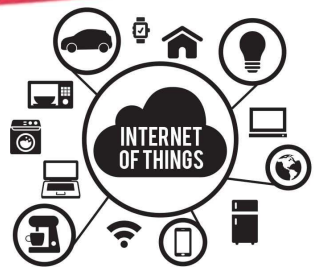
SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Department of Information Technology



19ITT30 - INTERNET OF THINGS

III B.Tech. IT/ V SEMESTER

UNIT II : FUNDAMENTAL MECHANISMS & KEY TECHNOLOGIES

Topic 8: Cloud Computing, Bigdata Analytics

Identification of IoT Objects and Services- Structural aspects of IoT-Environment Characteristics- Traffic Characteristics-Scalability-Interoperability-Security and privacy -Key IoT Technologies : Device Intelligence - Communication Capabilities - Mobility Support - Device Power –Sensor Technology –RFID Technology - Satellite Technology - IoT Enabling Technologies- WSN, Cloud Computing, Bigdata Analytics, communication protocols, embedded systems

IoT Enabling Technologies

IoT(internet of things) enabling technologies are

1.Wireless Sensor Network

2.Cloud Computing

3.Big Data Analytics

4.Communications Protocols

5.Embedded System

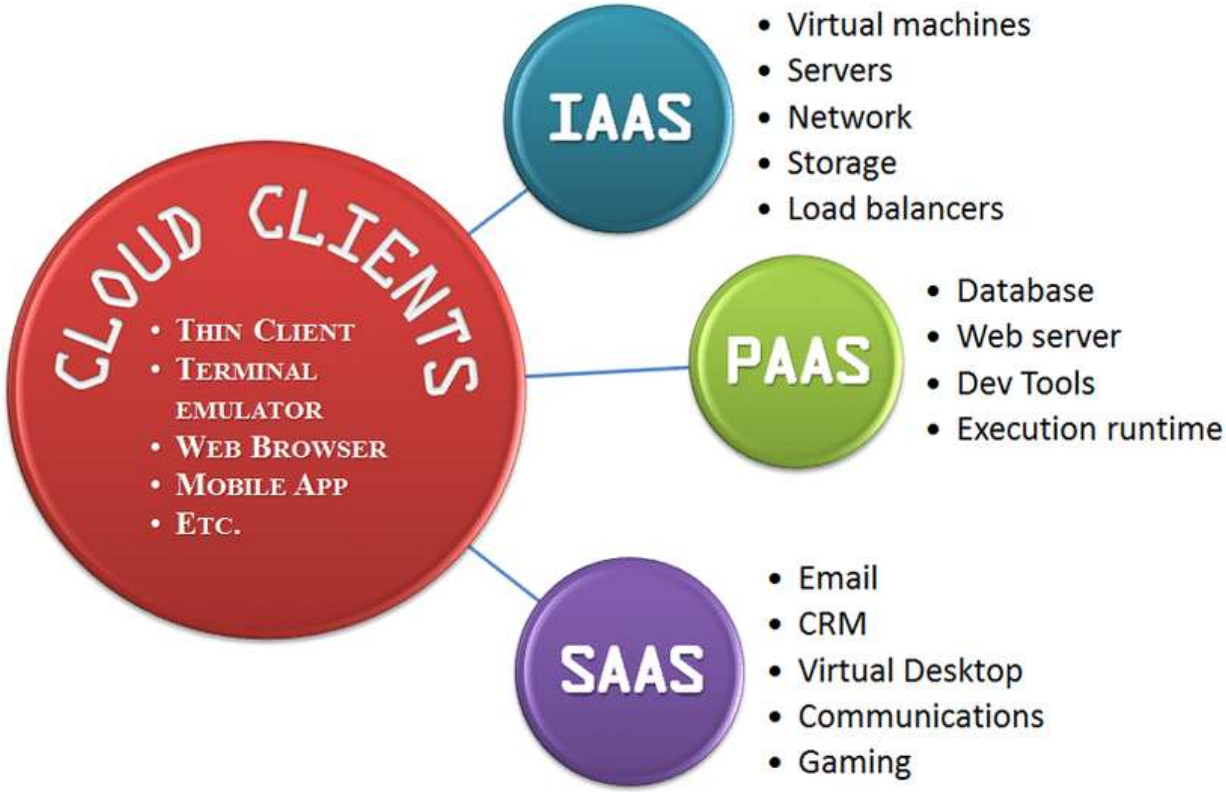
- It provides us the means by which we can access applications as utilities over the internet. Cloud means something which is present in remote locations.
- With Cloud computing, users can access any resources from anywhere like databases, webservers, storage, any device, and any software over the internet.

