

Computational Thinking

CSE 1300 – Assignment 1

SPRING 2026

This assignment continues to build on computational thinking skills. You will apply Decomposition, Algorithmic Thinking, Abstraction, and Pattern Recognition to solve the given problems.

This is an individual assignment, but you may attend a CCSE Tutoring Session if you need help.

Instructions

Document Setup:

- Create a new text document using Microsoft Word.
- Include your full name, KSU ID, and Assignment Number at the top.
- Label each answer clearly.

Submission Guidelines:

- Save your document as a PDF.
- Submit your file on D2L under *Assignments* → *"Assignment 1"* before the deadline.

QUESTION 1 – Decomposition (25 points)

Scenario:

A smart college dormitory system is being designed to help students manage their daily routines.

Task:

List at least five distinct tasks or features the system should support for students living in the dorm. (Avoid generic answers like “send notifications.” Focus on specific, useful features.)

QUESTION 2 – Algorithmic Thinking (25 points)

Scenario:

A student wants to register for classes online without errors.

Task:

Write a step-by-step algorithm that ensures the student successfully:

- Logs in
- Selects courses
- Checks prerequisites
- Confirms registration

QUESTION 3 – Abstraction (25 points)

Scenario:

A campus bookstore wants a single label for the following items:

- Notebooks
- Pens
- Backpacks
- Calculators
- Binders

Task:

Create a label with four or fewer words that represents all items.

QUESTION 4 – Pattern Recognition (25 points)

Table 1

A	B	C	D
2	5	1	9
3	6	2	16
4	7	3	25
W	8	4	36
5	4	2	X

Table 2

E	F	G	H
5	2	3	13
6	3	4	17
7	4	5	21
8	2	1	Y
9	1	2	Z

Task:

Identify the calculation rule and find W, X, Y, Z.