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Data Structures

→ Difference b/w data & information.

→ Data :- It is the entity that is used for calculation & manipulation.

- Numeric data.
- Alphanumeric data.

Storing data in computer's main memory is known as representation. It must be in a organized way.

→ Data Structure :- It is representation of logical relationship existing among individual elements of data. It also consider their relationship to each other. (eg:- Wrecking of books)

It specifies these thing :-
→ Organization of data
→ Accessing methods
→ degree of associativity.

How 1 element is associated with other element

→ Primitive data structure :- Integer, character, Floating point, Pointers
→ Non-Primitive data structure :- Array, Lists, Trees
Lists → Linear, Non-linear

→ Array :- It is fixed size, sequential collection & contains same data type.

→ List :- It is ordered set with number of elements.

→ File :- It is a large list consisting of various field & is a collection of logically related information.

→ Sorting :- The way of arranging group of numbers in a particular increasing / decreasing order.

List which allows operation of insertion & deletion can be done from top. Elements [POP] can only be removed in opposite order from the order they are added. This list is also referred as LIFO (Last in first out). (Jo akhiri gaya wo pehle ~~aa gaya~~ jayega).

Stack & queue are static data structures where size is fixed.

S ≃ Stack
N ≃ No. of elements

If TOP >, N
Then write ('STACK OVERFLOW
Return

(Stack overflow)

That is inserted

PUSH (5, T

Top must be less than N for insertion of element & increment of top

AB+CD*E-F+G-

Prefix A+B-C*D*E+F-G

(+AB)-(*CD)*E+F-G

(+AB)-(**CDE)+F-G

(-+AB**CDE)+F-G

(+-+AB**CDEE)-G

-+-+AB**CDEFG

⇒ a+b*c-d/e*h

Postfix:-

a+(bc*)-(de/)*h

(abc*+)-(de/h)*

abc*+de/h*-

Prefix:-

a+(*bc)-(/de)*h

(+a*bc)-(*/deh)

-+a*bc*/deh

⇒ ((a+b^c^d)*(e+f/d)).

Postfix:-

a+abcd^^+ef/d+*

Prefix:-

*a+a^^bcd+e/fd.

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while (!b)
Push (s, top, a)
After b
pop
Aaabb : stack

⇒ A + B - (C * D) + E - (F / G)

Postfix :- A + B - (CD*) + E - (FG/)

(AB+) - (CD*) + E - (FG/)

(AB+CD*) + E (FG/) -

AB + CD* - E + (FG/) -

Prefix (+AB) - (*CD) + E - (/FG)

- (+AB*CD) + (-E/FG)

+ - (+AB*CD) - E/FG

- + - + AB*CD E/FG .

⇒ A + B - (C * D) * E + F - G

Postfix :- A + B - (CD*) * E + F - G

(AB+) - (CD*E*) + F - G

(AB+CD*E*-) + F - G

(AB+CD*E*F+) - G

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Queue

Insert X ~~from~~ linked list (x, First).

Link list

Algo :—

1. Link list insertion in first.
2. Link list insertion in last.
3. Link list insertion in sorted list.
4. Link list delete element.
5. No. of Nodes in list.
6. Copy of a link list.
7.
8.
9.

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	Pre-order	Inorder	Postorder
1	1, 2, 3, 4, 5	2, 1, 4, 5, 3	2, 5, 4, 3, 1
2	50, 25, 22, 15, 40, 30, 75, 60, 80, 90	15, 22, 25, 30, 40, 50, 60, 75, 80, 90	15, 22, 30, 40, 25, 60, 90, 80, 75, 50
3	15, 3, 8, 1, 22, 45, 23, 34, 65, 78	5, 6, 15, 1, 22, 24, 23, 45, 65, 78	6, 3, 34, 23, 78, 45, 22, 1, 15

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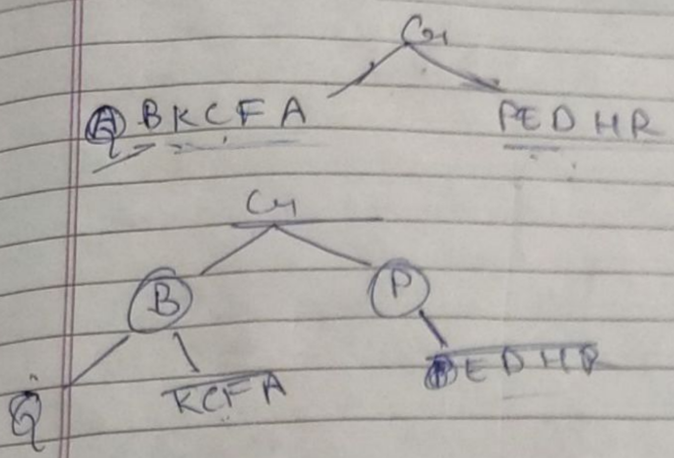
→ To interact with friends.
→ To getting heard someone talk about us.

