16 March 2022

2) Dare to Dream

DARE TO DREAM.

Instructor: Anshman

→ Ho shortcut ← — My Responsibility.

① Hardwork
② Right Direction of Hard Work ← SCALER
③ Consistency ← ME

e.g:- Sehwag — daily 12-15 hrs practice only one sho

e.g:- Handpump.
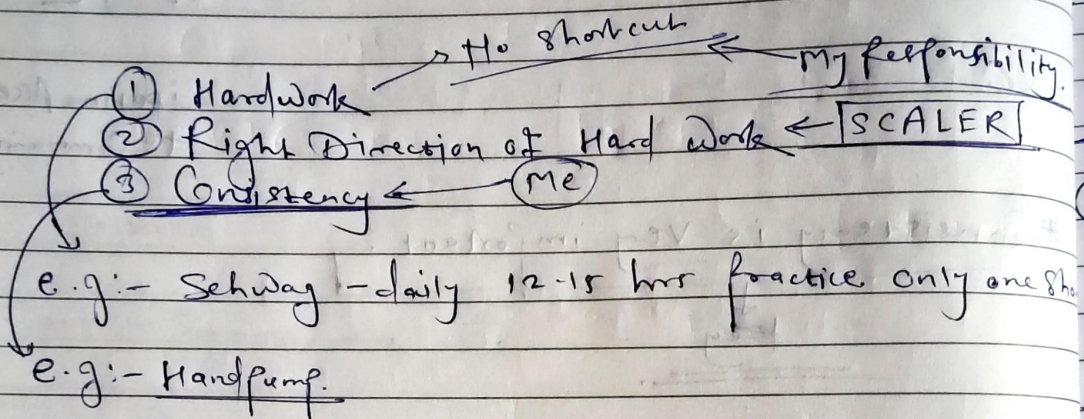
$$(1.01)^{365} = 37.1$$

$$1^{365} = 1.$$

Topics	* Interview	Career

Recommending

SAT → All languages support.

← 1 month →

Begineer | **Intermediate** | **Advance**
Day 0 - 2 month | Day 0 adv

→ **JAVA**

① Programming Constructs
  ① Recursion
  ② Pointers
② Basics of DB, OOPS, CN
③ Basics PS exercise

→ **Python**
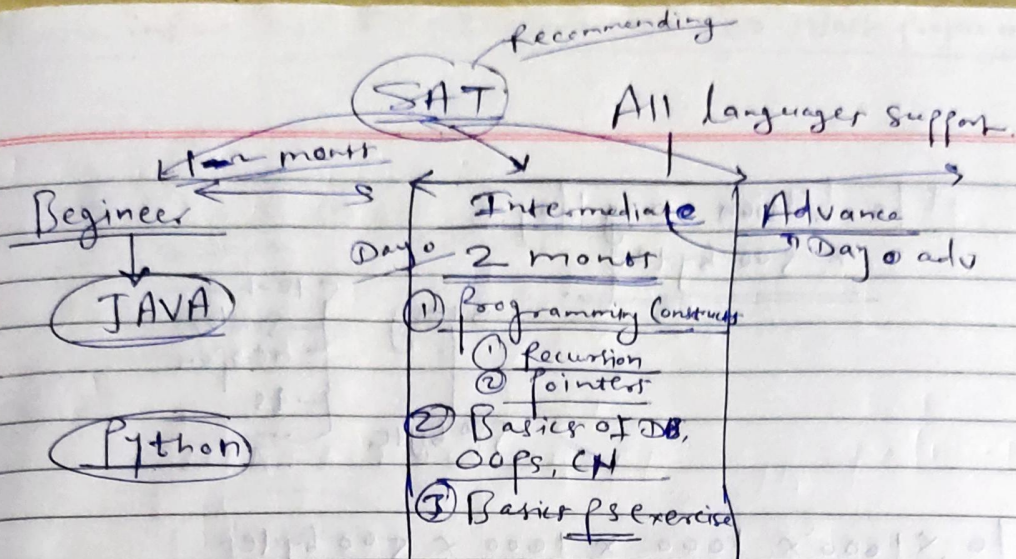
Advanced

| Topics	Interview	Career
① Problem Solving/DSA	→ Super important	① Efficiency as an habbit.
	→ 3-5 Month	② Coding Accuracy & Productivity.
[6-7 weeks]	→ 2-3 weeks	③ 1.1. cases → good vs great. Very Important.
② CS Fundamentals OS, DB, Com Networks	HI	
	(0+)	
DESIGN	Important for interview (2+)	Super important
1] Low level design OOPS based design	Design patterns, SOLID principles Case studies with Feedback	
2] System Design High level Design	2+ Years of Exp 6+ case studies	→ SDE 2+ ↓ System Design

