

COP 3330 9/9/2026

1) P3 Posted, Syllabus

2) Static Methods

→ Greatly augment our ability to write complex programs!

Limitations of the human brain!

→ we can only keep track of 3-7 things in our working memory.

Writing lots of code in one method gets difficult and buggy the longer + more complicated + more variables there are - too much to keep track of!

Once we have multiple methods (functions) at any given point in time, we only have to remember what

(a) what the variables in the function are doing

AND

(b) How to call other functions
(what input to give them + what they do)

CODE REUSE !!!

funcA(fp)

main

[

funcA(P1)

:



p1

p1

p1

funcA(P2)



p2

p2

p2

READABILITY !!!

WHY DO INTRO STUDENTS RESIST
WRITING PROGRAMS W/MULTIPLE METHODS?

1) More typing?

2) Less natural thinking.

3) New way of thinking.

(4) ~~Try~~! They try, but if doesn't work
give up!

My opinion

LAZY

- #1: Students don't understand how they work (then an assignment will take longer than if it's all written in main.)
- #2: For small assignments, there's MORE code with methods.

Static methods

↳ belongs to the class

void, int, String

public static <return type> methodName (PARAMETER LIST) {

}

PARAMETER LIST

(type var1,
type var2,
type var3,
⋮
type varn)

Parameter Passing Rules in Java

primitives - pass by value

everything else - pass by reference

main

f(a)

a [10]

a is primitive

f(a+a*a)

f(int b)

b [10]

value of the
actual parameter
gets copied into
a separate box
for formal parameter

b [110]

main
| 37 |

f(101)
37

f(int n)

n | 37 |



$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots$$

$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \dots$$

$$e(x) = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$$

reverse(String orig)

main

String tmp = "dog"

ans = reverse(~~"dog"~~);
String tmp

for (i = n; i--)

res = res + orig.charAt(i)

return res

i | 4 | +
0

tmp →

dog

res
"g"
"go"

"god"

"god"

ans