Awareness :— To Having knowledge about the things surrounded you.

- Self-awareness.
- Social - awareness.
- Organisational-awareness.

→ What is success?
→ What is your story?
  ↳ What you learnt & how they guide you?

→ What holds you back?
what would you do if you are free from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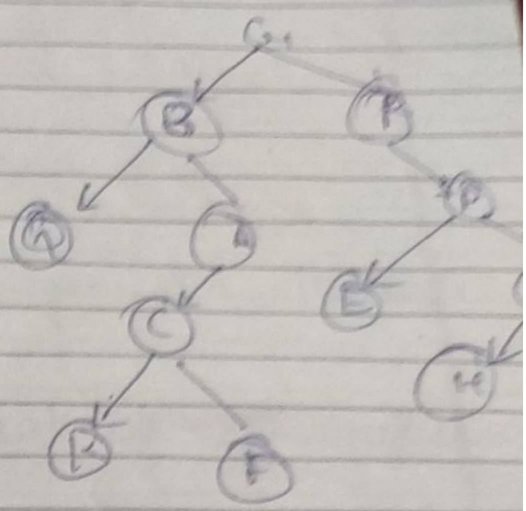
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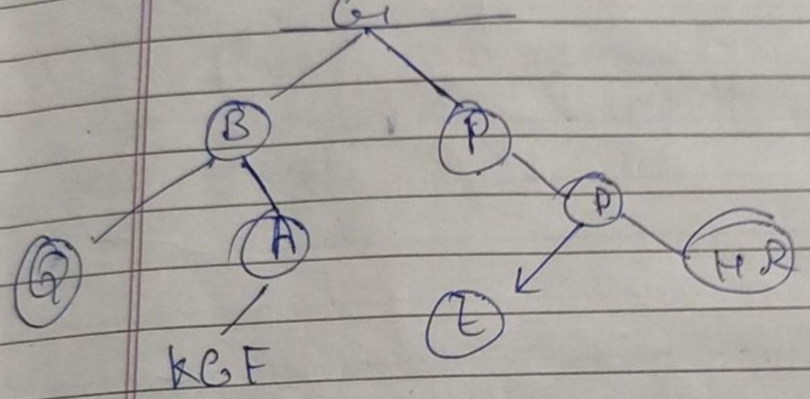
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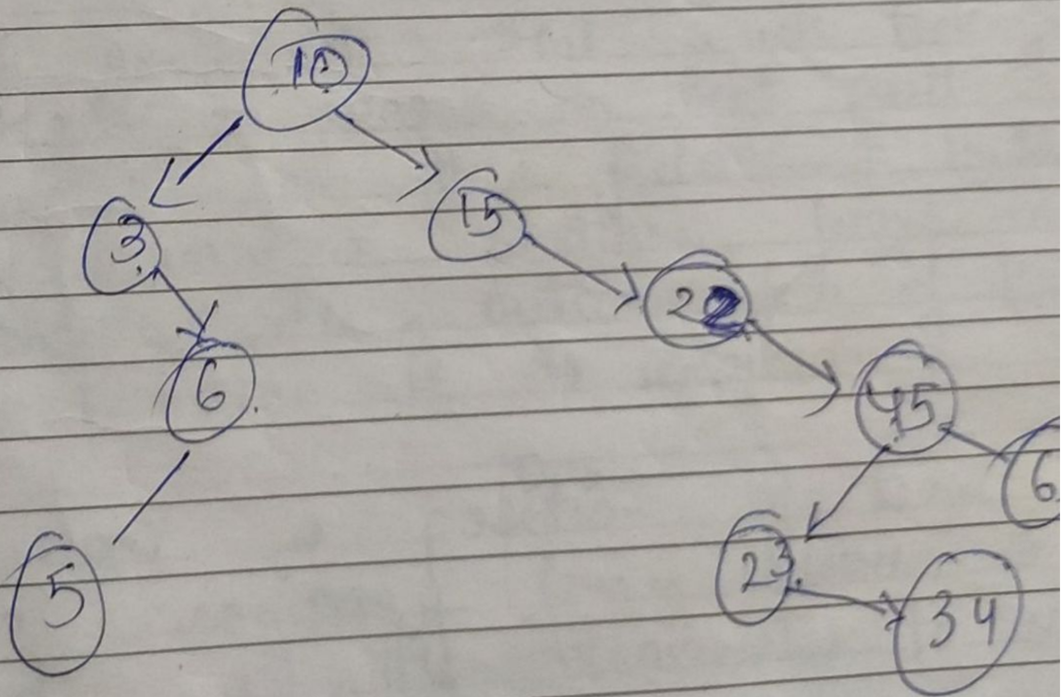
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