Satya Sai Siva Rama krishna } 2019 → amazon SDE 3 months
≈3 years Teaching, ≈ 550 Scaler } ↳ 3+ OSA

FAQ's:

- → Notes will be shared
- → 2hr – 2hr: 30min session, 10 min break
- → No pre-requisits, no jargons only fun
- → Not audible / Plase reload

Todays Content:

- → Intro
- → Data Structure & Algorithm
- → Save your crush from bomb blasts
- → Degree of separation ? How to calulate it

Shopping:
- amazon
- flipkart
- myntra
- ⋮

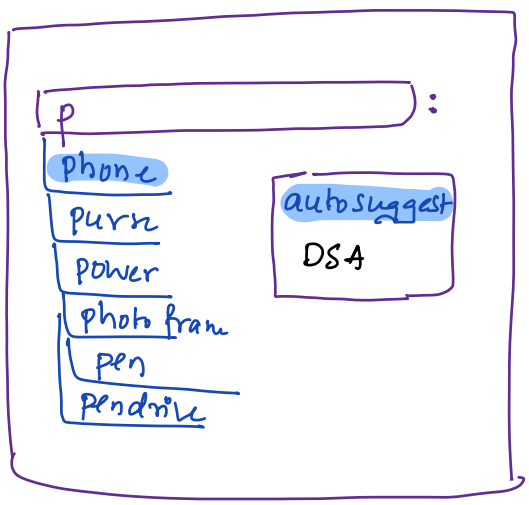
Food Grocery:
- Swiggy
- tomato
- blinkit
- ⋮

Traveling
- Ola
- Uber
- rapido
- ⋮

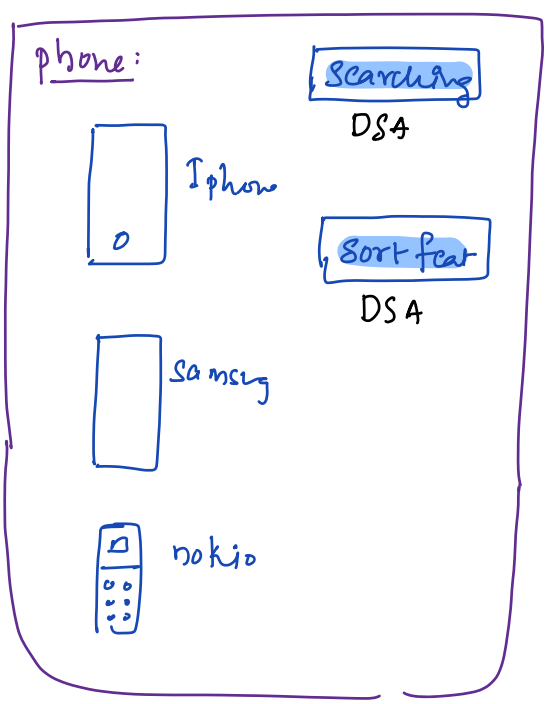
Bookings
- make my trip
- book my show
- IRCTC

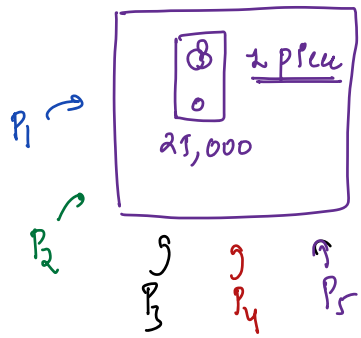
money:
- Gpay
- phone pe

amazon:



They are able to create website, which can handle, very high Scalable systems: HLD high level design



