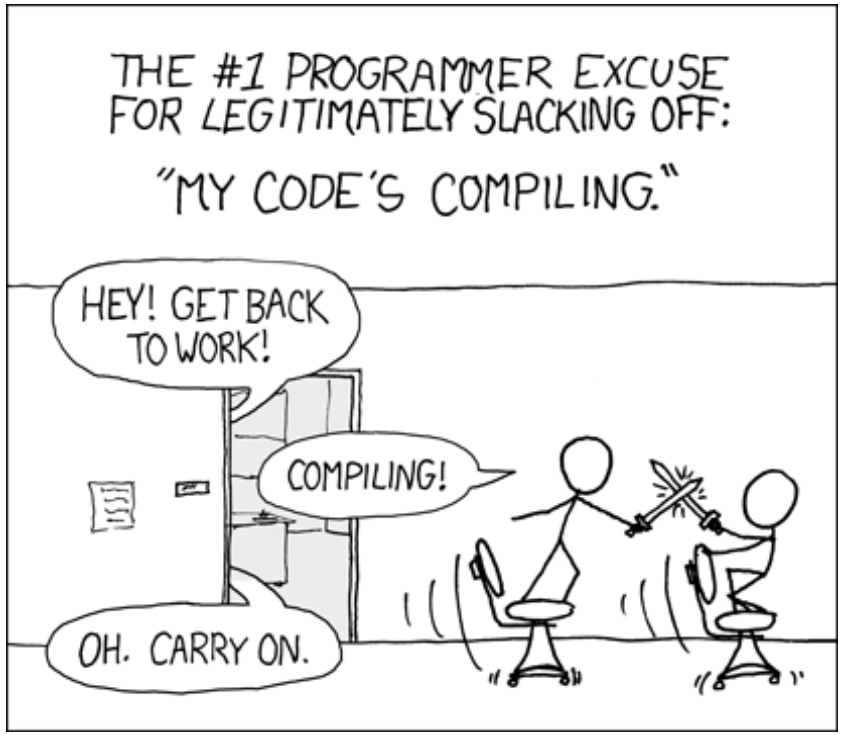
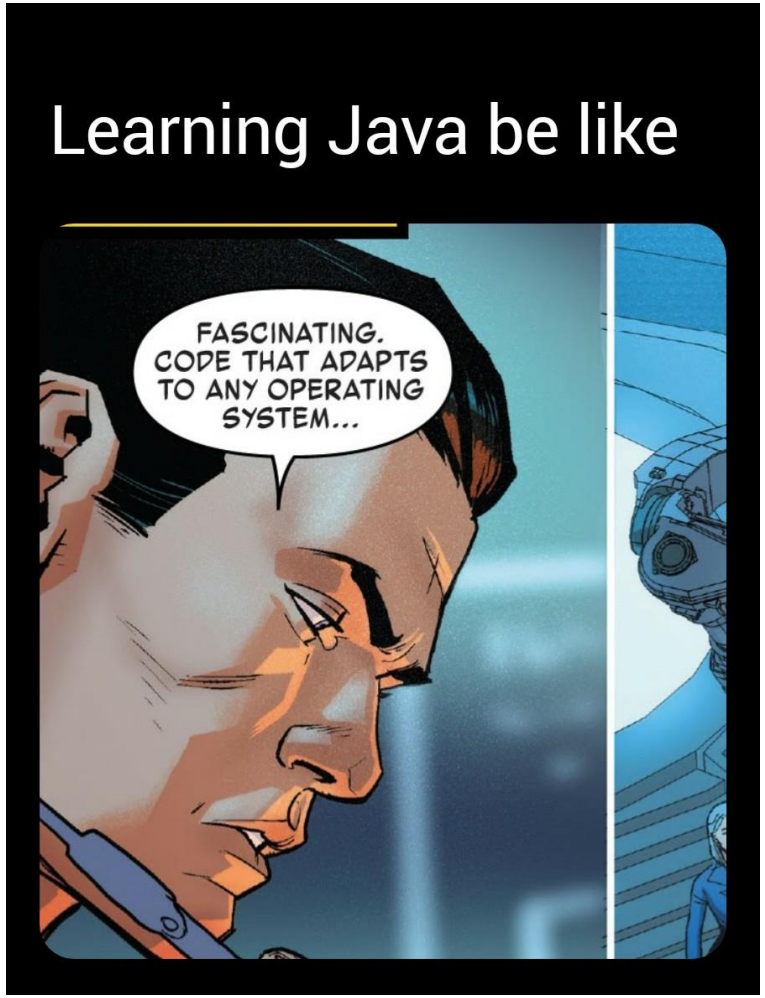
CS 170: Values, Types, Operators, and Variables



