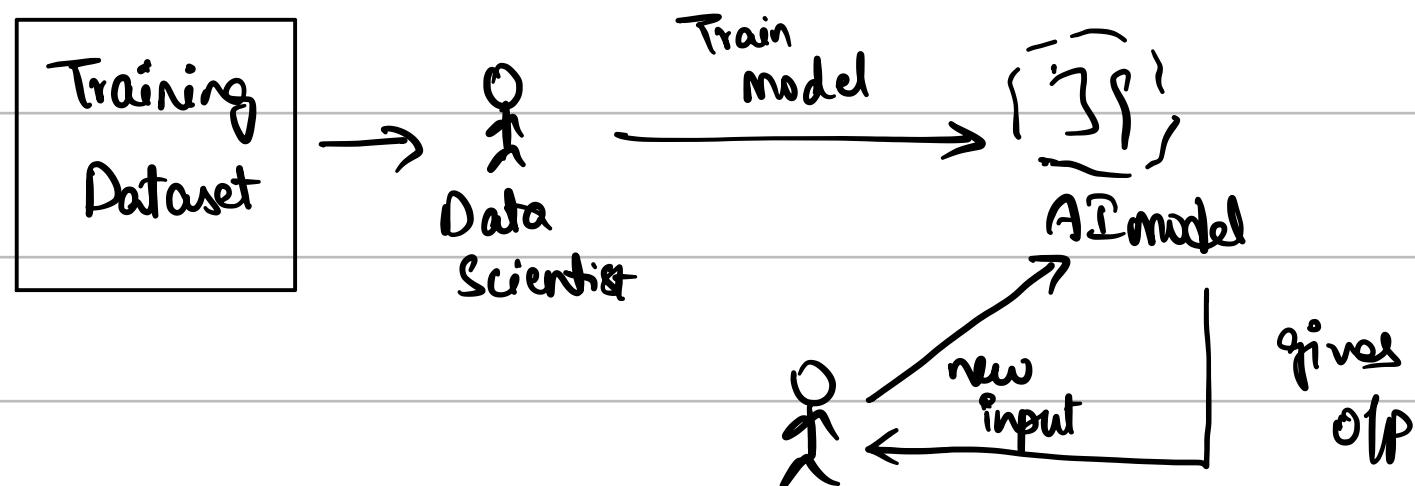


- AI is a field of computer science dedicated to solving problems that we commonly associate with human intelligence.

Ex: Image creation/recognition, Speech recognition, Learning

- How does AI work?



- History of AI:

1950 - Alan Turing proposes turing test, John McCarthy coins "AI"

1970 - MYCIN: rule based system to detect bacteria

1990 - ML and Data Mining

1997 - Deep Blue (AI chess)

2010 - Deep learning Revolution

2020 - AI in everyday life

- AI uses:

