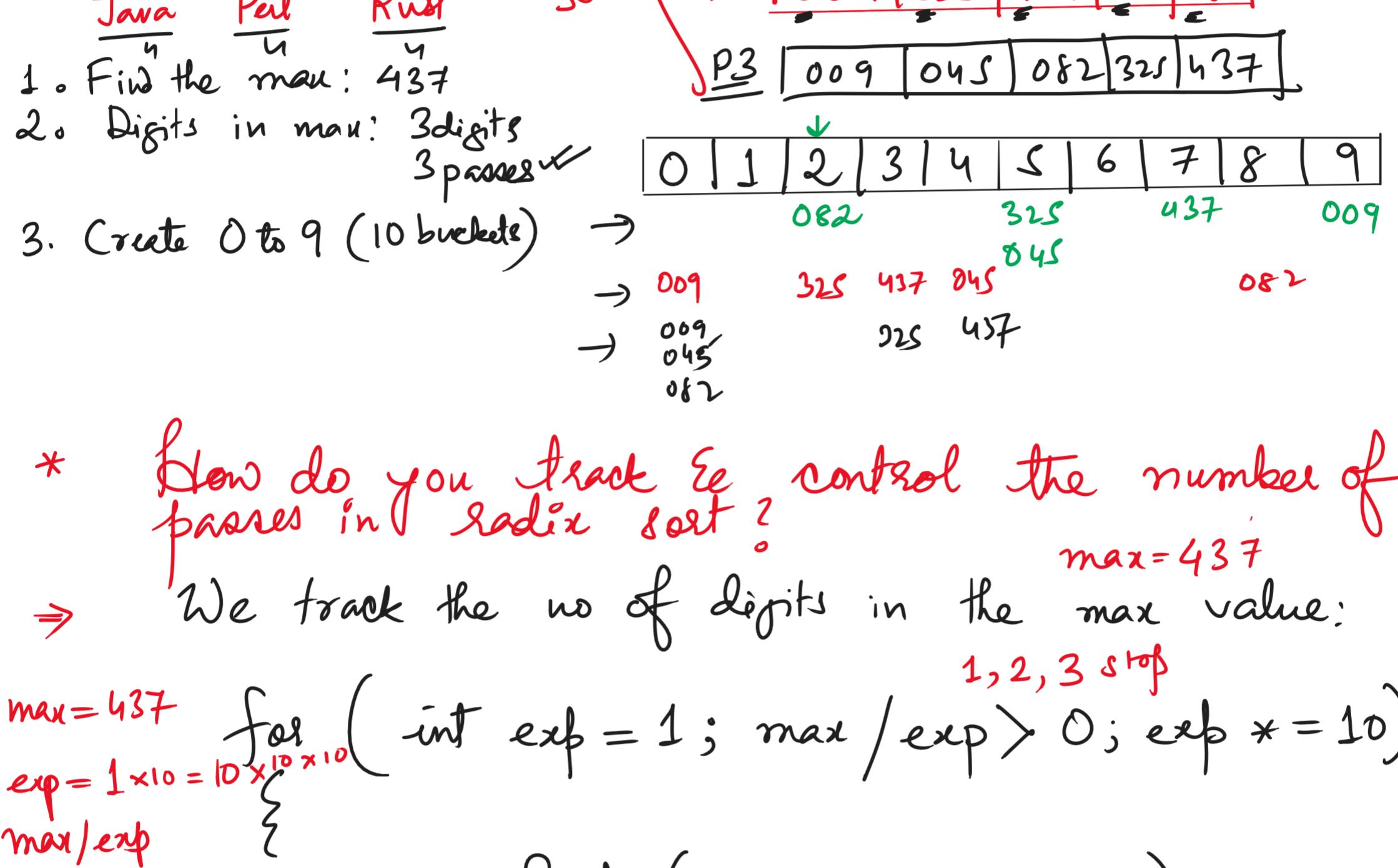


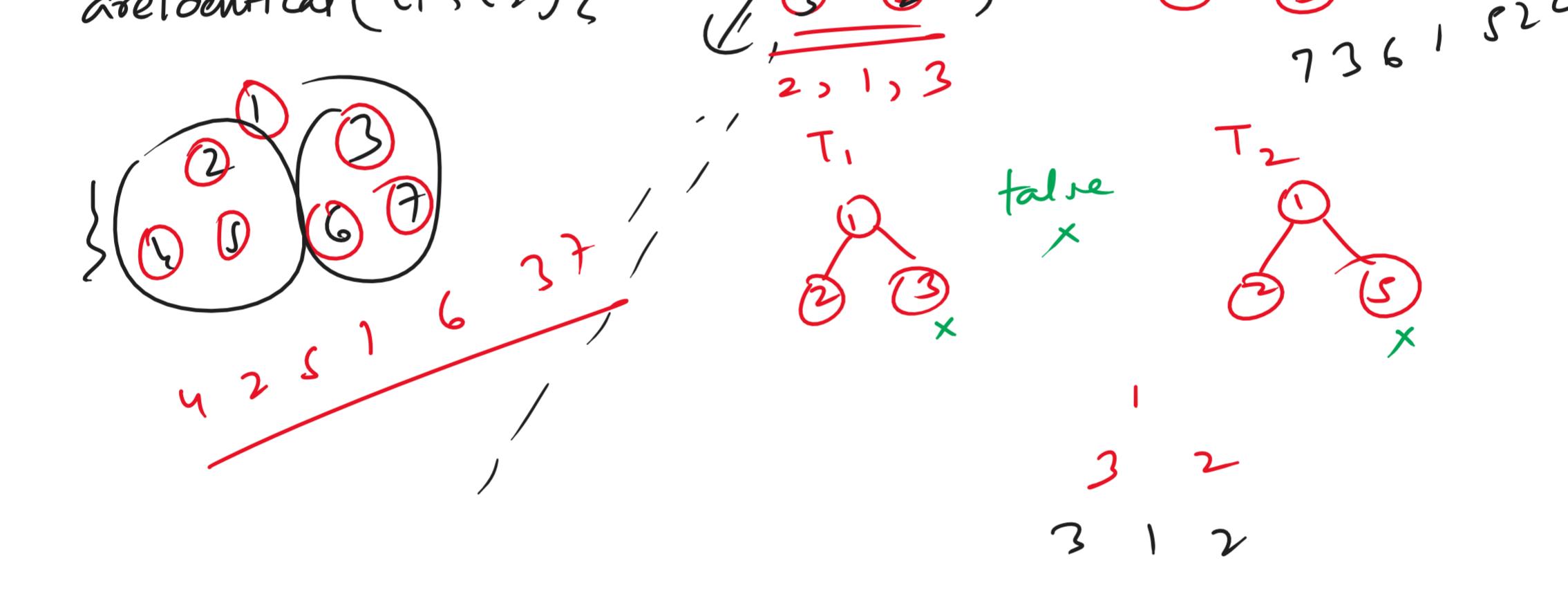
Important Algorithms for Coding Interviews → Dry Run

	$O(n)$	c_{max}	c_{max}	g_{max}
-8	$5 + (-8)$	-3	5	
1	$= -3$	-3+1	1	5
2	-2	-2	2	5
-1	$2+1=3$	3	5	
4	$-1+3=2$	2	5	6
	$4+2=6$	6		

Sorting Algorithms frequently asked in tech interviews:



Count Sort Algorithm:



(Radix) Sort Algorithm: → (1's, 10's, 100's and so on.) (Bucket Sort)

* Non-comparison algo.

* Multi-digit nos.

* Constant length strings "Java" "Pal" "Rust"

1. Find the max: 437

2. Digits in max: 3 digits

3. Create 0 to 9 (10 buckets) → 3 passes

→ 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

→ 009 | 325 | 437 | 045 | 082 | 045

→ 009 | 325 | 437 | 045 | 082 | 045 | 082

→ 009 | 325 | 437 | 045 | 082 | 045 | 082 | 082

* How do you track & control the number of passes in radix sort? → max = 437

→ We track the no of digits in the max value: 1, 2, 3 stop

max=437 for (int exp = 1; max/exp > 0; exp *= 10)

exp = 1 * 10 = $10^{10} \times 10$

max/exp = 437 / 1 = 437

437 / 10 = 43

437 / 100 = 4

437 / 1000 = 0

