Step Into Java: doubles

Mr. Neat Java

doubles

What if there were just int's? Calculate GPA:

$$(3+4+4+4+3)/5 = ?$$

$$(3.0 + 4.0 + 4.0 + 4.0 + 3.0)/5.0 = ?$$

doubles

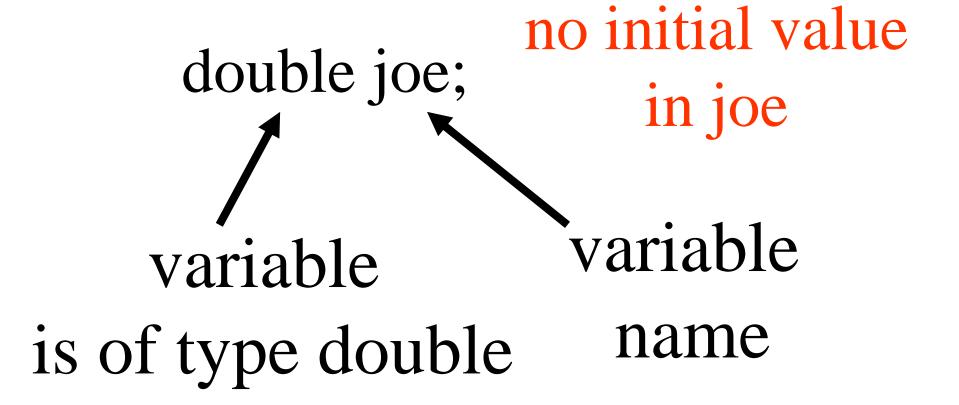
Simple Definition:

- two whole numbers with a decimal between them
- can be +, -, 0
- used for measuring

Advanced Definition:

- Value ranges
 - furthest from zero 1.7e³⁰⁸
 - closest to zero 1.7e⁻³⁰⁸

double variable creation:



Would this compile?

System.out.print(joe);?

- don't mix double's and int's when comparing (<, >)
- don't mix double's and int's when doing math
- don't compare doubles for equality (==, !=, <=, >=)

```
int john;
double sam;
EasyReader sue = new EasyReader();
sam = sue.readDouble();
john = (int)sam;
                casting
(truncates towards zero)
```

If sam = 5.9, john = 5!

random #'s

- Most games rely on a random number generator.
 - pick a number
 - slot machines
 - lottery
 - black jack

How do you make a random number in java?

How do you make a random number in java?

- Call the Math.random() method.
- This is a *static* method....Hmm?
- it provides a value between 0 and 1 (a double)

System.out.print(10.0*Math.random());

What does this do?

Lab

Write a java program that is a number guessing game. The user must guess a number between 1 and 1000. The program will tell the user whether the user was correct or not.

Example Program Output

Please guess a number between 1 and 1000:

445

Sorry, your guess was incorrect. The number was 446.