↳ Transcribe & Translate Spoken Language

↳ Playing games

↳ Driving cars & flying airplanes

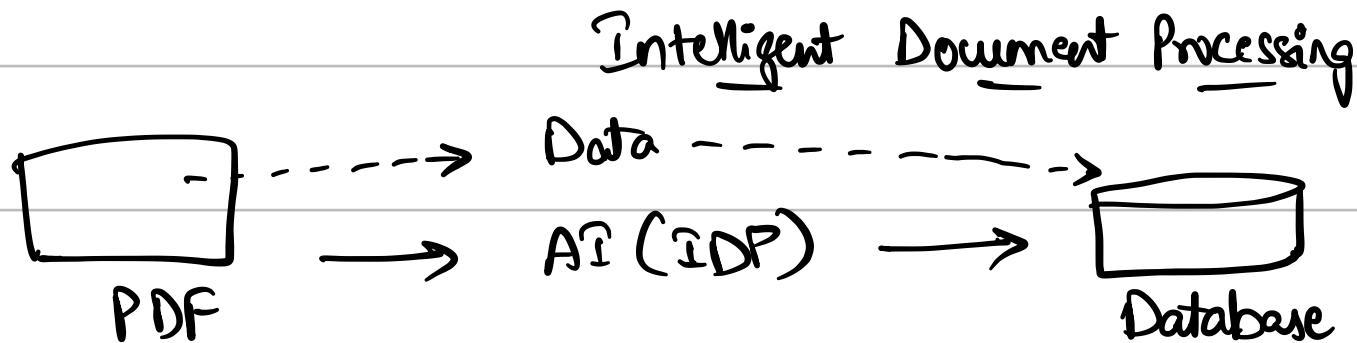
↳ Speech Recognition & Generation

↳ Code Suggestions

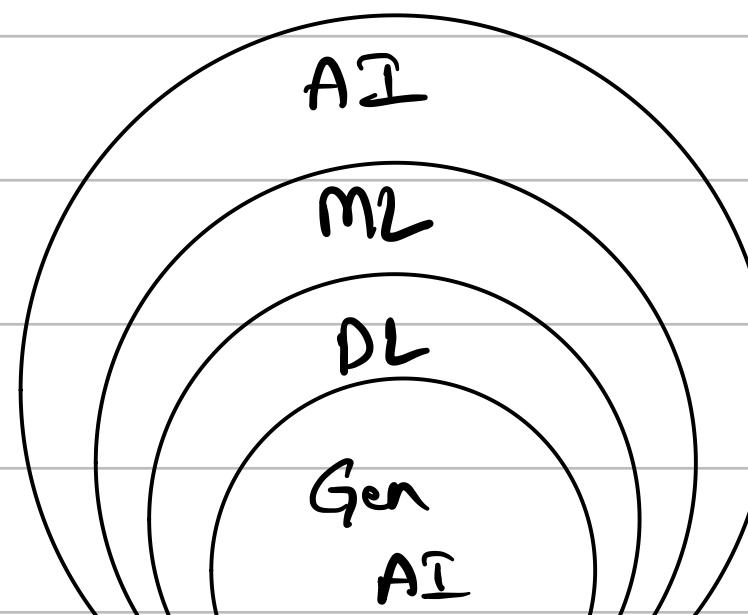
↳ Medical Diagnosis

↳ Automating Business Processes

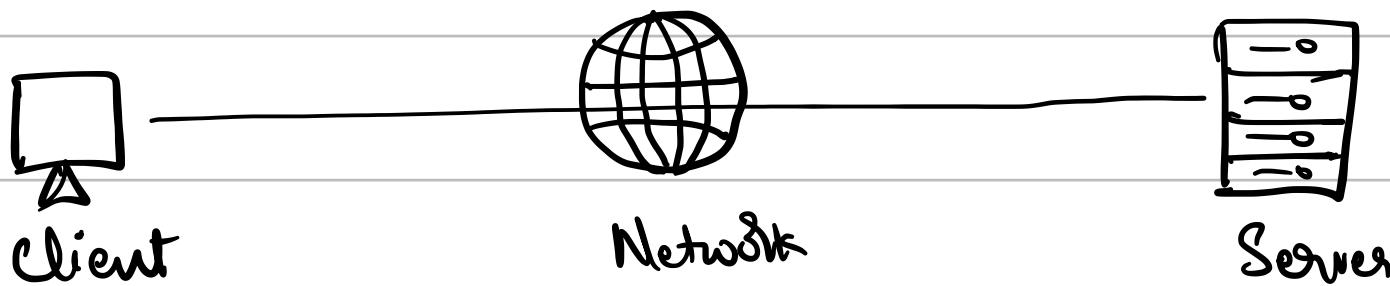
↳ fraud Detection



it Uses: Computer Vision, Deep learning, NLP



- Working of a website:



- Server composed of: CPU + RAM + Storage + Database + Network
(Router, Switch, DNS Server)

- Switch: Takes a data packet & sends that to a correct server.

- Router: forwards data packets between computer networks.

- Problem with maintaining our own datacenter in a traditional way:

1. Pay rent for data center

2. pay for power supply, cooling and maintenance

3. Adding and replacing h/w takes time

4. Scaling is limited

5. Hire people to monitor the infrastructure

6. No way to deal with disasters

Cloud Computing: It is on-demand delivery of compute power, database storage, applications and other IT resources.

