CS 113 – Computer Science I

# Lecture 01

Tuesday 01/23/2024

Dr. Elizabeth Dinella

- 1st year at BMC

- Recent Penn Grad: (PhD thesis neural inference of program specifications)

- Office Hours: Friday 10-11am (zoom)

- Research:
    - Program Analysis
    - Machine Learning
    - Web3 Security

What is Computer Science?

"Computer Science is no more about computers than astronomy is about telescopes, biology is about microscopes or chemistry is about beakers and test tubes."
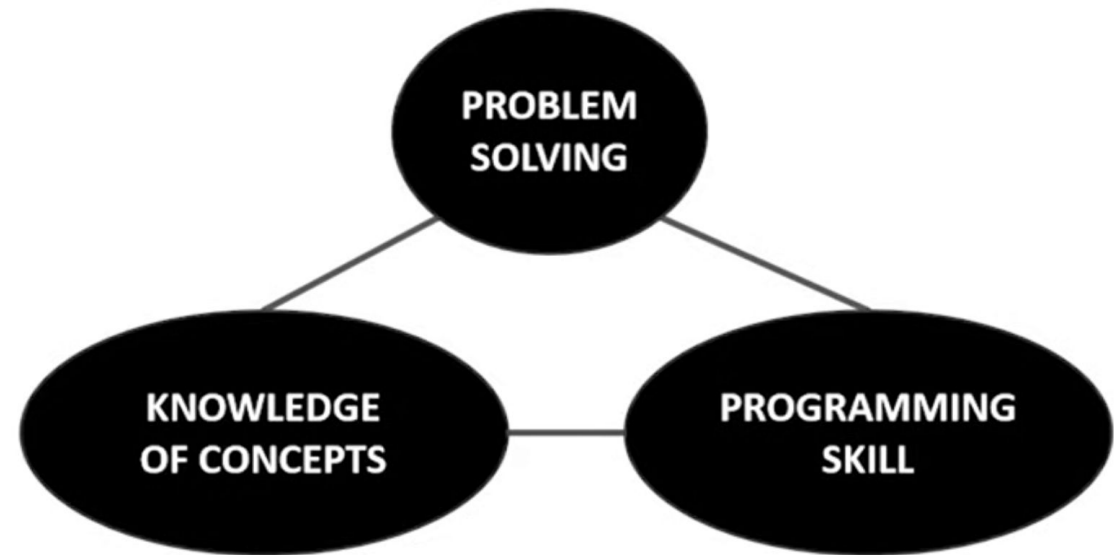
What is an *algorithm*?

An excavated triangular cistern has been found.

The width is a. The height is b.

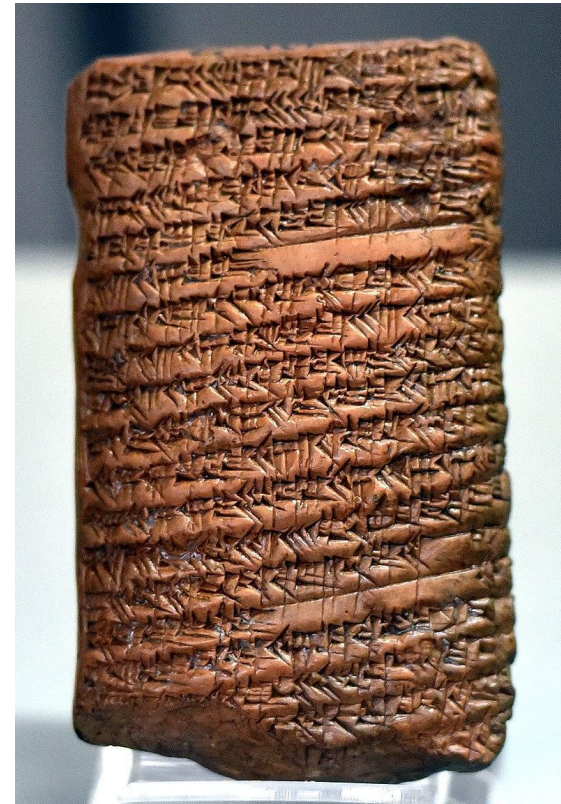Take the square of the width.

Take the square of the height.

Add the squared values.

Take the square root of the result.

This is the length of the diagonal.

This is the Procedure.

