

[CS 1114 Introduction to Java]
(Lab 2)

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[Recap]

- Compiling and running programs
- Parts of a program
 - Class declaration
 - Main method
 - What are the parts of any method?
- Statements
- Printing

[Variables]

- *Types*
 - int
 - double
 - String
 - boolean
- *Declaration*
 - `int varOne;`
 - `Double x;`
 - `String str;`
 - `boolean flag;`
- *Initialization*
 - `varOne = 5;`
 - `x=4.5;`
 - `str = "hello world";`
- *Reuse*

[Variables – con't]

- Arrays

[I/O
Command Line Input]

- Command line parameters
- String[] args
- java filename input1 input2 3 ...
 - *Whats in args[0]*
 - "Input1"
 - *Whats in args[2]*
 - "3"
 - *What's in args[3]??*

[I/O
Output with variables]

- System.out.println("string literal" + var);

Conversion between data types

- Casts

```
double num = 3.4;  
int var = (int) num + 5;
```

- Useful in division!

- Strings to integers...

- `int input = Integer.parseInt(args[0]);`

- Strings to doubles

- `double input = Integer.parseDouble(args[0])`

Math operators

- Data types are important here!

- `+, -, *, /`

- `++, --`

- `%`

- `&&`

- `||`

Next time

- Methods in detail

- Having more than one method in your program

- Method calls

- Input and variable scope

- return values

- Conditional statements

- Loops

Assignment

- Write a program, `Calculator.java` (for Java students) that takes two non-zero integer command line parameters, performs the following calculations, and prints out the result of each operation. The operations which you need to implement are:
- $a+b$ (addition) , $a*b$ (multiplication) , a/b (division) , $a \bmod b$ (modulus) , $((a-1)*(b-1))+(b+1)+(b+2)$
- Please return the results in the above order and clearly label each result. See below for a sample output.
- Sample Output for java `Calculator 2 4`
The sum of 2 and 4 is 6
The product of 2 and 4 is 8
2 divided by 4 is .5
2 % 4 is 2
I computed $((2-1)*(4-1))+(4+1)+(4+2)$ to equal 14
