



# CPSC 100

# Computational Thinking

## Intro to Computational Thinking

**Instructor: Parsa Rajabi**  
**Department of Computer Science**  
**University of British Columbia**



# Agenda

- Syllabus Recap
  - Course Breakdown
- Intro to Computational Thinking (CT)
  - CT Skills
  - Class Activity

# Welcome New Students!



# Instructor: Parsa Rajabi



Lecturer  
UBC CS

[parsa-rajabi.github.io](https://github.com/parsa-rajabi)  
[prajabi@cs.ubc.ca](mailto:prajabi@cs.ubc.ca)

## Teaching experience

- UBC, SFU, Northeastern University
- Software Eng, HCI, Web Development, Project Management, Technical Writing for CS, Intro to CS

## Research in CS Education + HCI

- Focus: CS+X, AI in Education, Computational Thinking, HCI+Education

## Interdisciplinary academic background:

- MSc in Computer Science Education at Simon Fraser University
- BSc in Computer Science at University of British Columbia (Okanagan)

# Learning Goals



# Learning Goals

After this lecture, you should be able to:

- Explain the grade breakdown in CPSC 100
- Explain the concept of Computational Thinking (CT)
  - Describe the relevance of CT in real-world contexts
- Identify the subskills that comprise CT
- Apply CT subskills to design and execute a structured solution

# Syllabus Review

# Grade Breakdown

Item	Weight
Clickers	2%
Labs	10%
Post-class Quizzes	13%
Midterm	20%
Final Project	25%
Final Exam	30%



# iClickers (2%)

- In-class questions, look for the icon:
- Check for attendance/participation
- Slido polls/questions are NOT iClickers
- Activity engagement with the course
- **Sick? Stay home.**
  - Your **lowest 3** iClicker scores will be automatically dropped
    - That's 1 full week of class(!)
  - Do not use these to "skip" class, you will not be awarded any additional tokens



# Labs (10%)

- **Hands-on practice** with course content
- To be done weekly, in-person, in your registered lab
- Topics include (subject to change):
  - Programming with Snap
  - The evolution of trust
  - Number + Unicode base system
  - Infographic Critiques
  - Data Mining and Societal Implications



# Post-class Quizzes (13%)

- **Assessing** your understanding of lecture content
  - Quiz topic will be very similar to lectures
- **~7 Quizzes** throughout the semester
  - To be done individually, without other students
  - Open-book/notes
- Questions types
  - Multiple choice, fill in the blank, analysis, calculation, etc.
- More details to be released in coming weeks

# Project (25%)

- Project involves researching a specific topic
  - **Deliverable: An infographic and video**
- To be done in groups
  - **Group members must be in the same lab section**
- There will be multiple milestones throughout the term
- More details including topic/dates in the coming week

# Midterm (20%)

- In-person exam
- To be done individually
- Based on lecture material, discussions, labs etc.
- Tentative date to be announced next week

# Final (30%)

- Cumulative
  - Covers all concepts from in-class activities, discussions, labs, post-class quizzes, project, etc.
- During final exam period
- Exact date to be determined by university
- Typically announced in mid-february
- **Do not make travel plans until you know exam date**



# iClicker





# Set up your iClicker

**[www.join.iclicker.com/IFKA](http://www.join.iclicker.com/IFKA)**





## Clicker Question

**For group project, which one do you prefer?**

- a) self-assign groups (make your own)
- b) randomly put into groups
- c) mix of self-assign and random
- d) I plan on dropping this course



# Computational Thinking

# What is Computational Thinking?

“Computational thinking is the thought processes involved in formulating problems and their solutions so that the solutions are in a form that can be effectively carried out by an information-processing agent”

[Cuny, Snyder, Wing]

