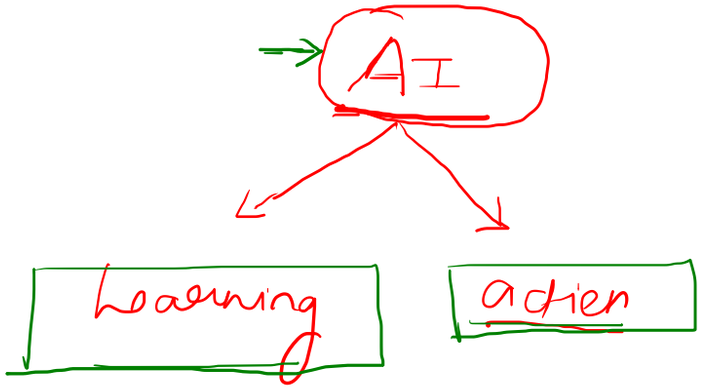
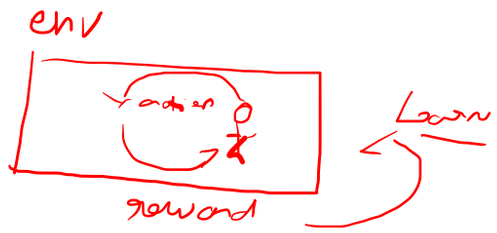
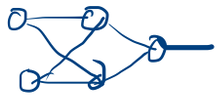




Natural Intelligence

~ 1940

→ Brain → neuron → 

→ neuroscience [Biological brains]

→ Build Intelligence

[man made]

Artificial

[Artificial Intelligence mimics The mechanic of Natural intelligence]

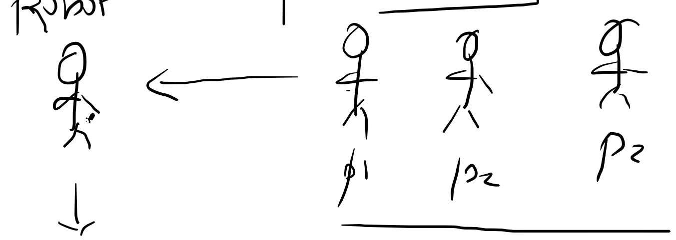
AI

- Learning
  - deductive learning
  - inductive learning
- action

Theorem with rule available part of the system

1. decision making
2. law of physics

Example



[Learning is feedback to the system]

