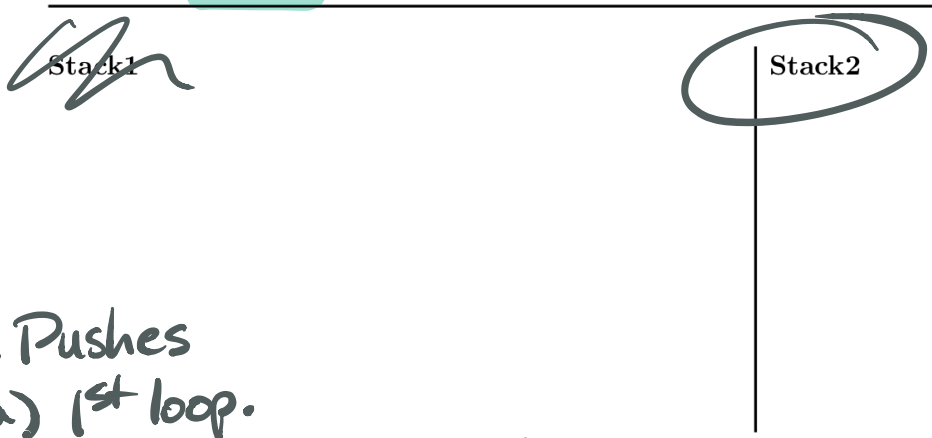
(d)
```
# s1 starts as a stack of size n, and s2 starts as an empty stack
while not s1.is_empty():
    s2.push(s1.pop())

while not s2.is_empty():
    s1.push(s2.pop())
```



1. Pushes

a) 1st loop.

	1st	2nd	3rd		nth
s2 has	0	1	2	...	(n-1)
	↓	↓	↓		↓
	1	+ 2	+ 3	+	n

$= n(n+1)/2$

b) 2nd loop: another $n(n+1)/2$ pushes

TOTAL pushes $= 2 \times [n(n+1)/2]$

$= n \times (n+1) = n^2 + n$

2. Pops a) 1st loop

	1st pop	2nd	3rd		
stack has	n	n-1	n-2	...	1
	↓	↓	↓		↓
	n+1 steps	+ n	+ n-1		+ 2

$= \left(\sum_{i=1}^{n} i\right) + n + 1 - 1$

$= \frac{n(n+1)}{2} + n$

b) second loop : another $\frac{n(n+1)}{2} + n$ steps

TOTAL pops: $2 \times \left[\frac{n(n+1)}{2} + n\right]$

$= n(n+1) + 2n$

$= n^2 + n + 2n = n^2 + 3n$

Grand total

$(n^2+n) + (n^2+3n) = 2n^2 + 4n$