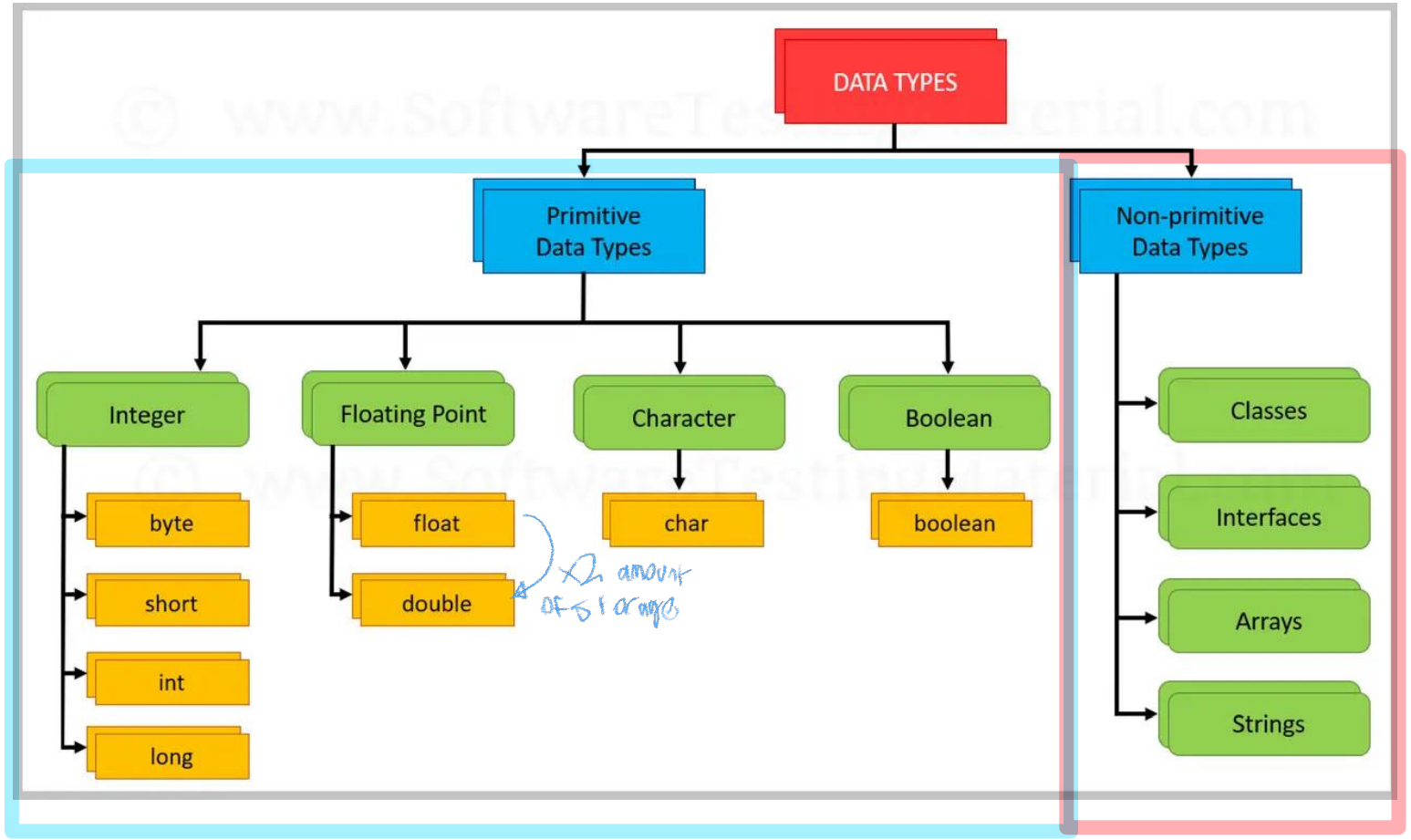


Announcements & Reminders

- Complete Beginning of Semester Survey on Canvas
- Join 170 Slack (link on Canvas)
- Read through the syllabus
- Labs begin tomorrow (MSC E308A – computer lab classroom)
- CWP 1 due tomorrow at 4pm
- If you have a DAS letter, contact me to discuss

Types & Values

- Every value in Java is associated with a particular type
- This type defines what kind of data the value represents

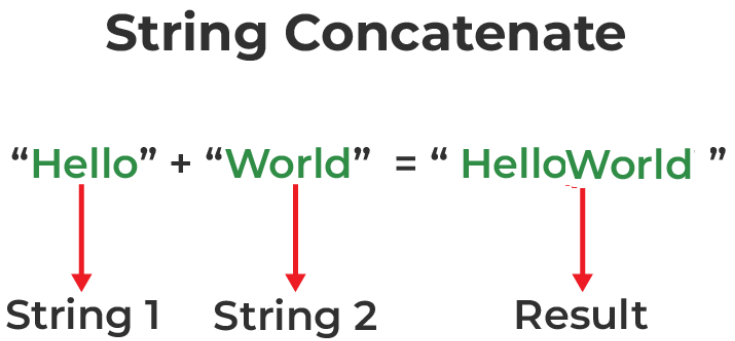


Operators

Arithmetic Operators

Operator	Function
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus (remainder)