next time see it predict correctly

Top

Theory

└→ Hypothesis

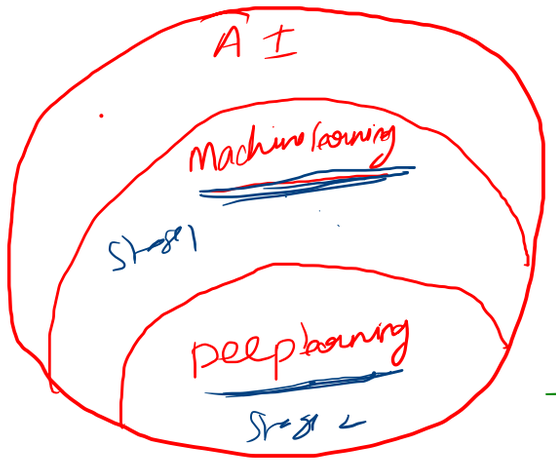
└→ Observation

└→ action

Bottom

Top ↑ Bottom

1. observation →
2. pattern →
3. tentative Hypothesis →
4. Theory



AI → ML → DL

pattern recognition

Statistic model

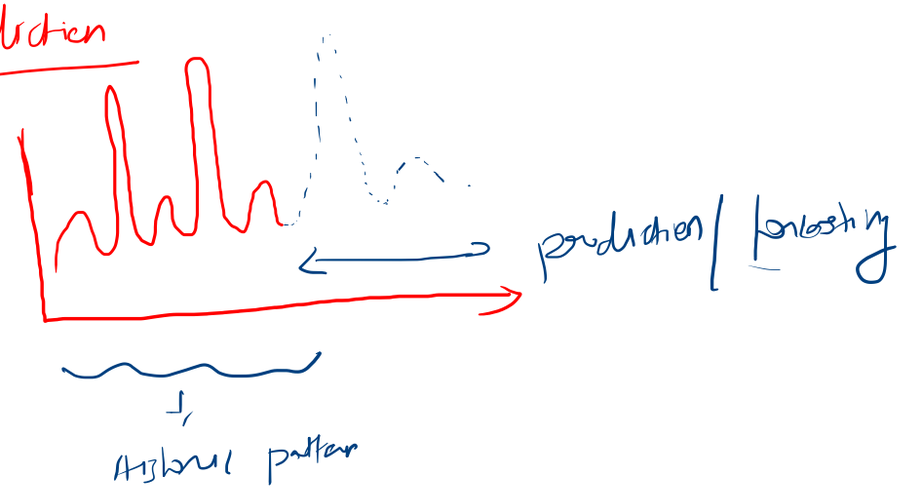
↓

prediction

↑

formula

prediction



(1) 100/GB → Applying formula

prediction

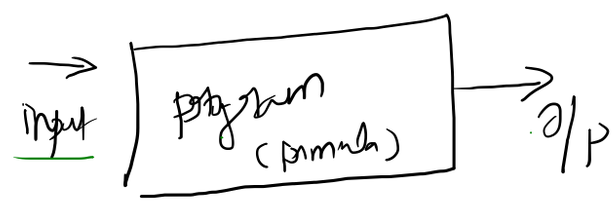
↓

Huge amount of time

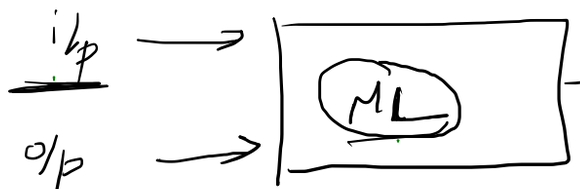
(1) huge runtime

(2) complex pattern

(1)