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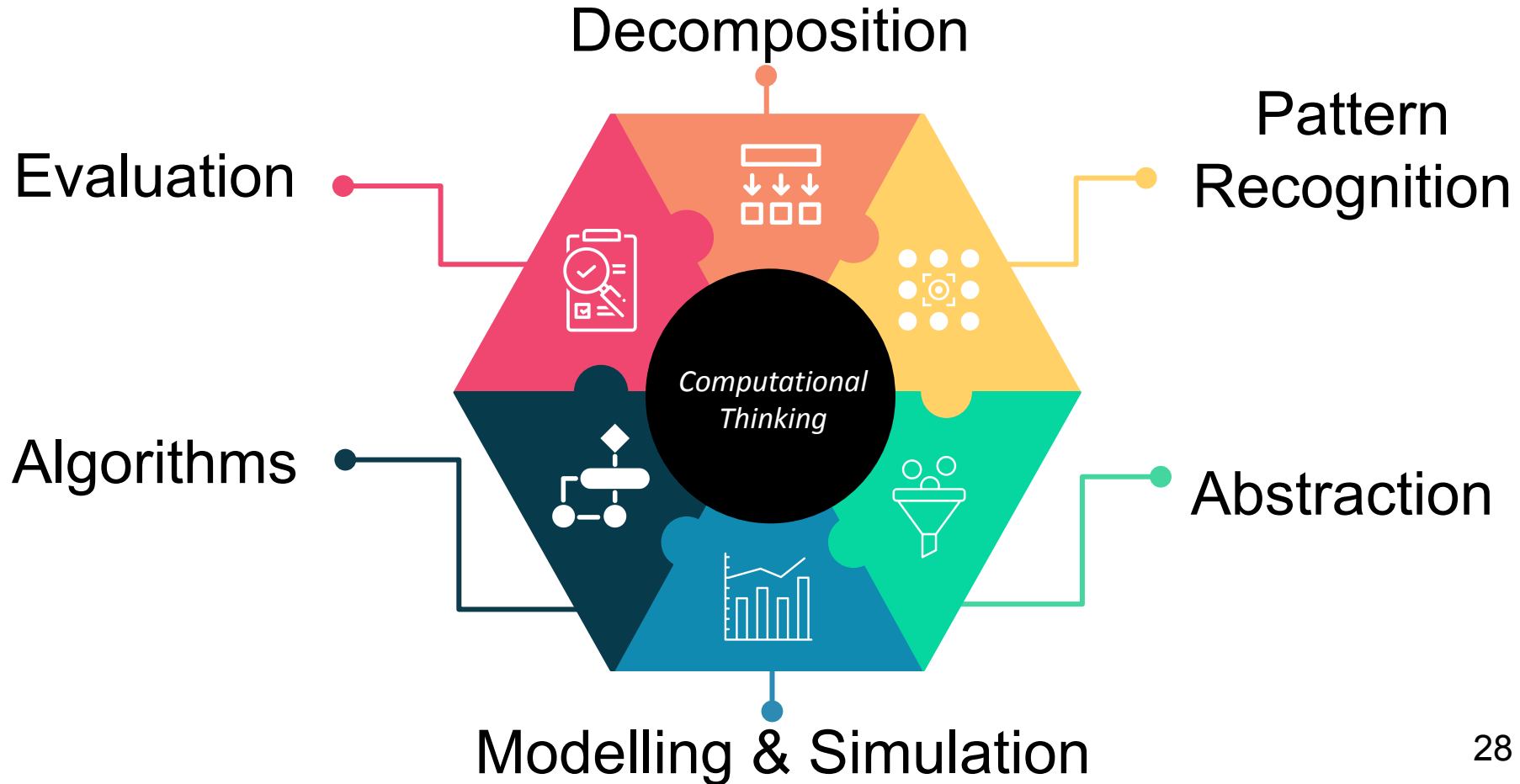


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# Computational Thinking Skills



# Class Activity



# Class Activity: Sort the Cards

Imagine a robot must arrange a set of cards in ascending order (Ace to King, Same suit).

The robot can only follow your instructions.

Task [Groups of 2-3]

Create a clear set of steps/instructions to sort the cards







# Join Miro Board

**<http://tiny.cc/CPSC-100-W1B>**



# Class Discussion

# Wrap up



This is **NOT** a  
"GPA booster class"



A+ is rare in this course



# Wrap Up

- No labs for the first week of classes
- Join Ed Discussion board (link on canvas)
- Complete course survey via Canvas
  - Due January 13