

## Structure of Java:

1) Import all libraries (optional)

2) main method

(Access specifier)

3) class

    |  
3) main (overide)

    |  
    | methods (overide)

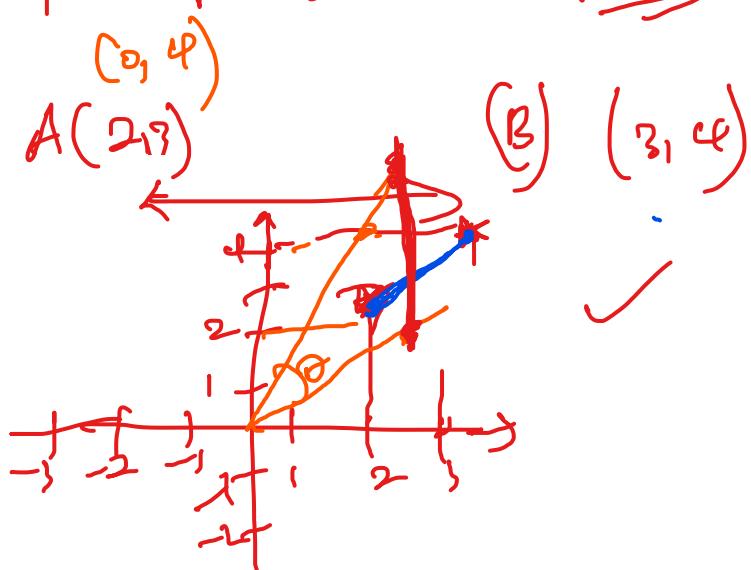
import java.util.\*;

p → class fields

{  
public static void main (String args)}

Mon → 05/05/2021

To find angle b/w two points:



stance b/w two point

assume its  $\theta$  -

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

## Trigonometry

Direct

vs

Inverse

$$\sin \theta = \frac{opp}{hyp}$$

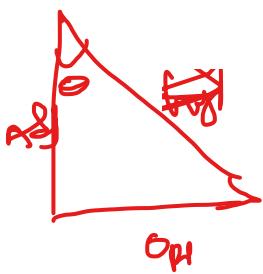
$$\underline{\sin^{-1}}$$

$$\cos \theta$$

$$\underline{\cos^{-1}}$$

$$\tan \theta$$

$$\underline{\tan^{-1}} \quad (\text{Cotan})$$



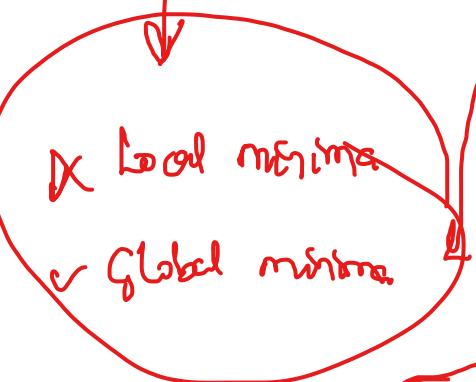
$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

$$\cot \theta = \frac{\text{adj}}{\text{opp}}$$

GD vs SGD (To optimize our model)

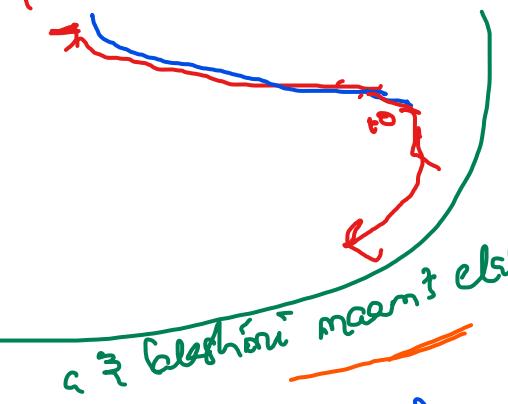


$Q_1 \rightarrow Q_2 \rightarrow Q_3 \rightarrow Q_4 \rightarrow Q_5 \rightarrow Q_6 \rightarrow Q_7 \rightarrow \dots$

$Q_1 - Q_2 \rightarrow Q_3 \rightarrow Q_4 \rightarrow Q_5 \rightarrow Q_6 \rightarrow Q_7$

$Q_8 \rightarrow Q_9$  [to epochs]  $\rightarrow Q_{10} \rightarrow \dots$   $\rightarrow Q_{100}$

