CSC120 2025S Lab No.1
Introduction

Part 1: IntelliJ

1. Install IntelliJ on your computer from the site:

   `https://www.jetbrains.com/edu-products/download/#section=idea`

   Navigate to Download and then choose Community for a free download.

2. Follow your instructor's guidance to set up **IntelliJ**. We will use IntelliJ for developing codes for lab assignments.

3. Follow your instructor's guidance to set up a folder (or a package) for writing programs for the first-day lab tasks.

4. Once you complete downloading, write the following `HelloWorld` class:

```
1  public class HelloWorld {
2    public static void main( String[] args ) {
3      System.out.println( "Hello, World!" );
4      }
5  }
```

Part 2: Introduction

Write a program, `Intro.java`, that produces five statements to introduce a person or a pet.

```
This [KIND] is [NAME].
[NAME]'s age is [AGE].
[FOOD] is [NAME]'s favorite food.
[NAME]'s favorite activity is [ACTIVITY].
```

The words surrounded by the square brackets [], KIND, NAME, AGE, FOOD, and ACTIVITY, are placeholders. Your program must substitute them with appropriate words.
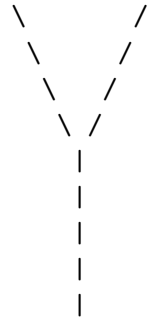
Here is an output of such a program with the necessary substitutions of the bracketed parts:

```
This kitty is Jonathan.
Jonathan's age is 2 years.
Steak is Jonathan's favorite food.
Jonathan's favorite activity is chasing squirrels.
```
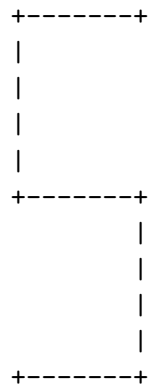
Part 3: Producing two shapes on the screen

Write a class Shapes that produces two shapes as shown next.

```
____ This is a Y ____

\         /
 \       /
  \     /
   \   /
    \ /
     |
     |
     |
     |
     |

____ This is an S ____

+-------+
|
|
|
|
+-------+
        |
        |
        |
        |
+-------+
```

Part 4: Computing the Area of Trapezoids

Write a program `Trapezoid.java` that computes the area for two trapezoids when given the top and the bottom lengths and the height. For each trapezoid, the program specifies the top, the bottom, and the height of the trapezoid in individual `System.out.println` statements. The program computes the area by directly putting the formula

$$([BOTTOM] + [TOP]) * [HEIGHT] / 2$$

inside one `System.out.println` statement, with `[BOTTOM]`, `[TOP]`, and `[HEIGHT]` substituted with the values you are using. In the statements for the first trapezoid, use numbers without decimal points. In the statements for the second trapezoid, use numbers with decimal points.

For example, the output of the program can be:

```
--- Trapezoid Number 1 ---
Top: 23
Bottom: 30
Height: 17
Area: 450
--- Trapezoid Number 2 ---
Top: 23.0
Bottom: 30.0
Height: 17.0
Area: 450.5
```

To generate these outputs, split each output line into two parts: the first part prints the text part, including the whitespace, using a `System.out.print()` statement, and the second part prints the quantity using a `System.out.println` statement. For example, the first line should use the following two statements:

```
System.out.print( "Top: " );
System.out.println( 23 );
```

and the first line for the second trapezoid is produced by

```
System.out.print( "Top: " );
System.out.println( 23.0 );
```

In the above example, calculating real numbers produces 450.5, while calculation as whole numbers produces 450 as a rounded-down number.