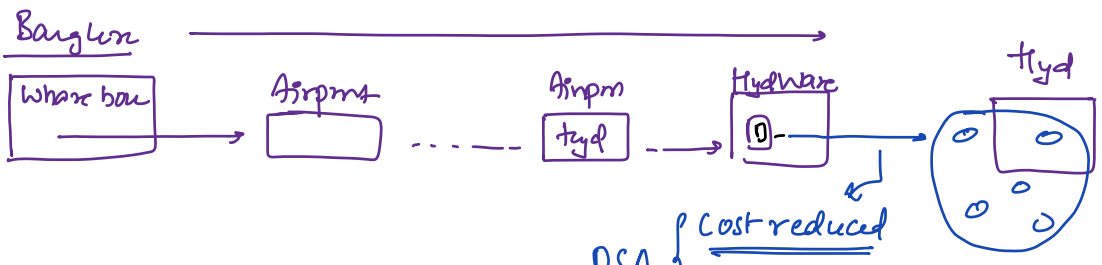


Single resource

multiple are trying to acc at same time

Issue: Concurrency : LLD + low level design

// We got last piece of Iphone



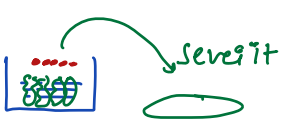
DSA { cost reduced
delivy toughest

DSA: Data Structures & Algorithms

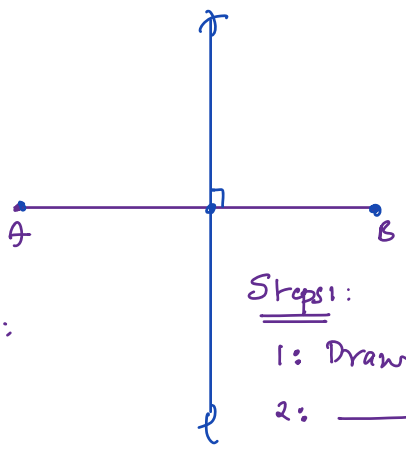
Algorithm: geometry:

Task: Cook Maggie:

3mins:



eat maggie



Steps:

1: Draw arc

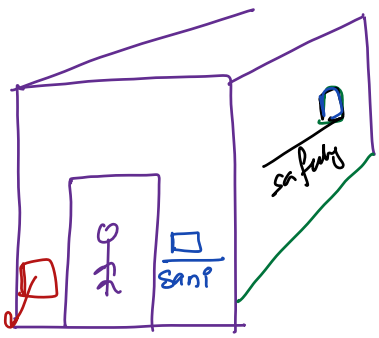
2: _____

3: _____

4: _____

Step by Step procedure to do task is called algorithm

Data Structures :

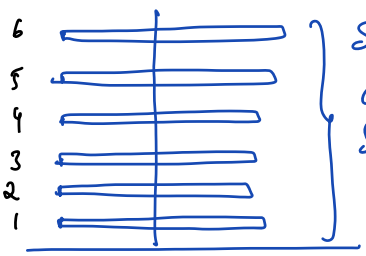


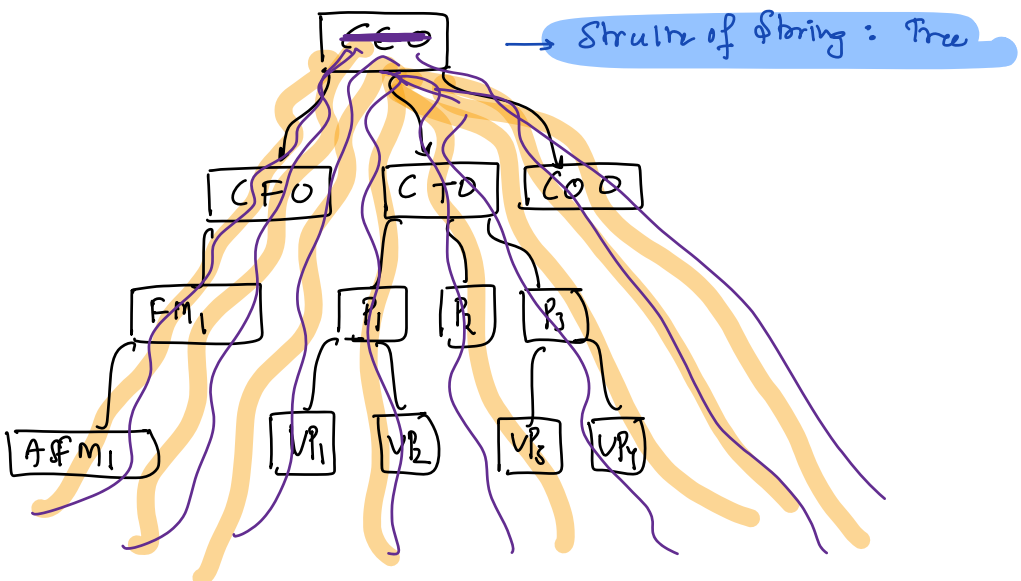
→ computer : data

[How do we structure data, according to user convience for ease of access]

Show walker

data :