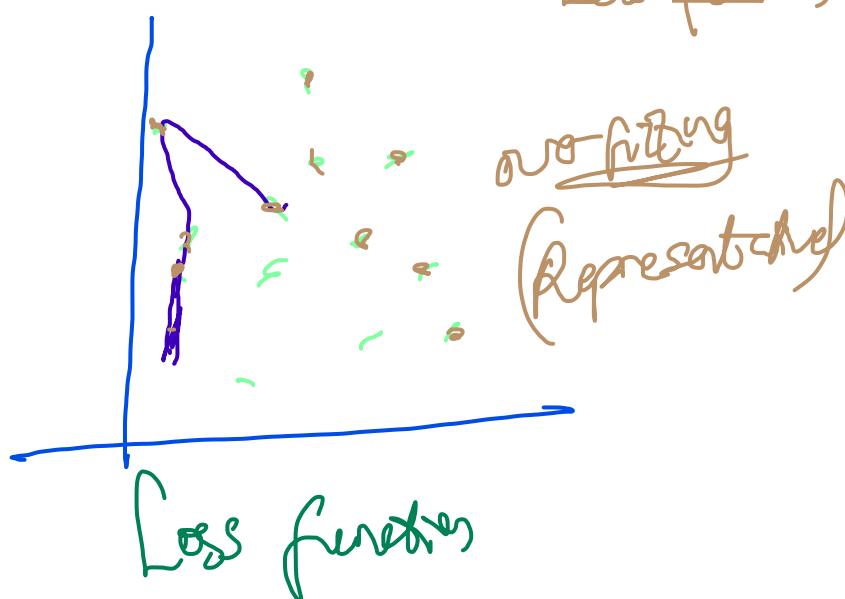
Exploding vs Vanishing gradient problem  
gradients grows beyond goes below



Kanshi's Class Contd  $\rightarrow T \rightarrow 25/05/2021$  (Friday)



- 1) Overfitting
- 2) Underfitting
- 3) est fit ✓



## Overfitting vs

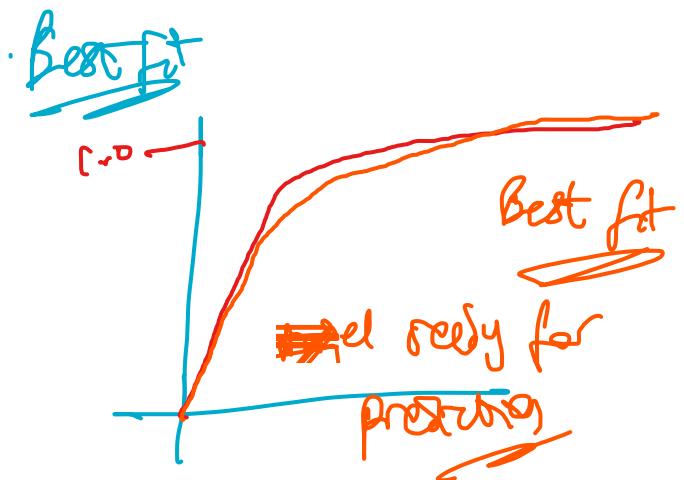
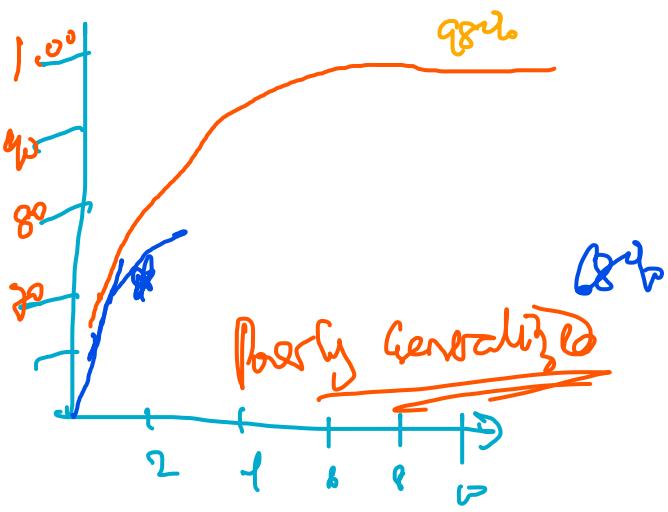
Training: 98%

Testing: 68%

## Underfitting

Training: 68%

Testing: 98%



Correlation Coefficients  
(Prediction → regression) (Same here)