String Concatenation



Operator Precedence

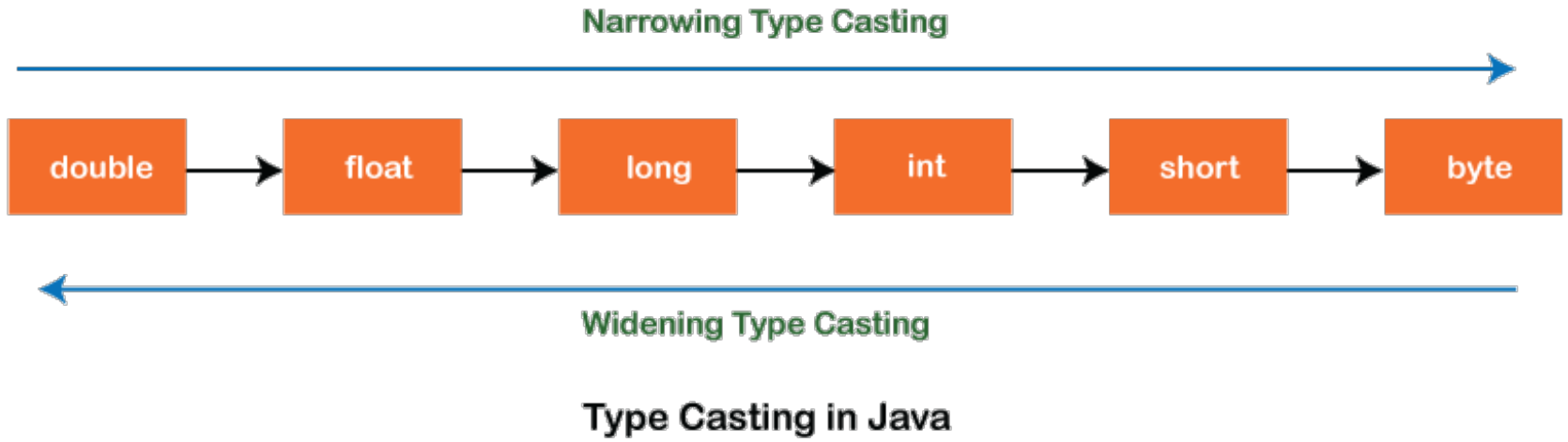
Operator's Precedence in Java

Operators	Precedence
!, +, - (unary Operators)	First (Highest)
* , / , %	Second
+ , -	Third
< , <= , >=, >	Fourth
== , !=	Fifth
&&	Sixth
||	Seventh
= (assignment Operator)	Lowest

- You can use parenthesis to adjust the precedence order.