10 billion msg/day = 500 byte [tech set]

- In Frontend Interviews, DSA is also important.
- Coding Accuracy is Important.
- The 1st version of Fb is written in php.
- Company care about efficient code.
- Increase the productivity.
- Note → Just know one tech stack & in depth →******
- Every single Company has their own tech stack [Google → own PB, Goldensack → own version, many more, java]
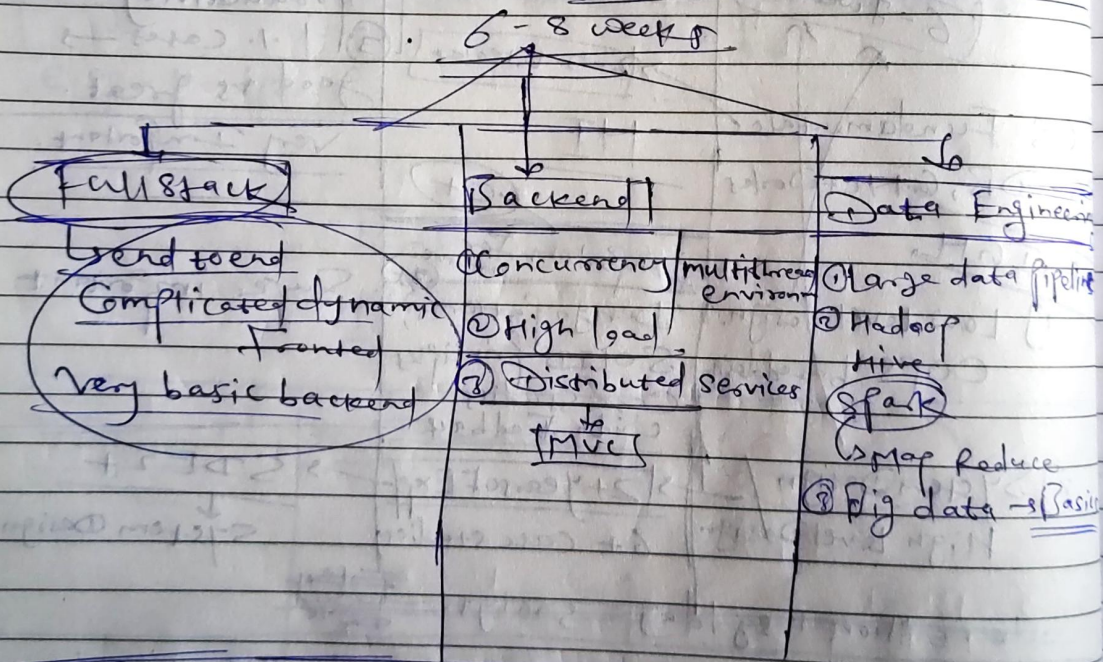
10 billion msg/day
* 500 bytes

msg → { text
        sender
        recipex
        ts
        $\frac{}{3}$ }
500 byte
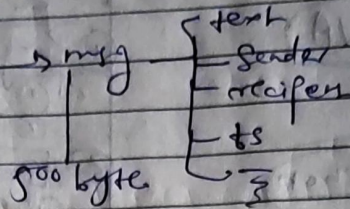
$10 \times 1000 \times 1000 \times 1000 \times 500$ bytes
           ↓   ↓   ↓
          GB   MB   kB