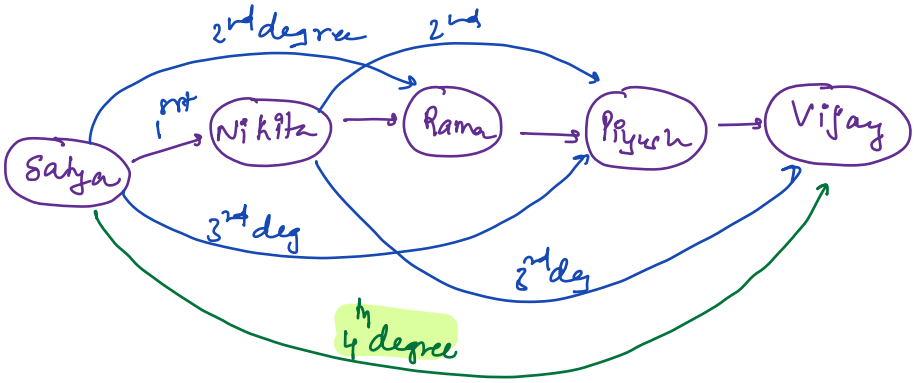




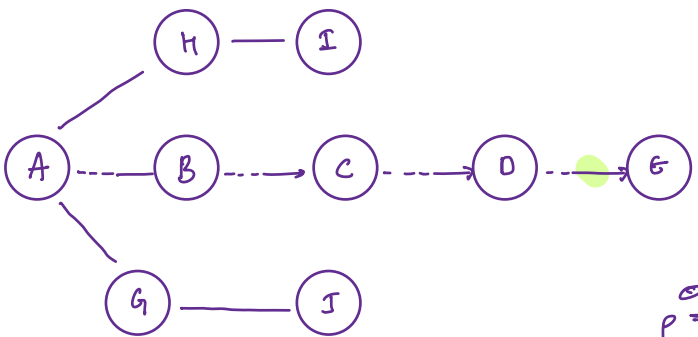
→ Struct of storing : Tree

Q) LinkedIn : Degree of Connection : reload

Ex:



Ex2:



Degree of connection between:

A — B → 1

A — D → 3

H — G → 2

I — C → 4

output:

getCon(A): { H, B, G }

getCon(G): { A, I }

getCon(B): { A, C }

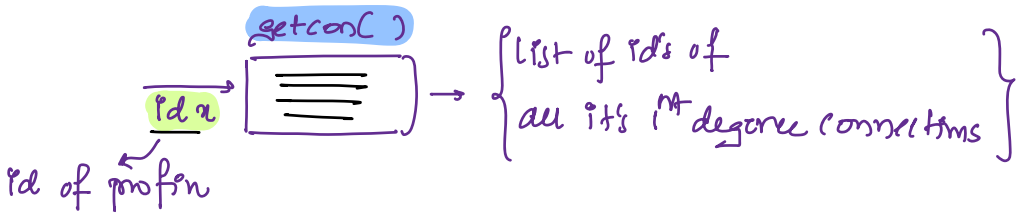
getCon(C): { B, D }

Q: Given 2 LinkedIn profiles

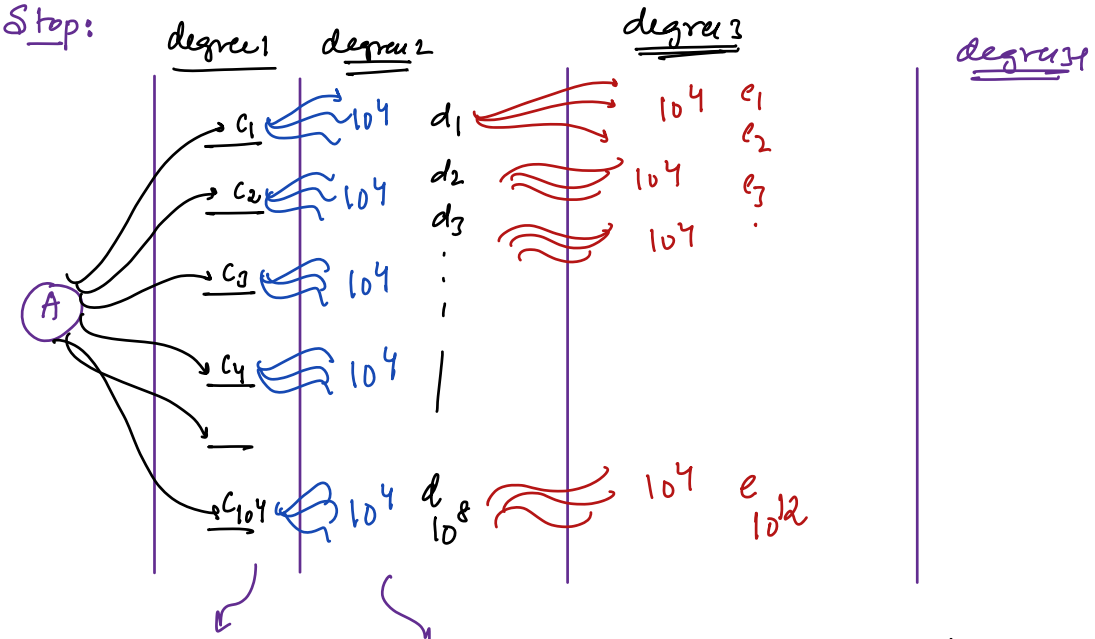
Check if the degree of connection b/w profiles is 1st / 2nd / 3rd / 3+

Note: At max a person can have 10^4 connections

Note1: Every profile will id



Step:



In degree1:

10^4 comparisons

In degree2:

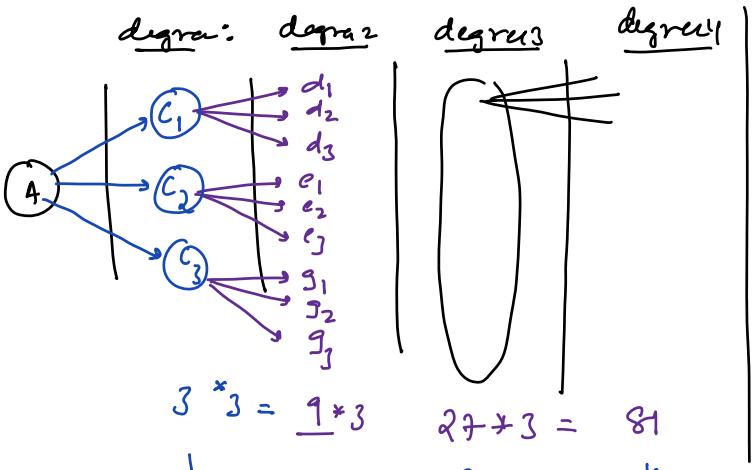
10^8 compar

In degree3

10^{12} compars

Than degree3+

Every person can have 3 connections



$3^1 = 3^2 = 3^3 = 3^4$

$3 * 3 = 9 * 3 \quad 27 * 3 = 81$

Ass: In General, 1 GHz = 10^9 operations/sec → ? classes

2 operations = { 1 Comparsion } 10^9 Comp = 1 sec, 10^8 Com = 0.1

Comparison

In 1 degree Connections =

$10^4 \rightarrow n$, $10^9 \rightarrow 1$ sec

$n * 10^9 = 10^4$

$n = \frac{10^4}{10^9} = 10^{-5}$ sec

In 2 degree Connections =

$10^8 \rightarrow n$, $10^9 \rightarrow 1$ sec

$n * 10^9 = 10^8$

$n = \frac{10^8}{10^9} = 10^{-1} = 0.1$ sec

In 3 degree Connections =

$10^{12} \rightarrow n$, $10^9 \rightarrow 1$ sec

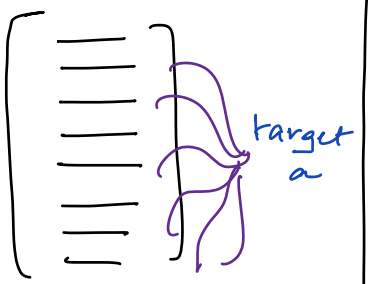
$n * 10^9 = 10^{12}$

→ optimized = 0.1 sec

$n = \frac{10^{12}}{10^9} = 1000$ sec

= 17 mins

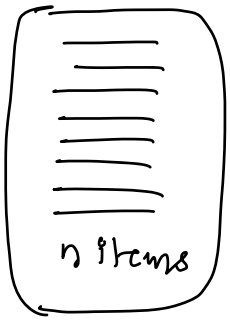
than 4th 3?