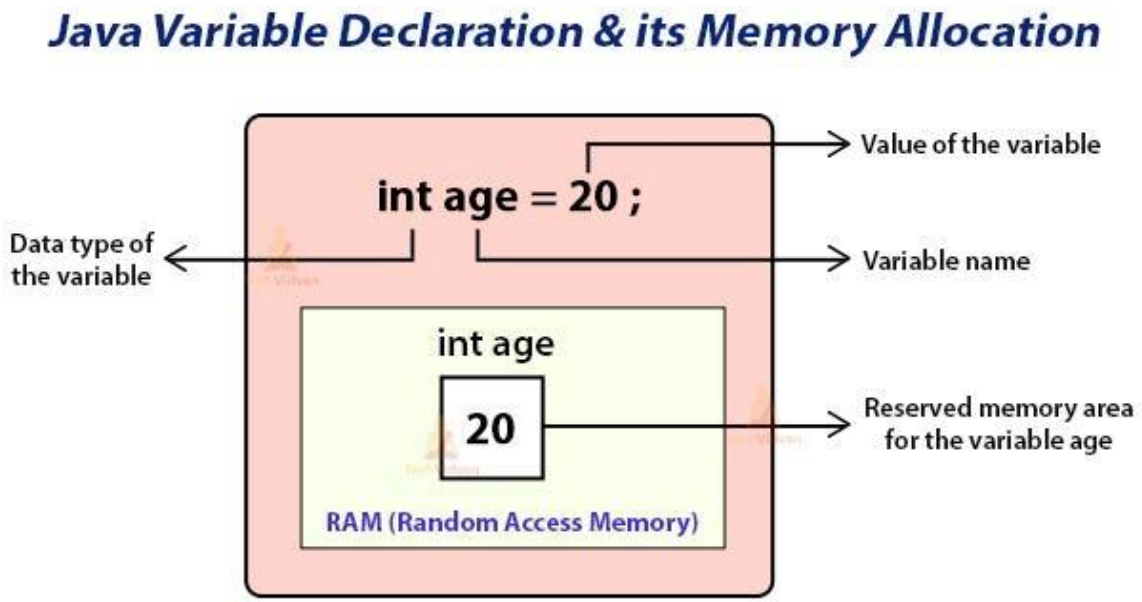
Malik AB

Type Conversion



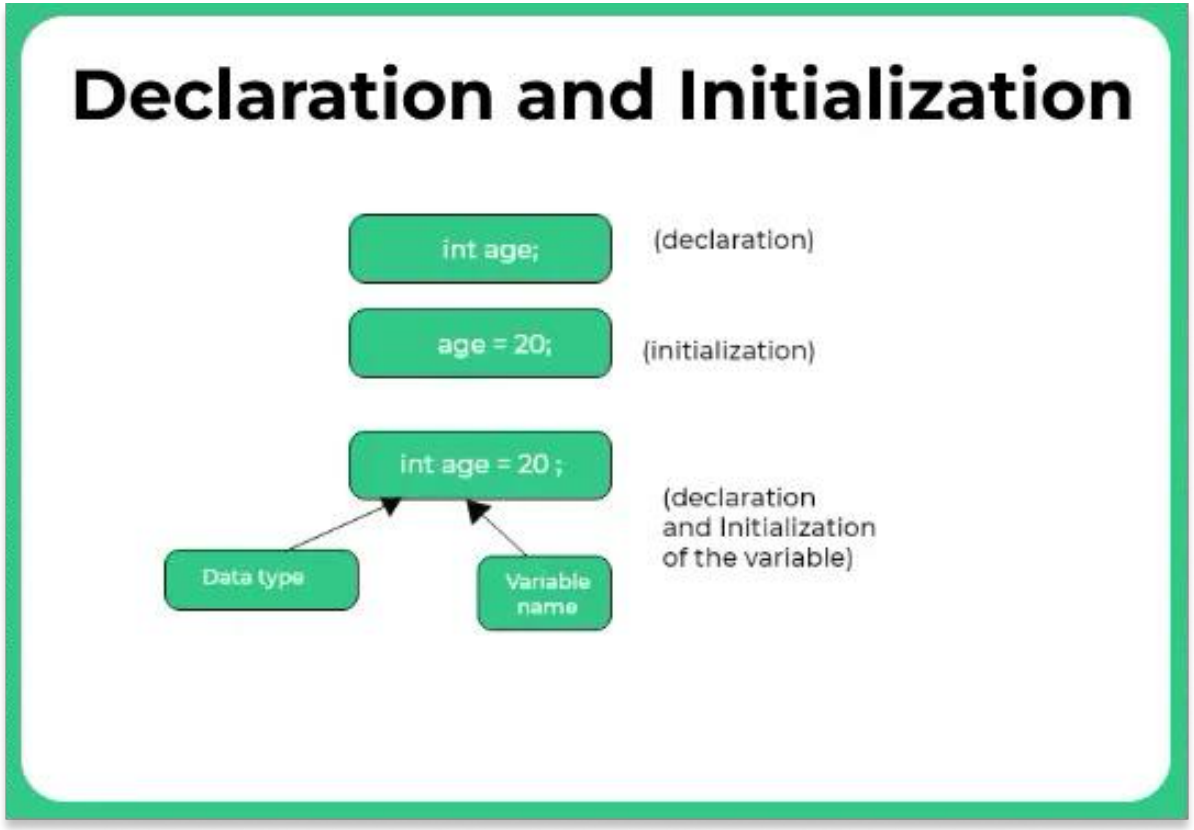
Variables

- Variables are named containers that hold values
- Every variable has a defined type that cannot change



Declaration, Initialization, Assignment

- Declaration: give a variable type & name
- Initialization: give a variable an initial value
- Assignment: assign a variable another value



Assignment Operators

Operator	Operation	Equivalent to
=	num = 5	num = 5
+=	num+=5	num = num+5
-=	num-=5	num = num-5
*=	num*=5	num = num*5
/=	num/=5	num = num/5
%=	num%=5	num = num%5

Operator	Name	Example expression	Meaning
++	Postfix increment	x++	add 1 to x and return the old value
++	Prefix increment	++x	add 1 to x and return the new value
--	Postfix decrement	x--	take 1 from x and return the old value
--	Prefix decrement	--x	take 1 from x and return the new value