Regression vs Classification } Supervised

Continuous Data Range  
Age, price (20-40k)  
Age predicted 18-1.2cr.  
Discrete data  
(spam is not discrete  
M vs F  
cat, dog, etc)

$$f(x) = \begin{cases} x+1; & 2 \leq x < 37 \\ x^2, & 10 \leq x \leq 15 \\ 0 & \text{else} \end{cases}$$

$$y = 1.2x + 1$$

$$\boxed{y = mx+b} \quad \text{for eqn I}$$

$$a = mb + k$$

$$\boxed{d = 1.2l + 1} \quad - \quad \text{eqn II}$$

$$\boxed{d = cl + i} \quad - \quad \text{--- (eqn III)}$$

where  $m$  = slope / gradient

$b$  =  $c$

$i$  = intercept

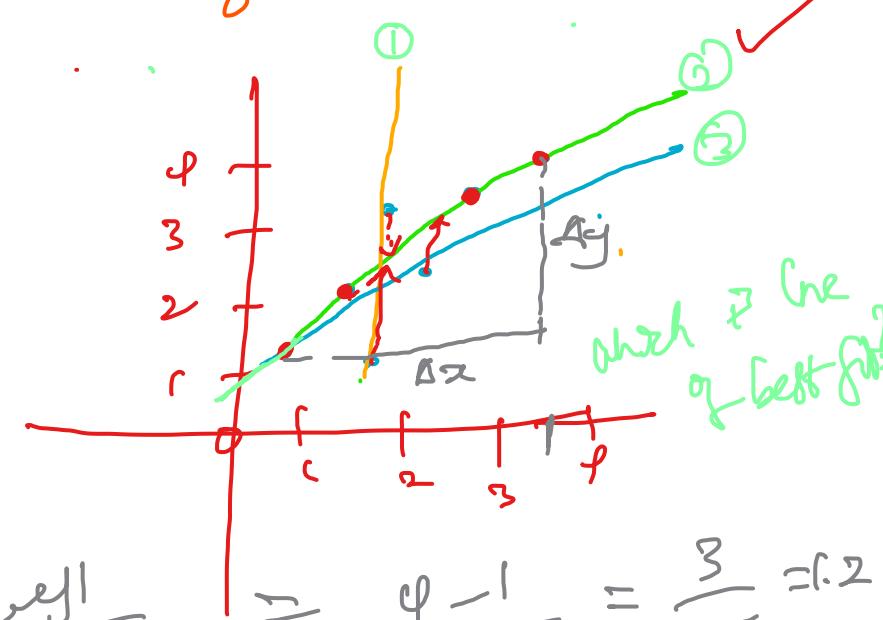
~~msc~~ //

Slope:  $c$

$i = 1$

$$c = \frac{\Delta y}{\Delta x} \quad \text{slope}$$

~~y = dependent~~



$$= \frac{4-1}{3-5-1} = \frac{3}{2-5} = -0.2$$

$$\frac{3}{5} = 0.6$$

$$\frac{3+2}{5} = \frac{5}{5} = 1.0$$

# Newton's Law:

1st → Law of Inertia

2nd → Law of Force  $F = ma$

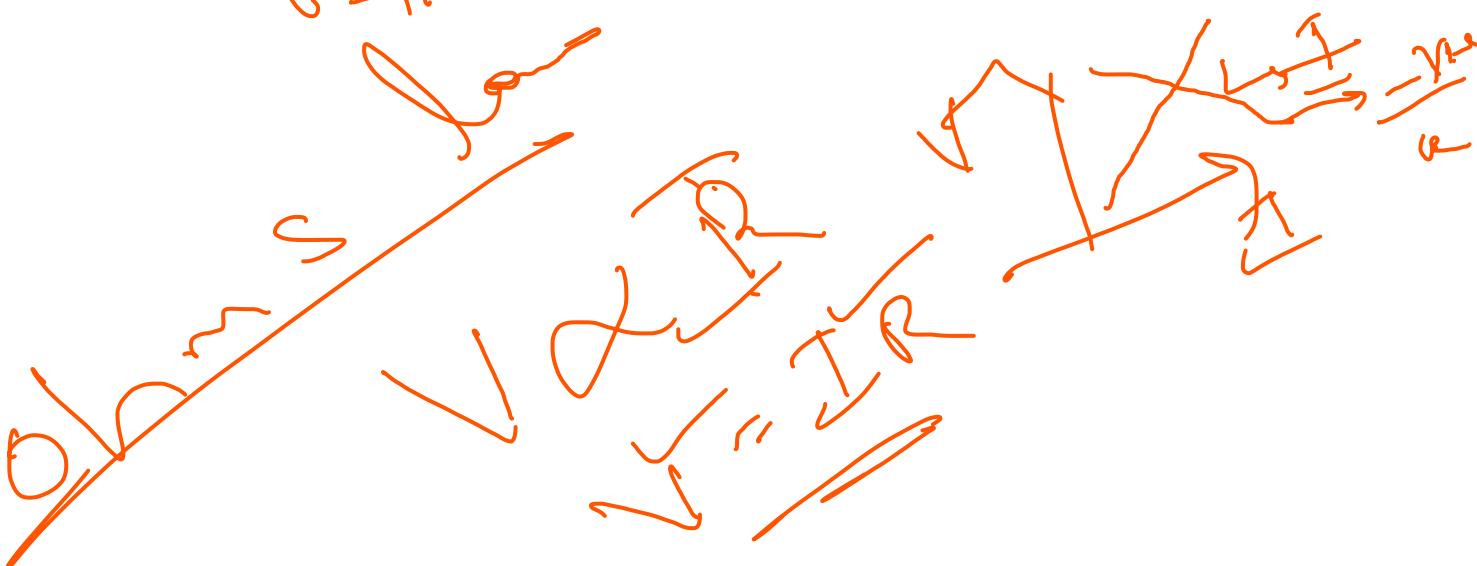
3rd → Action vs Reaction  $\equiv \cancel{\text{?}}$

doct

$$\frac{m s^2 \text{ or } m/s^2}{\cancel{m}} \xrightarrow{\cancel{F}} \frac{v - u}{t} \xrightarrow{\text{derived quantity}} \frac{m}{s} : s \rightarrow \cancel{m/s}$$

where  $u = \text{initial}$   
 $v = \text{final}$   
 $t = \text{time}$

$$\Rightarrow \frac{m}{s} \times \frac{1}{s} = \frac{m}{s^2}$$



$$256 \Rightarrow \text{expanded form}$$

$\boxed{3 \sqrt[3]{256} = 3}$

$$16 \times 16$$

$\downarrow$

$$4^2 \times 4^2 \Rightarrow 2^{4+4} = 2^{8/3} = 3.$$

$256^{\frac{1}{3}} \Rightarrow 256^{\frac{1}{3}}$

$$\begin{array}{r} 3 \\ | \\ 256 \\ -27 \\ \hline 8 \\ -8 \\ \hline 0 \end{array}$$

DWAF to compute

$$\begin{array}{r} 3 \\ | \\ 729 \\ -243 \\ \hline 81 \\ -81 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ | \\ 243 \\ -243 \\ \hline 0 \end{array}$$