$= 10 * 1GB * 500 = \boxed{5 TB}$ 5 new laptops per day

Retrieving

6-8 weeks

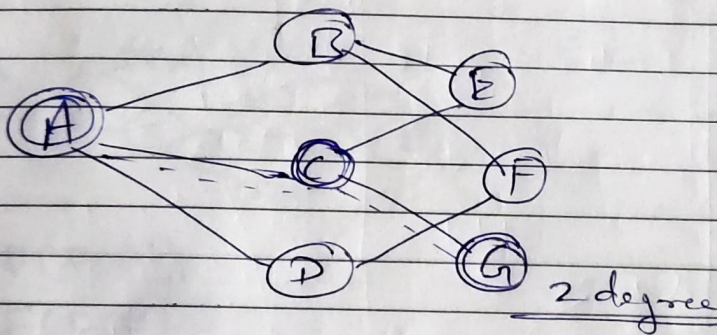| Full Stack	Backend	Data Engineering
Front to end	① Concurrency / multithread environ	① Large data pipeline
Complicated dynamic fronted	② High load	② Hadoop Hive
Very basic backend	③ Distributed services MVC	Spark
		↳ Map Reduce
		③ Big data → Basics

Electives :— ① Advanced DSA
            ② Advanced HLD
            ③ Product Management for Software Engineering.
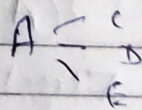
DSA
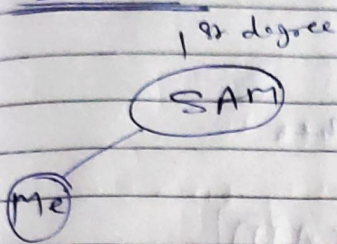
1st degree   Linkdin

(SAM)   [SAM 15...?]

(Me)

(Me) ——— (fralcash)   2nd degree

           (SAM)

(A) (B) (C) (D) (E) (F) (G)

2 degree

1, 2, 3, 4, 5 *

degree-of-separation (A, B) {

     $A \leq \begin{matrix} C \\ D \\ E \end{matrix}$

       $\dfrac{friends(A)}{[C, D, E]}$

}
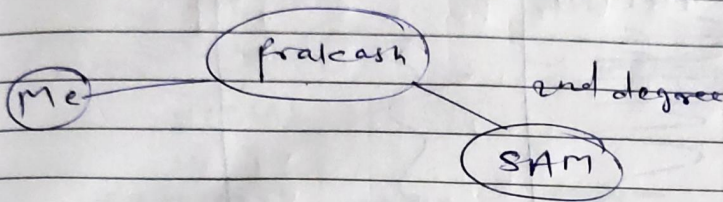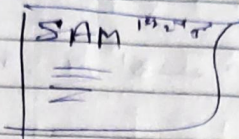
2 billion users

$2 * 10^9$ users/nodes

       friends(friends(A))

       [... — →]

$2 * 10^9 * 1000$ edges = 2 trillion edges.

$\left\{ \begin{matrix} i → 1 \ to \ 10^8: \\ cnr++ \end{matrix} \right\}$ ← 1 second

(A)   (B)

degree-of-sep → 1, 2, 3, 4, 4+

F(A)	F(F(A))	F(F(F(A)))	
(A) branching to circles			
1000	1 million	1 billion	

(A) — (X)
(A) — (Y) — (Z)

(A) ⇝ → ← ⇝ (B)

F(me)   F(f(me))   F(f(f(me)))