n comparisons

2nd magic box:

magic box / Hashset / Dict

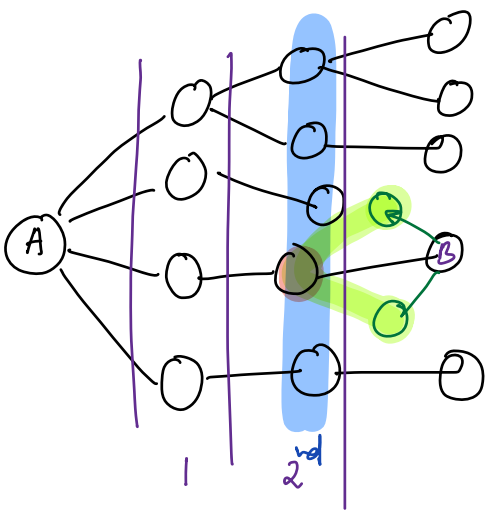


target
a

1 comparism ?

{In future}

degree: 3 → A → B : degree 3



If A → B is degree 3:

Comm node between

2nd degree node of A & 1st degree node of B

(A)

2nd degree list of A

a_1
a_2
a_3
.
.
a_{10^8}

(B)

1st degree of B

b_1
b_2
b_3
.
.
b_{10^4}

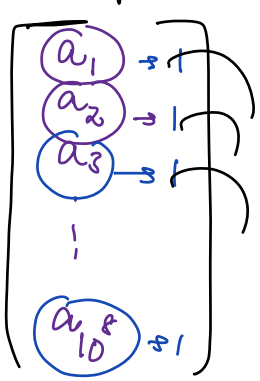
10^{12} Compars = 1000 sec : 17 mins

For every element in A, we are searching to all element in B

10^8 10^4 $= 10^{12}$

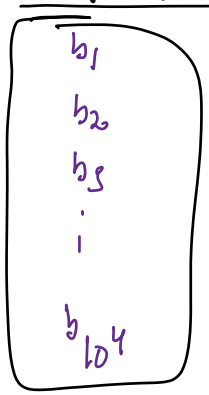
(A)

2nd degree list of A



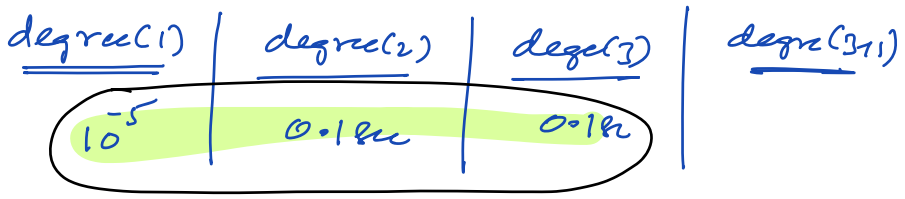
(B)

1st degree of B in magic box, Hashset/ Dict



Total comparsins = 10^8 Compar = 0.1 sec

$[10^8]$



$\Rightarrow$ 0.2sec

A == B : 1 comparison

→ Why left amazon:

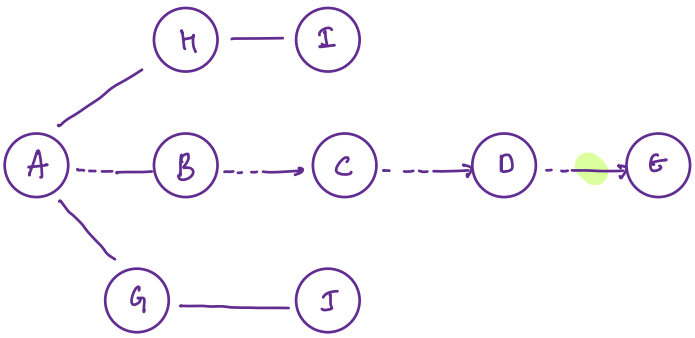
a) Communication ?

↓

Speak English

→ Expression your feeling / openly → +ve / -ve

Issue | piled | leave → it | said - communicated |



Degree of A → D : 3

2nd degree node of A | 1st degree node of D

I
C
C
J
C

Degree of I → B : 3

2nd degree (I): | 1st degree of B

A | A
C

A → E no common → degree 3 ?

2nd degree (A) | 1st degree (E)

I, | D
C
J