07 Feb, 2023

40-42 Lectures for Java DSA

Flow of Java:

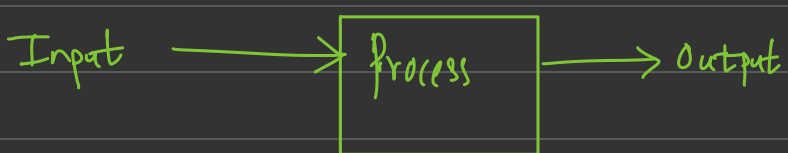
1 Intro to computer basics
2 Pseudocode
3. First Code
4 Syntax, Keywords & Operators
5 Loops -I
6. Loops -II
7. Control Structures
8. I/p O/p
9. Function
10. Time Complexity -I
11. —II— -II
12. Array 1D
13. —II— 2D
14. ArrayList
15. Strings
16 Recursion
17. Searching Linear & Binary
18. Sorting -Insertion & Bubble
19. Sorting -Selection & Quick
20 Sorting -Merge
21. Sorting- Counting, Bucket, Radix
22. General Math -I
23 —II— -II
24. Primes -Sieve of Eratosthenes
25. Modulo arithmetics
26 Bit Manipulation
27. OOP -Objects & Classes, Constructors
28 OOP -Encapsulation & Inheritance.
29. OOP -Inheritance
30. OOP -Polymorphism
31. LinkedList -I
32 Doubly Linked List
33. Circular Linked List
34 Hash Sets
35 Hash Maps
36. Stack

37. Queue
38. Trees

39. Binary Tree Traversal : BFS
40. ——"—— : DFS

No pre-requisite

- How many of you have ever started a computer?
- So what a computer does according to you in most simple terms?



- what is this i/p here?

  any piece of information / Data.

- In real life, if we want to pass info to another person, how do we do it?

  Language : English / Hindi

  Use Sign : Frowning, Nodding, Winking eyes etc.

- But, What if I want to communicate some info. to my computer/phone? So what language computers use?

  Binary (0/1)

- Why binary or why only 0/1?

  Computers use millions of electronic circuits & switches which can be either ON or OFF.

  On – 1

  Off – 0

Revise: Convert Decimal to Binary.

$(37)_{10} = (?)_2$

2	37	
2	18	1
2	9	0
2	4	1
2	2	0
	1	0
	→ 1	

$(100101)_2$

2^5	2^4	2^3	2^2	2^1	2^0
32	16	8	4	2	1
1	0	0	1	0	1

Hw: Read about ASCII number system.

X