**User input & Strings**

Reference: Gaddis 2.9, 2.11, 2.13-24

Topics: math shortcuts, user input, strings

**Math Shortcuts**

|  |  |  |  |
| --- | --- | --- | --- |
| **Shortcut** | **Purpose** | **Ex. Assume int a = 7;** | **Result** |
| ++ | Preincrement &  Postincrement | System.out.println (++a);  a=7;  System.out.println (a++); |  |
| -- | Predecrement &  Postdecrement | System.out.println (--a);  a=7;  System.out.println (a--); |  |
| += | Increase by right side | a += 3; |  |
| -= |  | a –= 7; |  |
| \*= |  | a \*= 10; |  |
| /= |  | a /= 4; |  |
| %= |  | a %= 5; |  |

**User Input -** *Console input*

What if I don’t just want to set the value in code, but want to be able to run the program and give it a new value every time??

Algorithm for User Input:

* 1. Declare variable to hold user input value
  2. Declare Scanner object
  3. Output instructions to user
  4. Read in user input using appropriate Scanner method

Example: Write an algorithm to calculate how many months someone has been alive given their age. Request the age from the user.

The Code:

//to use Scanner you need a special line called an

public class AgeCalculator

{

public static void main(String[] args)

{

byte age; //will hold age input by user

//User gives the age

// calculation for number of months alive

final byte MONTHS\_PER\_YEAR = 12;

int months\_alive = age \* MONTHS\_PER\_YEAR;

//Output with age in years and months

System.out.println("If you are " + age + "years old, you've been alive for "

+ months\_alive + " months");

}

}

We can input any type of data by using different *Scanner methods* (pg 86)*.*

A few examples, assuming we have written *Scanner myScan = new Scanner(System.in);*

int:

double:

**Strings**

What about inputting an entire word or phrase? We need a

We already learned about strings as a

We can also create them as an , which is created from the String

How do we use Scanner to input a String?

\*\* NOTE: If you ask the user for a number, and then later ask them for a String, you need to put the following line between those two:

Scanner.nextLine();

**User Input –** *Dialog Input*



Uses objects from the class

Always need to write at the top of the file:

*Input: Input Dialog*

Algorithm:

1. Declare a String to hold input value
2. Use JOptionPane to ask for and read in input value, storing value in a variable

* Tricky part: Input is always a
* Let’s ask for age, which we need to be an int:

*Output*: *Message Dialog*



Uses the same class:

But a different method:

**Summary:**

* Shortcuts can help with math
* There are 2 ways to use classes:
  + Like with the Math class, we do *ClassName.methodName()*
  + Like with the Scanner class, we do *ClassName object = new ClassName(arg)* and then *object.methodName()*
* There are 2 ways to get input from the user:
  + Scanner class (console)
  + JOptionPane (popup box)