Semester goals/objectives
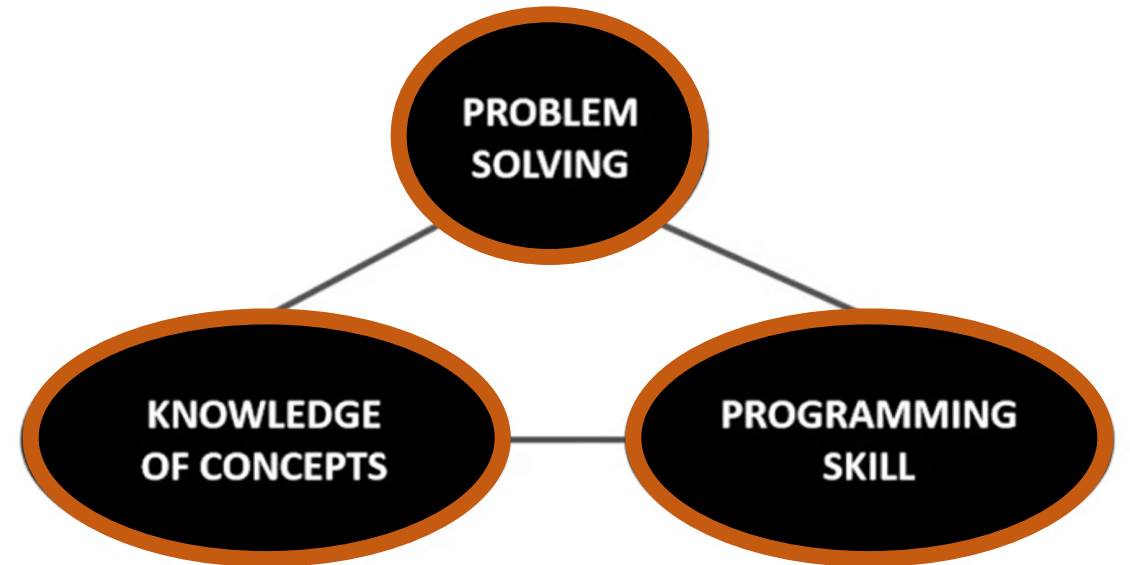
Problem Solving

Be able to break down a problem into simple steps

Programming Skills

- Instruct a computer to solve those steps in Java
- Debug confidently & Independently
  - Understand error messages

Knowledge of Concepts

- Loops, Methods, Lists, Searching, Sorting

Computer Science in this course

- We will be programming in Java

- What is a programming language?

Logistics

Workload

- At least 10 hours a week

- Weekly homework assignments:
  - This is where learning happens!

- Weekly labs: prep for homeworks

- Daily reading

- 100-level class != lighter workload

- Course webpage:
  - https://BMC-CS-113.github.io

- Gradescope:
  - Submitting assignments

- Piazza:
  - Course Communication
  - Ask Questions!!
  - **<u>If you did not get a link to enroll in the Piazza, please email me.</u>**

Schedule

- Assignments <u>due on Thursdays</u> released on Sundays

- Lab is on Thursdays after class
  - In this room

Assignments

Learning by doing!

- Homeworks
  - 20 points deducted each day. After two days, the submission window will close.
- Labs
  - Thursdays after this class
  - **Do Lab0 before Lab on Thursday**

AI Disclaimer!

Assessments

- Midterms – During Class Time
  - March 7th (Thursday before Spring break)
  - April 9th

- Final Exam:
  - Self-scheduled

Syllabus

- Homeworks: 30%
- Labs: 5%
- Midterms: 25%
- Final: 35%
- Participation: 5%

Teaching Assistants

- Alison Teske
- Magdalen McCulloch (Lab TA)
- Maha Attique (Lab TA)
- Hazel Nguyen
- Mariya Mushtaq

Teaching Assistants

- Office hours Park 231:
  - Monday 8-10pm
  - Tuesday 8-10pm
  - Wednesday 6-10pm
  - Thursday 6-10pm
  - Friday 10-12am (professor)

Our job is to help you succeed!

Accessing Lab Machines Remotely

Folders & Directories

- Computer is structured as a folder-system.
  - Folders (directories) can contain files and other directories

Accessing Lab Machines Remotely

1. Change your password

2. Navigate Linux file system

Navigating Linux Directory

Terminal commands
- List files
  - ls
- Move directories
  - cd
- Print the path to working directory
  - pwd
- Make a directory
  - mkdir

A simple java program

```java
1 // A java program to print a message
2 public class HelloWorld {
3
4   public static void main(String[] args) {
5     // Prints out message to standard output
6     System.out.println("Hello World!");
7   }
8 }
```

Compiling

- Converting java file (.java) to a file that the computer understands (.class, this is called a binary file)

javac filename.java

- Compiler is your friend, will tell you when there are errors

Running

java filename

- Don't include the *.class

Compiler Errors

Back to demo….

Before next lecture

- Read chapter 01

- **Complete Lab00:**
  - Set up linux account on the CS lab machines
  - Learn how to use the command line
  - VIM
  - Create folder structure on the CS lab machines

- Sign up on:
  - Piazza
  - Gradescope

- **HW00 out now due Thursday February 1st**