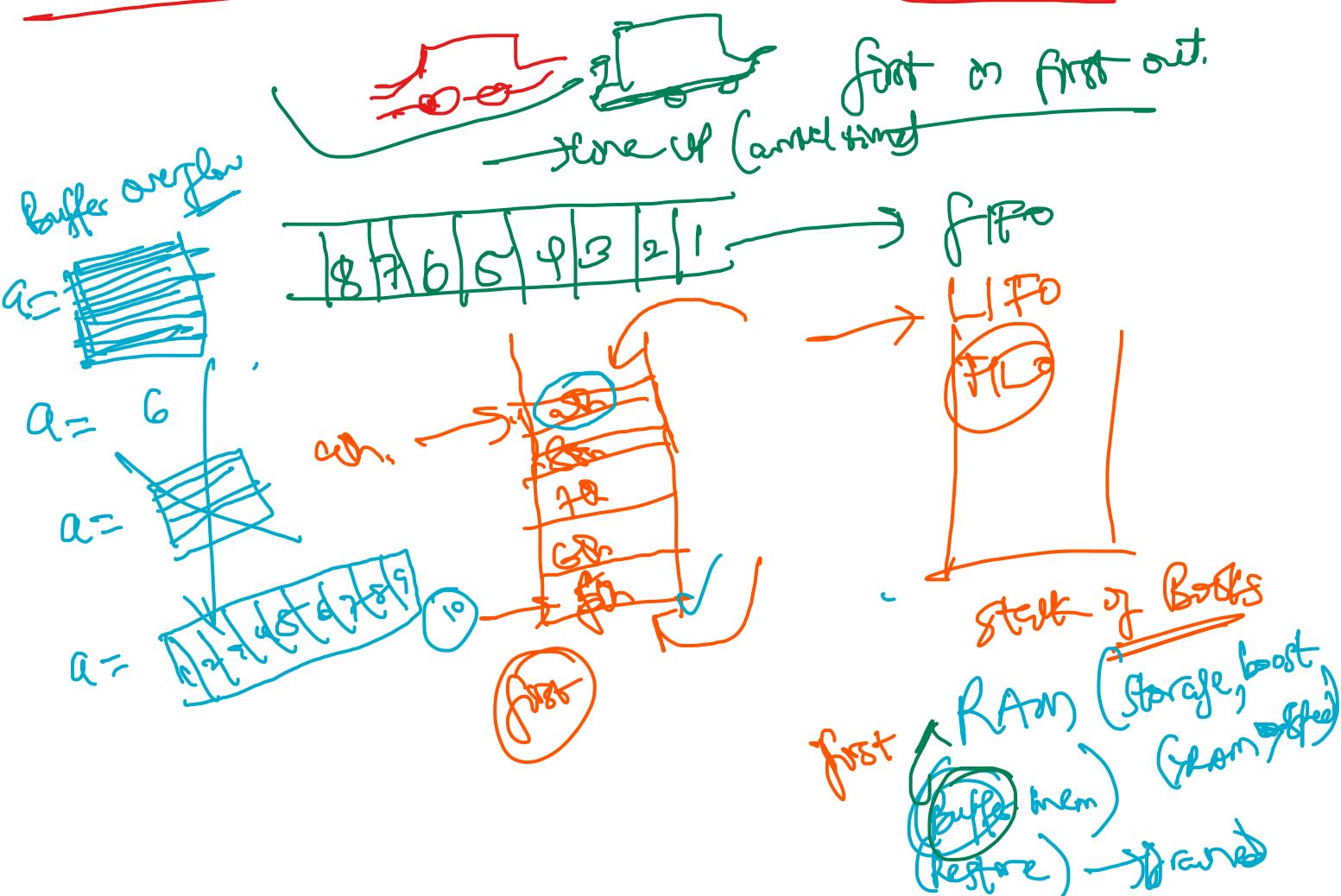
$$\begin{array}{r} 3 \\ | \\ 81 \\ -81 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ | \\ 27 \\ -27 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ | \\ 9 \\ -9 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ | \\ 3 \\ -3 \\ \hline 0 \end{array}$$

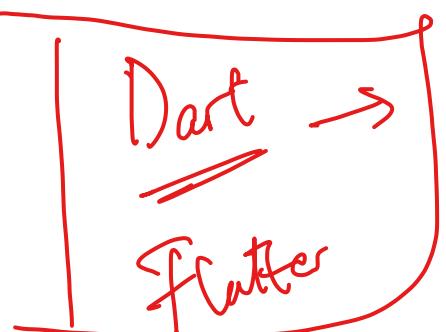
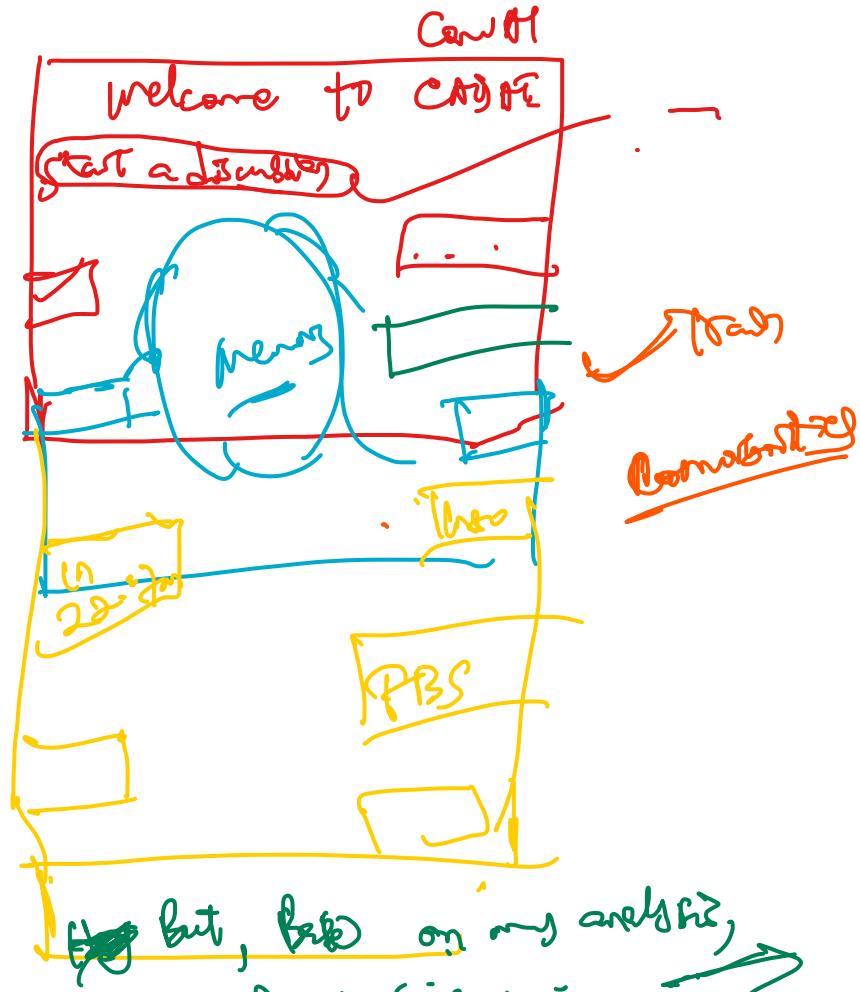
Stack vs Queue



