Dynamic Memory Allocation: Process of allocating resources / memory to the user/application during runtime to make the system more efficient.
The header file #include <stdlib.h> is used.

(I) malloc (size) — Say 32 bytes — whole 32bytes {initially garbage}

(II) calloc (n , size) — 4B 4B 4B 4B 4B 4B 4B 4B — | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (default) — Say (int) 4bytes — 32/4 = 8 — 8 equal blocks

{ The return type of both malloc & calloc is void Pointer, so we need to perform type casting depending on the type of data. }

(III) realloc (ptr, new size); (IV) free(ptr);

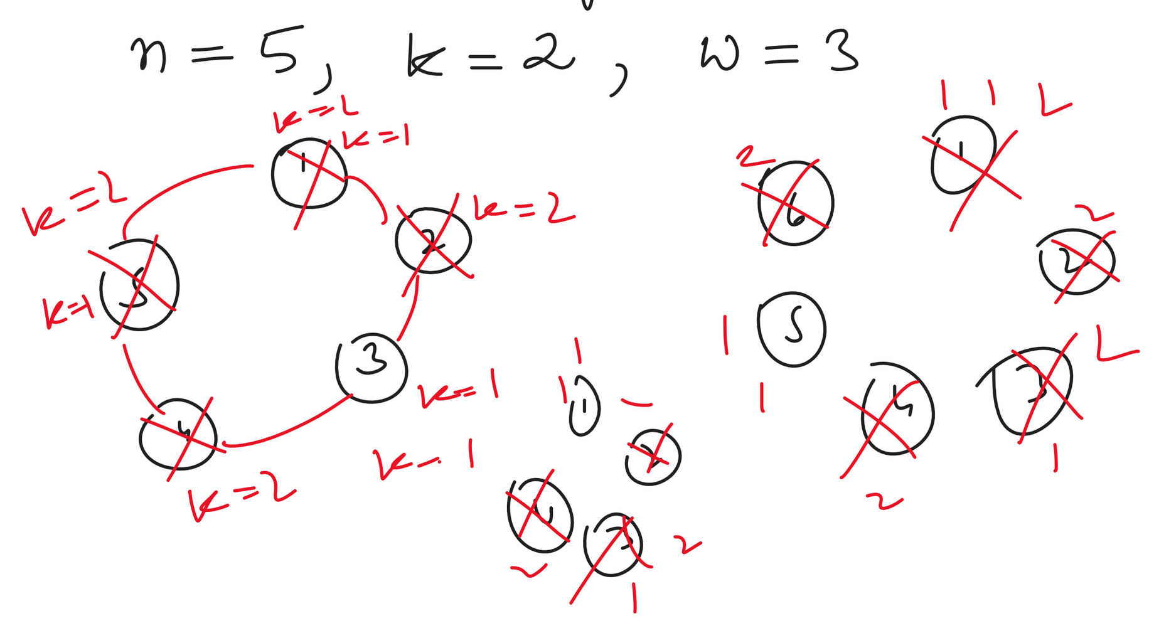
Oracle	Amazon	Microsoft
14.5 LPA	44.6 LPA	38 LPA
8.5 LPA	6.5 LPA	11-12 LPA
Cognizant	Accenture	Lumen Tech
	(1823)	

Ninja TCS 3.5 LPA
NQT → 6 LPA

Wipro 6-7 LPA

Find the winner of the Circular Game (Josephus) (Recursion)