- It has a pay-as-you-pricing

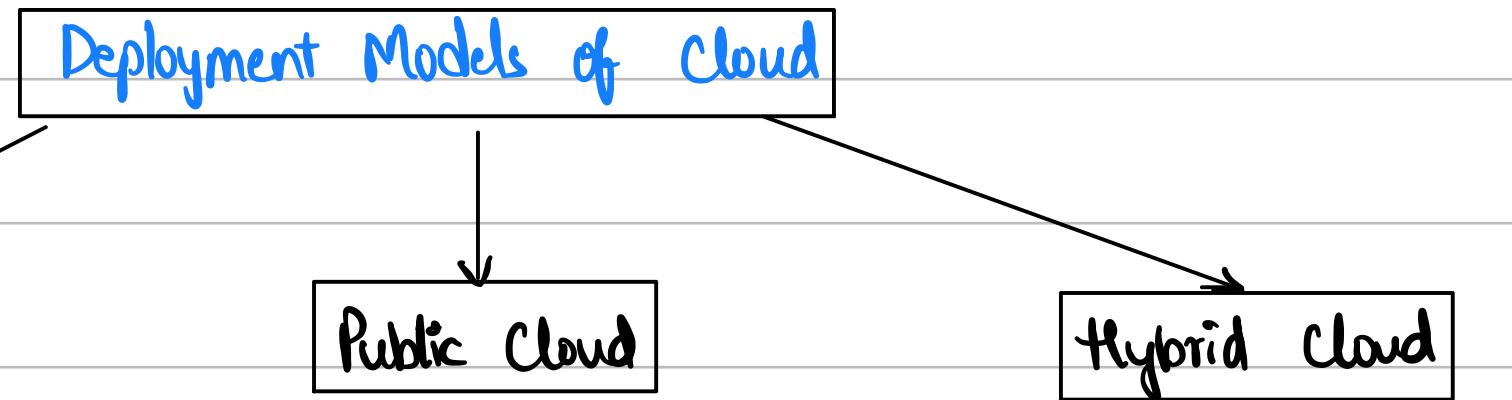
- You can provision exactly the right type and size of computing resources

- You can access everything instantly

- Simple way to access servers, storage, db and application services

AWS maintains hw and you use them via web application

Ex: Gmail, Dropbox, Netflix



- services used by
single organization

- more security

- complete control

- resources owned &
operated by 3rd
party delivered on
internet

- six advantages of
cloud computing

- some on premise & some
extended to cloud

- control over sensitive
information

- flexibility & cost effectiveness
of public cloud

rackspace

Azure, GCP, AWS

↔ AWS

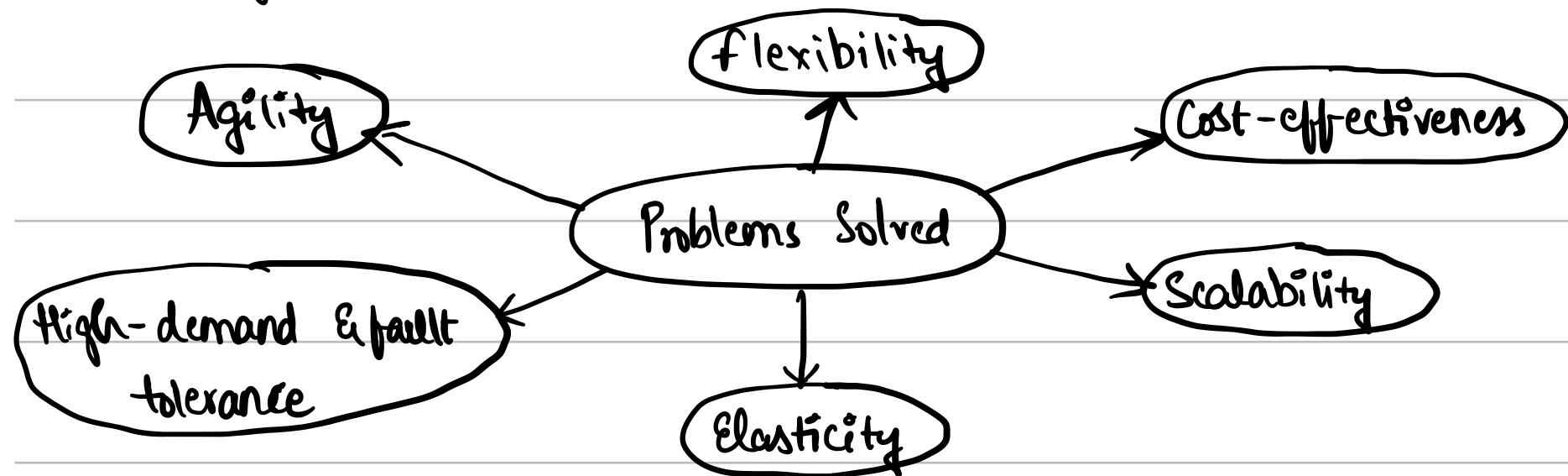
- five characteristics of cloud Computing:

1. On-demand self-service
2. Broad network access
3. Multi-tenancy and resource pooling
4. Rapid elasticity & Scalability
5. Measured Service

- Six Advantages of Cloud Computing:

1. Trade Capital Expense (CapEx) for operational expense (OpEx)
2. Benefit from massive economies of scale

3. Stop guessing capacity
4. Increase speed and agility
5. Stop spending money running and maintaining data centers
6. Go global in minutes.



Types of Cloud Computing

1. Infrastructure as a Service (IaaS):

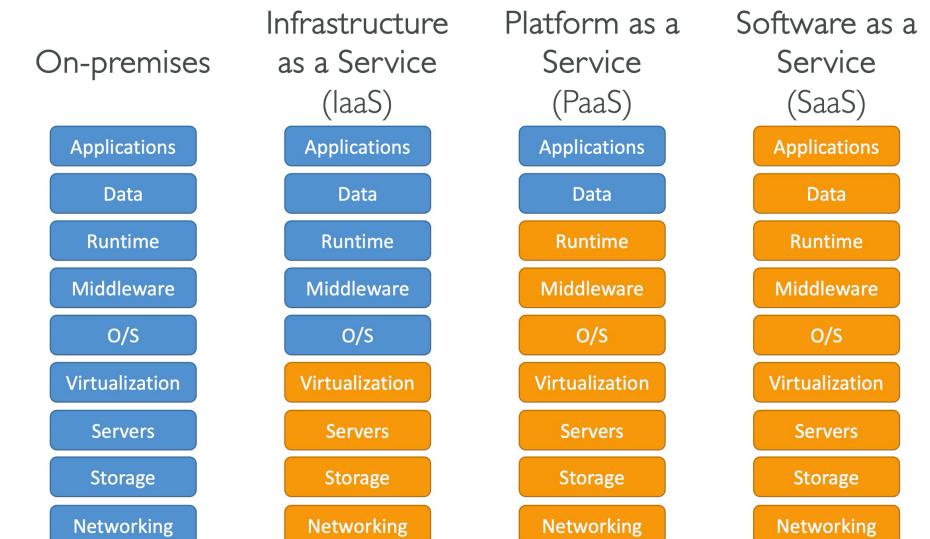
- ↳ provides building blocks for Cloud IT.
- ↳ provides networking, computers and data storage space.
- ↳ highest level of flexibility

2. Platform as a Service (PaaS):

- ↳ Removes the need for your organization to manage the underlying infrastructure
- ↳ focus on just deployment & management of your applications.

3. Software as a Service (SaaS):

- ↳ Completed product



- Some AWS use cases are:

↳ Enterprise IT, Backup & Storage, Big Data Analytics

↳ Website hosting, mobile & social apps

↳ Gaming

AWS Edge locations

↳ 400+, content is delivered with low latency

AWS Global Infrastructure

AWS Data Centers

AWS Regions

↳ services are region-scoped
↳ Compliance, proximity, available services, pricing

AWS Availability Zones

↳ 3-6 in each region

↳ discrete data center with redundancy

Global AWS Services: IAM, Route 53, CloudFront, WAF

Region-Scope: EC2, Beanstalk, Lambda, Rekognition

↳ connected with high-bandwidth, ultra-low latency networks.

Customer: Responsible for security **in** the cloud

AWS: Responsible for security **of** the cloud