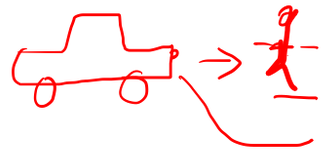
(2) 100/GB



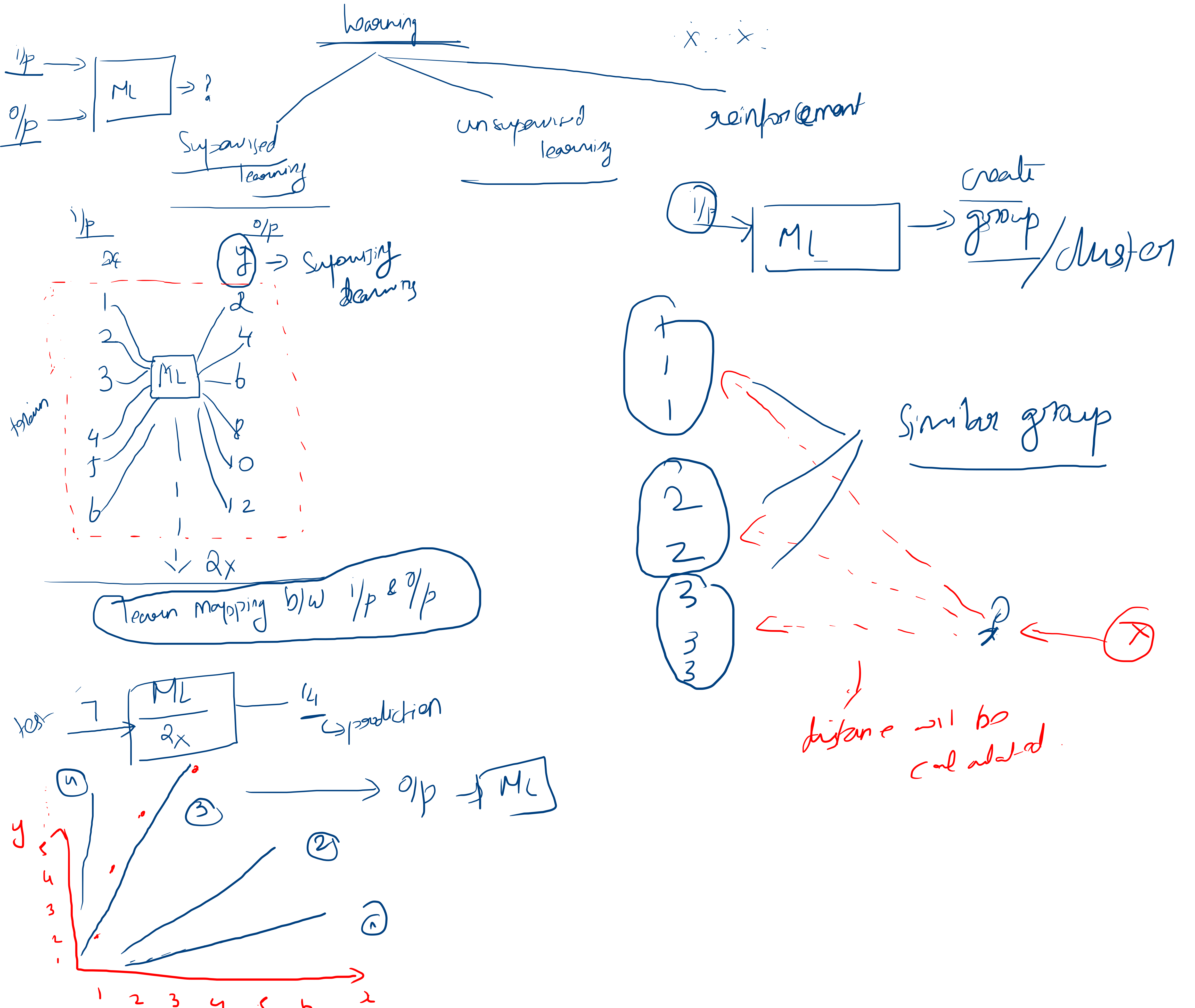
program/ pattern

without any statistic based formula

AI

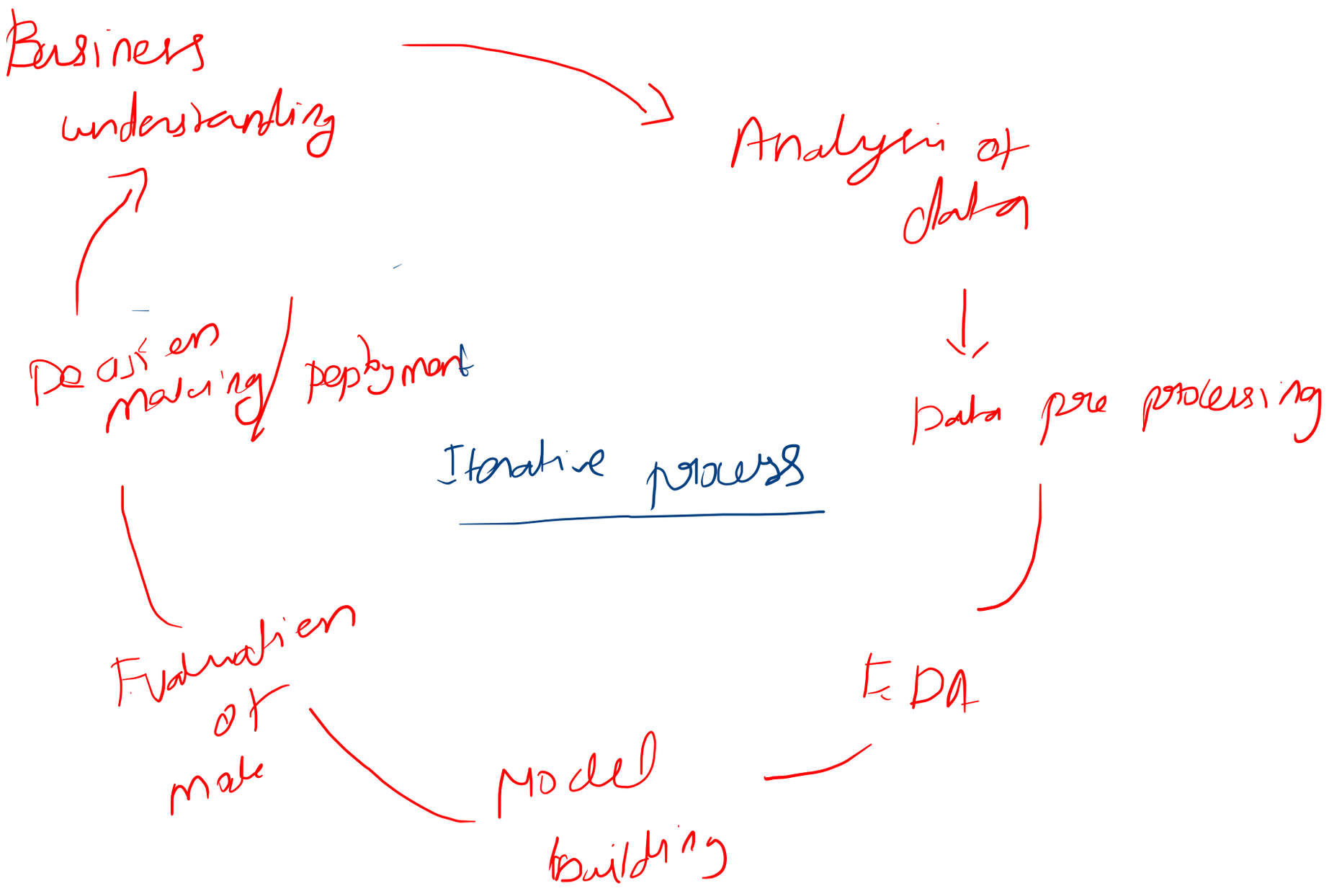
- NLP (Natural language program) → Spam detection, Sentiment Analysis
  - speech → NLG → text to speech, chatbot, Ident classification
  - Decision making
    - Drive car (tesla) → 
  - computer vision.
    - face recogn
    - Object recogn
    - google lens