n = 5, k = 2, w = 3



n	w
1	1
2	1
3	3
4	1
5	3
6	5

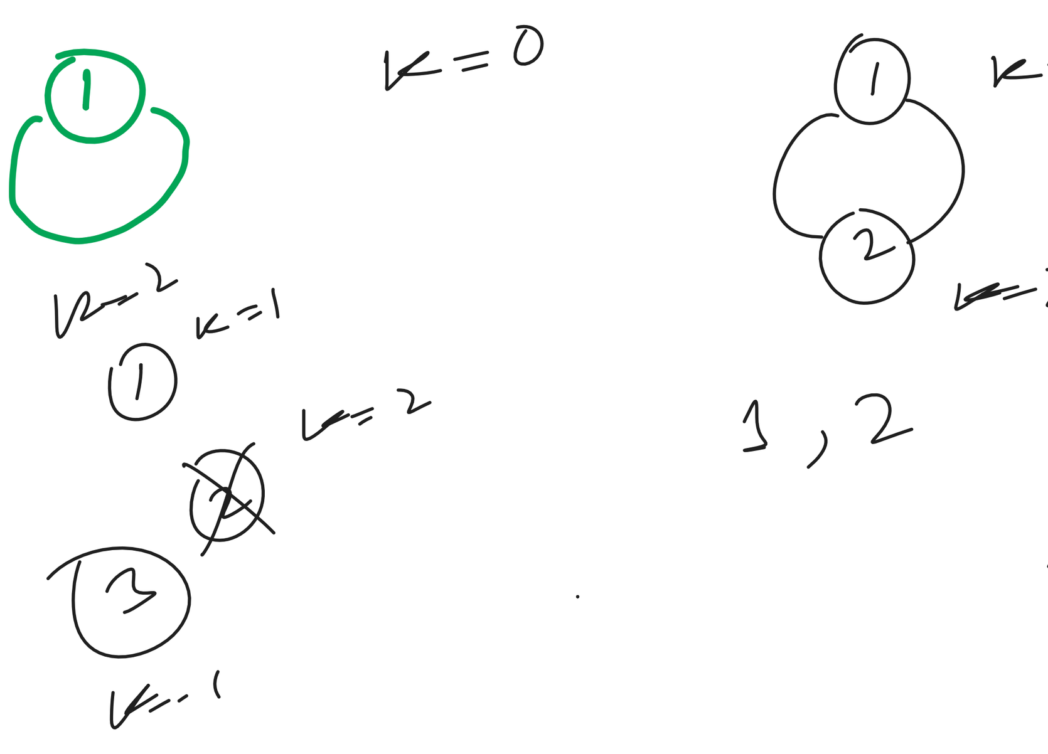
0, 1, 1, 2, 3, 5, 8, 13, - - - -

n → n-1, f(n) → f(n-1)

Solve (n, k) → Solve (n-1, k)
solve (2, k) → solve (1, k)
solve (3, k) → solve (2, k) — 1+k 1+2 = (3)
solve (4, k) → solve (3, k) — 3+k = 3+2 = (5) % n — 5%4 (1)
solve (5, k) → Solve (4, k) — 1+k = 1+2 = (3)

n	w
1	1
2	1
3	3
4	1
5	3
6	5

Solve (n, k) = {solve (n-1, k) + k} % n



+k
1 % 5 = 1
2 % 5 = 2
5 % 5 = 0
6 % 5 = 1

1, 2, 3, 4, 5 → normal
2, 3, 4, 5, 1 → 1
3, 4, 5, 1, 2 → 2
4, 5, 1, 2, 3 → 3
5, 1, 2, 3, 4 → 4
1, 2, 3, 4, 5 → 5
2, 3, 4, 5, 1 → 1

(5) 7 % 5 = (2)
(6) 6 % 5 = (1) Normalization

Solve(n, k) = {Solve (n-1, k) + k} % n

Circular Arrangement: % n

[5 % 5 = 0] 0 modulo — Ans + 1 — normalization
n = 8 — 8 % 8 = 0
if (n == 1) return 0;

- Prepinsta top 100 codes (logic)
- Leet Code
- Coding Ninjas
- Code Forces
- Hacker Rank
- Hacker Earth

{ (Geeks For Geeks) + Notes (450) 450dsa.com

Searching & Sorting Algorithms :→

(Time Complexity) (Big O Notation)

- Linear
- Binary
- Recursive Binary
- Jump Search
- Interpolation Search (POS)

CA
- Bubble Sort
- Selection "
- Insertion "
- Merge "
- Quick "
- Shell "
- Heap Sort

NCA
- Count
- Radix

(Q Spider)

- Kadane's Algo
- Sieve of Eratosthenes
- Euclid's Division Algo
- Rabin Karp Algo

Data Structures :→ Coders Arcade

- Linear: Arrays, Stacks, Queues, Linked Lists
- #in (stack) Built-in: C++ STL Standard Template Library; Java Collection Framework
- Non-linear: Trees, Graphs, Heaps, (Trie)

Version Control
Git
(Dev Ops)
22 LPA