CSE 121 – Lesson 2

Miya Natsuhara Spring 2023

Music: 121 23sp Lecture Vibes



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Announcements, Reminders

- Creative Project 0 due tomorrow (April 6) @ 11:59 PM
- Programming Assignment 0 released later today (due Tues, April 11)
- IPL is open! <u>Schedule and instructions</u> can be found on course website.
- Just joined CSE 121? Resubmission policy is your friend!
 See more in <u>syllabus</u>.
- Reminder: Pre-Class Work and Section work are not graded! (but you should do them anyway (5))

PCM Recap: Data Types & Expressions

- Types: int, double, String, boolean
- Expressions: Operators
- Beware of precedence! (order of operations)

(PCM) Data Types in Java

In programming, you're dealing with data...

- ints (whole numbers)
- doubles (real numbers)
- Strings
- booleans (true or false)

(PCM) Operators (for numerical & String values)

Numerical:

- + Addition
- Subtraction
- * Multiplication
- / Division
- % Modulo or "Mod"

• <, >, <=, >=, ==, !=

Strings

+ Concatenation

Booleans

- ! Logical Not
- && Logical And
- || Logical Or

(PCM) Precedence

Parentheses

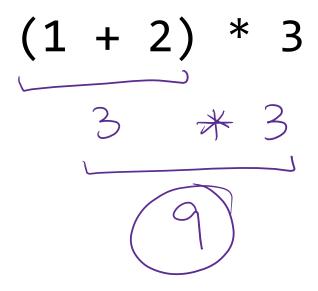
Multiplication, Modulo, Division

Addition (and Concatenation), Subtraction

If multiple operators at the same level?

Evaluate subexpressions from left to right!

Example



Work on Expressions/Types Practice Problems Part 1

- Ed lesson linked from the course calendar
- Work with the folks around you!
- TAs and I will be walking around to help

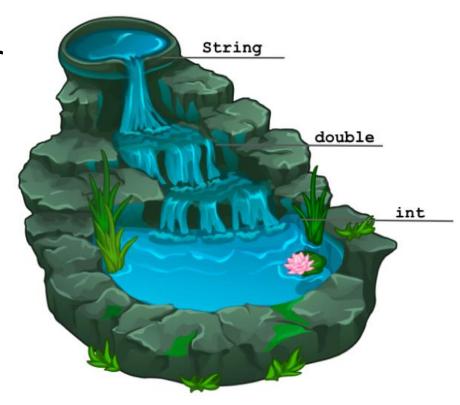
Questions?



(PCM) Mixing Types

When mixing types in an expression,
Java will convert one type to the other
and then perform the operation
"normally"

- ints can be converted to doubles
- Both ints and doubles can be converted to Strings



Example 2

Work on Expressions/Types Practice Problems Part 2

- Ed lesson linked from the course calendar
- Work with the folks around you!
- TAs and I will be walking around to help

Questions?



(PCM) Boolean Operators

- Logical Not
- <> <= >= Relational Operators
- == != Relational Operators (equality)
- && Logical And
- Logical Or

(PCM) Precedence (updated)

Logical not

Parentheses

Multiplication, Modulo, Division

Addition (and Concatenation), Subtraction

Relational operators

Equality operators

Logical and

Logical or



Example 3

$$1 + 2 * 3 != (1 + 2) * 3$$

$$1 + 2 * 3 != 3 * 3$$

$$1 + 6 != 9$$

$$1 = 9$$

$$1 = 9$$

Work on Expressions/Types Practice Problems Part 3

- Ed lesson linked from the course calendar
- Work with the folks around you!
- TAs and I will be walking around to help

Questions?

$$| (1+2==3 & 8 & 107 & 4 > 2)$$

$$| (1+2==3 & 8 & 2 > 2)$$

$$| (3==3 & 8 & 2 > 2)$$

$$| (3==3 & 8 & false)$$

$$| (4rue & 8 & false)$$

$$| (false)$$

$$| true)$$

Variables

- Now that we know about different types and data, we can learn about how to store it!
- Java allows you to create variables within a program. A variable has
 - A type
 - A name
 - (Potentially) a value it is storing

Declaration: int x;

Initialization: x = 30;

Or all in one line:

int x = 30;