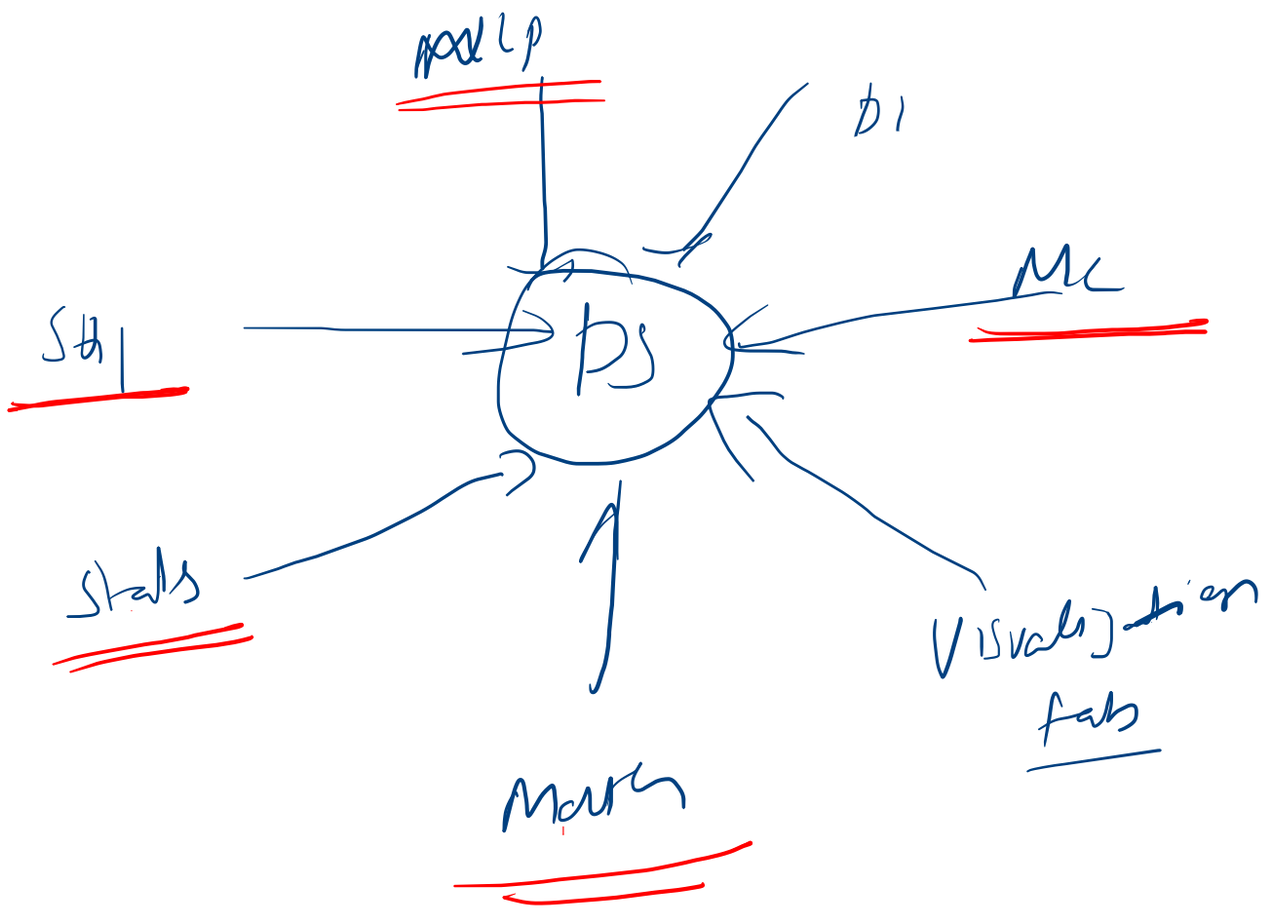
data → machine learning


learning
i/p
o/p
ML
supervised learning
unsupervised learning
reinforcement
i/p
x
o/p
y
supervising learning
train
ML
2x
Learn mapping b/w i/p & o/p
test
7
ML
2x
14
prediction
o/p
ML
y
x
i/p
ML
create
group / cluster
similar group
distance will be calculated