(Me) , (Sid) —2— (Rahul) —3— (Ganesh)
                                    ↓
                                   (3)
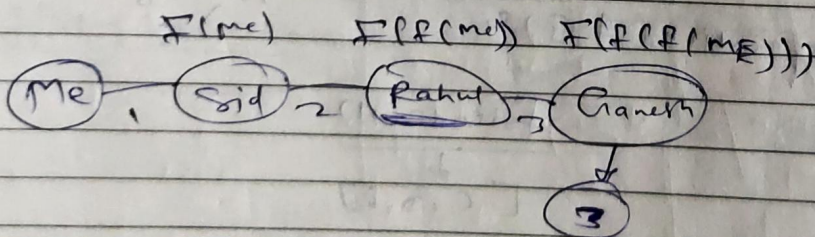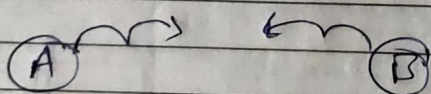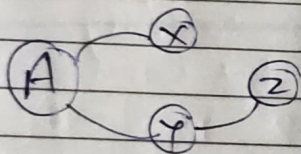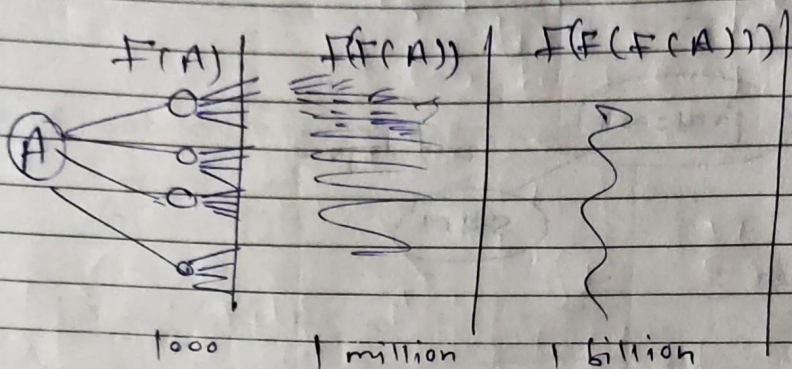
degree-of-separation
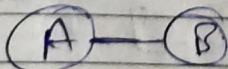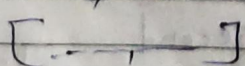
(A) — (B)   if B in friends(A):
                      return 1.

friends(A)
     ↓
  [..... ,]

1			
2			
3			
4			
4+			

(Meet in the Middle Approach)

② (A)—(X)—(B)

$[:\_\_x\_\_] [\_\_x\_\_]$
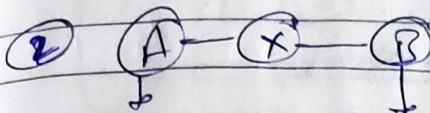
else

~~if B return f~~

if intersect(F(A), F(B)):
  return 2

③
    F(A) F(B)

(A)→(X)→(Y)→(B)
    F(F(A))
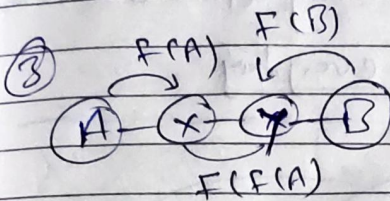
else

if intersect(F(F(A)), F(B)):
  return 3

F(F(A)), F(B)

$[\_\_Y\_\_] [\_\_Y\_\_]$

④
    F(A) F(F(B)) F(B)

(A)→(X)—(Y)—(Z)—(B)
    F(F(A))
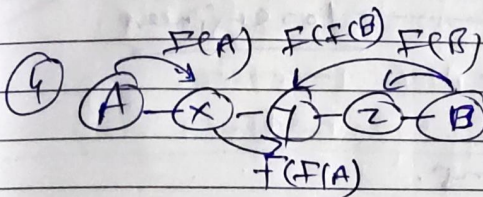
else

if intersect(F(F(A)), F(F(B)):
  return 4

$\begin{bmatrix} F(F(A)) \\ F(F(B)) \end{bmatrix}$

else

return 4+

    1 million   1 million

intersect (list1, list2) → true / False

[binary search]
① [Hashmap, Hashtable]

For x in list1:

① binary Search after sorting l2
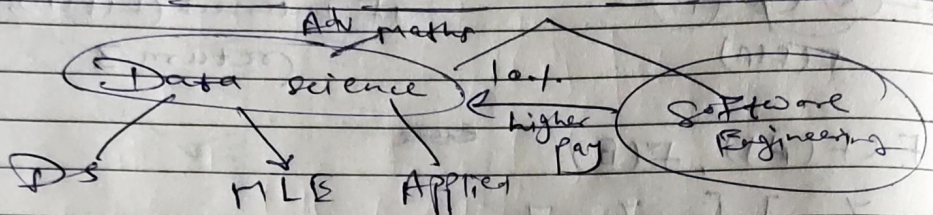② Index l2, then search
    → HashMap
    → Hash Set

— Approach

<u>3 live classes a week.</u>

↳ 7.5 hours a week

↳ 7.5* hours a practice

15 hours weekly time Committe.

↓ 1-2 hours everydays

Adv maths

Data science ─ 10%.
higher
pay

Software
Engineering

DS

MLE   Applied

5 Data
Science ←   ── 100 engineers

- At least 8 design patterns.