Recitation 2

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Main method signature

- public static void main (String[] args)

- **REMEMBER IT!**

- **I am serious. REMEMBER IT!**

Identifiers

- Can’t start with a digit
- Can contain letters, digits and underscores
- Legal: twoThirds, bird1, super_man.
- Not legal: 1plus2

Naming Convention

- Variable:
  - Use mixed case letters: orderList
  - Shouldn’t use: OrderList, order_list
- Class: starts with a capital letter
  - Ex: HelloWorld, not helloWorld

Variables

- Identifiers that name a value. A variable has:
  - A type (String, double, int, float, etc.)
  - A storage location for value
- Example: double myNum = 5.0;
  - double: type
  - myNum: name
  - 2.0: value
  - =: assignment operator

Variables

- Initialization statement: double myNum = 5.0;
- double myNum = 2.0 + 3.0;
  - double myNum: a variable identifier
  - 2.0 + 3.0: an expression
  - 5.0: value of the expression above

Conversions

- Widening conversions
- Narrowing conversions

Widening conversions

- double myNum = 2.f + 4;
  - 4 is converted to a float.
  - 2f + 4f gives 6f.
  - Upon assignment to myNum, 6f is converted to a double.
  - The result is myNum = 6.0;

Widening conversions

- float myNum = 4f/2;
  - 2 is converted to a float (2f)
  - 4f/2f gives 2f
  - myNum = 2f

Widening conversions

- float myNum = 6/2f;
    - 6 is converted to a float (6f)
    - 6f/2f gives 3f
    - myNum = 3f

Widening conversions

- double myNum = 6f/2.0;
  - 6f is converted to a double (6.0)
  - 6.0/2.0 gives 3.0
  - myNum = 3.0

Narrowing conversions

- float myNum = 4.0/2.0 -> won’t compile
- float myNum = (float) (4.0/2.0) -> will compile
- float myNum = (float) 4.0/2.0 ??? (Continue on next slide)

Narrowing conversions

- float myNum = (float) 4.0/2.0
  - (float) 4.0/2.0 = ((float) 4.0) / 2.0
  - So myNum = 4f/2.0
  - 4f is converted to a double (4.0)
  - Then myNum = 4.0/2.0 = 2.0
  - Since myNum is a float, this won’t compile.

Narrowing conversions

- Careful with narrowing conversions!
- Convert variables step-by-step to prevent errors.

String

- String k = “CS1331_is_awesome”
  - k.length() = 17 (an int)
  - k.indexOf(“C”) = 0 (an int)
  - k.indexOf(“1”) = 2 (index of first occurrence)
  - k.indexOf(“z”) = -1 (z cannot be found)
  - k.charAt(2) return a ***char*** NOT a string

String

- String k = null;
  - int a = k.indexOf(“a”) makes Java throws NullPointerException
  - Reason: you declare the variable but did not create the object.
  - Fix: create the string object k by assigning k with a string. Ex: k = “Hello”

String

- API: http://docs.oracle.com/javase/7/docs/api/java/lang/String.html

- The site has all String available methods and return type.

- Don’t worry about constructor for now!