



CS 113 – Computer Science I

Lecture 03 – Input/Output

Tuesday 1/30/24

Announcements

- HW00 is released **due Thursday**

Outline

- Review
- String formatting
- A new input reading approach: Scanner
- Continue Lab1

I/O

Output:

- `System.out.println()`

Input:

- `System.console().readLine()`

Converting Types (Strings & Numbers)

- Integer to String

- `int a = 23;`
- `String numMajors = String.valueOf(a);`

- String to integer

- `int x = Integer.parseInt("40");`

- String to double

- `double a = Double.parseDouble("40.11");`

Swap Two Numbers

- Implement a program that swaps the values of two variables. Take two numbers as input and print the swapped values.

Leap Years

- Take as input a year and output the next 4 leap years

String Formatting

String formatting

```
System.out.println("Hi" + name + " I am " + age);
```

plus sign operator is a bit clunky... especially when we have a lot of variables

String Formatting

Code!

<code>%d</code>	Integer in base 10 (“decimal”)	12345
<code>%,d</code>	Integer with comma separators	12,345
<code>%08d</code>	Padded with zeros, at least 8 digits wide	00012345
<code>%f</code>	Floating-point number	6.789000
<code>%.2f</code>	Rounded to 2 decimal places	6.79
<code>%s</code>	String of characters	<code>"Hello"</code>
<code>%x</code>	Integer in base 16 (“hexadecimal”)	bc614e

Table 3.1: Example format specifiers

String Formatting

```
System.out.printf("My name is %s and I am %d years old.", name, age);
```

**Do we want to start lab now
or learn one more concept?**

A new input reading approach: **Scanner**

- What if we want to read from a file?
- Type casting is a bit annoying

```
Scanner sc = new Scanner(System.in);
```

<https://docs.oracle.com/javase/8/docs/api/java/util/Scanner.html>

Let's try re-coding LeapYears with it

Continue Lab1