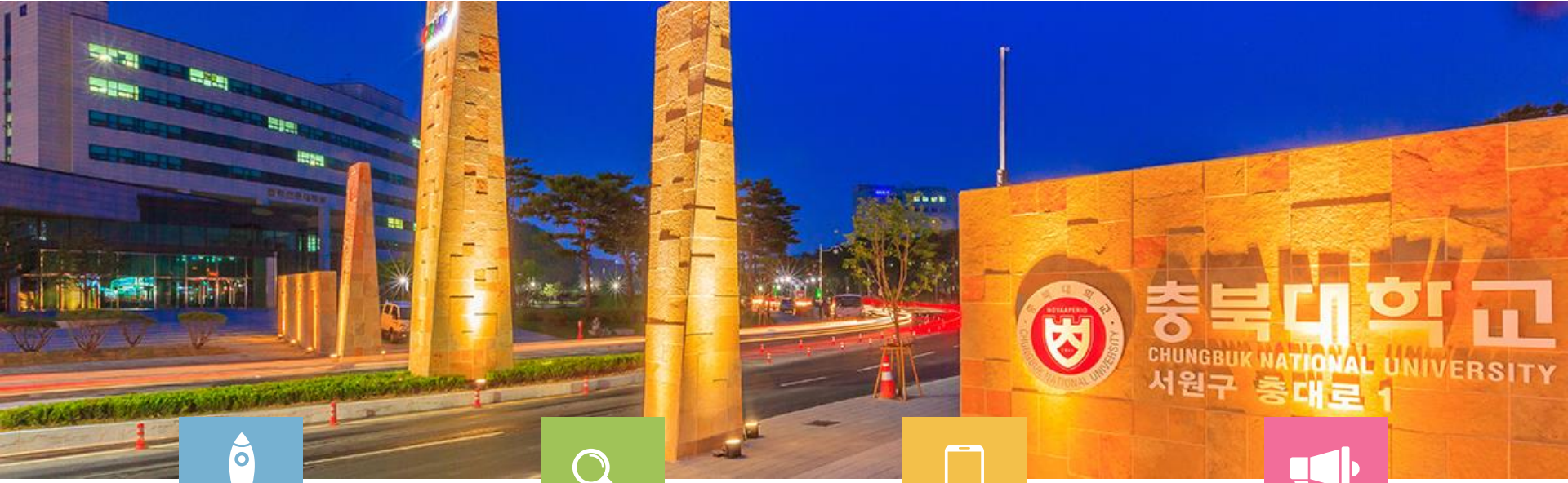
Lecture notes will be available via CBNU Blackboard 10 minutes before the lecture

Homework

The homework will be announced via CBNU Blackboard after practice

Examination

Cheating students will receive the disciplinary actions (F grade).



Department Rules

Read the rules carefully and make sure you follow the instructions

Prevention

Wear mask, no food or drinks, maintain social distance, record your health status

COVID-19 Attendance

Stay home if you feel sick (**Only two times per semester**). Still have to do the homework

No Cheating

Violation of these rules may negatively impact scholarship and other benefits

Questions?

See you next time!