Life cycle [process] Iterative process

Data science life cycle





Programming

↳ python

↳ Linear algebra

↳ calculus

Learning

→ Supervised learning

y → cont → regression → L, P

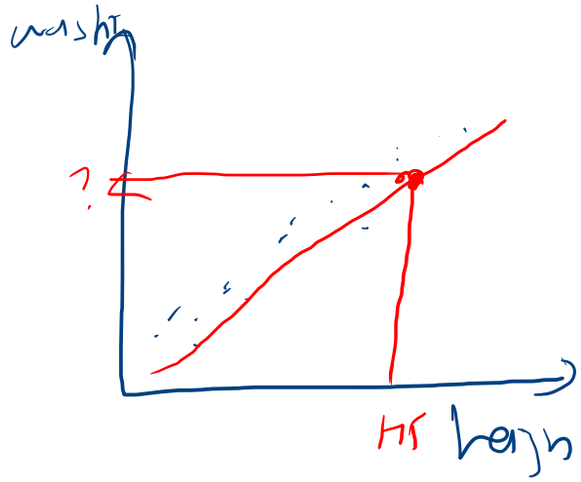
y → cat → classification →

→ unsupervised learning

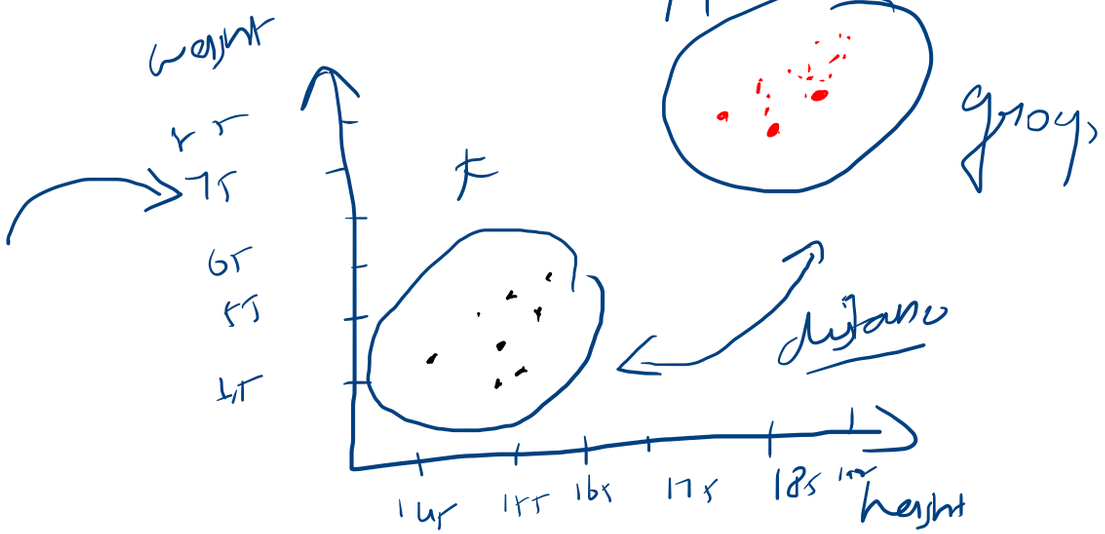
→ clustering

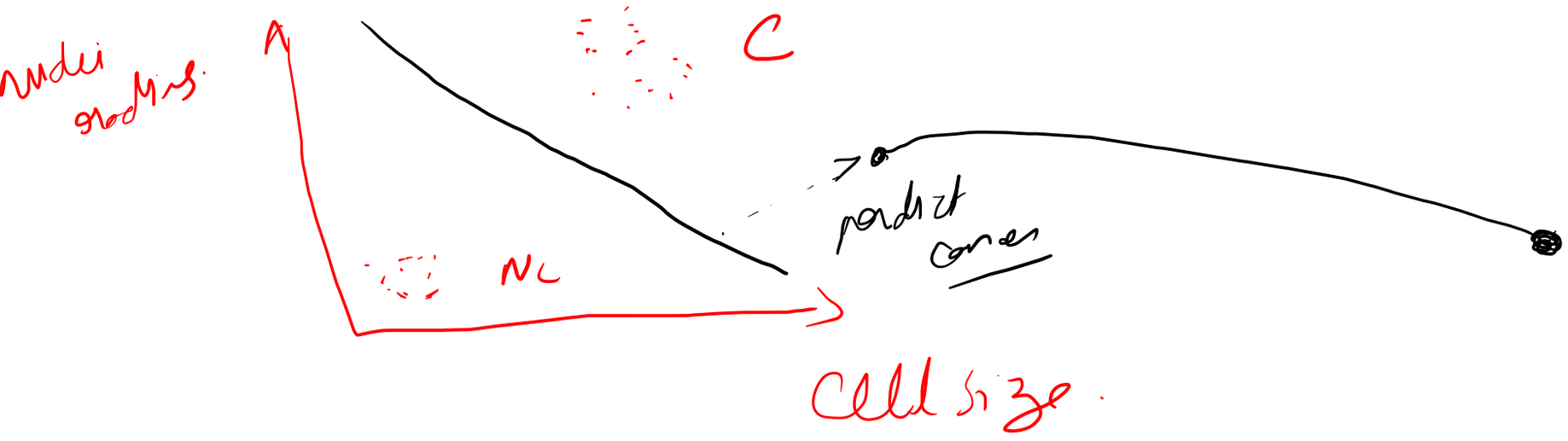
→ cocktail

x height	y weight
180	80
175	75
170	70
160	45
190	85
160	50
175	



Heigh (m)	weight (kg)
180	80
175	75
170	70
160	45
190	85
160	50




C
NC
product
Cell size