Web UI



at least 500 hrs  
Goal  
rules, (according rules)

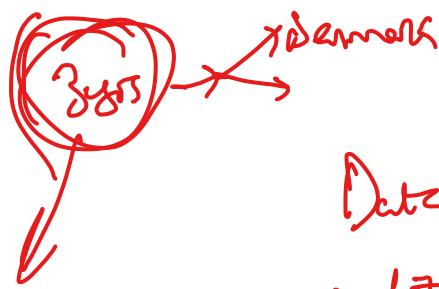


SL → Developer-

ML Engineer / Data Scientist

Data Engineer.

Software Developer:



Technology Stack:

Software Engineers:

B.Tech → 3 yrs

Data Science  
Tech (3 yrs) architec  
MSIT Mech → 2013 → 8 yrs & Exp  
25 LPA

Post graduate → Industry

B.Tech → 2 yrs

25K. ↗ PBD (Teachers)

MERN  
MEAN

Full stack Developers

MongoDB, Express, Angular.js

MERN vs MEAN

Dot Net → Stack → full.

( )

Front End  
Back End

CodeAcademy

Developer:

mobile  
web

DevOps OR

Firebase vs Heroku

```

public Actor read manc ) {
    Actor mt q=100;
    //method
}

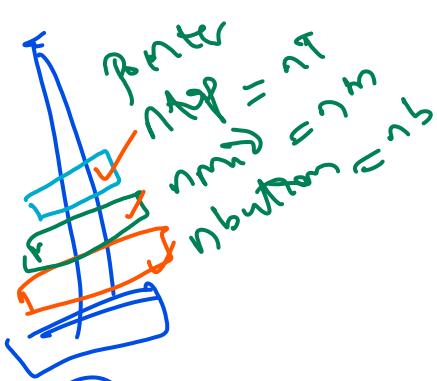
```

Game playing  
using Java

Let's continue; Here, we need some

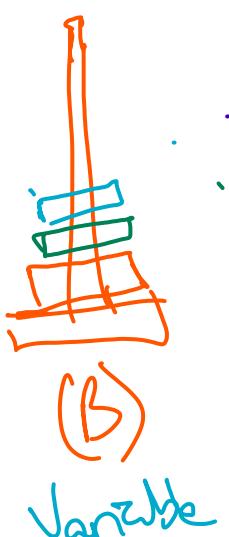
Stuff

Aim / objective

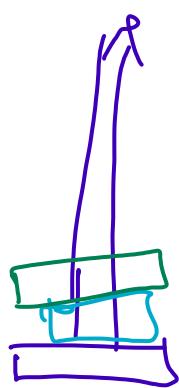


(A)  
Variable

void swap (



(B)  
Variable



(C)  
(Temp var)

void swap (int a, int b, int c)

{  
    c = a;

}

- move a(0) to c
- move a(1) to c
- move a(2) to b
- move c(0) to b
- move c(1) to b

