Characteristics –

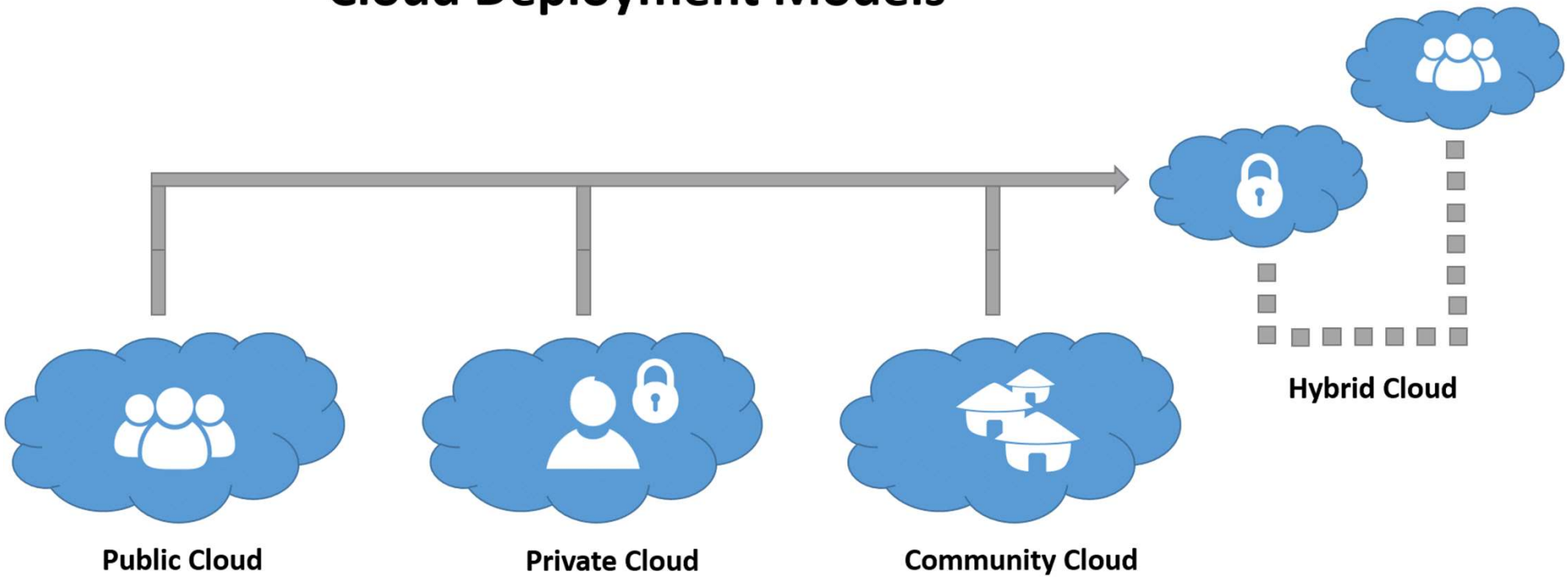
1. Broad network access
2. On demand self-services
3. Rapid scalability
4. Measured service
5. Pay-per-use

Services offered by Cloud

- IaaS – Infrastructure as a Service
- PaaS – Platform as a Service
- SaaS – Software as a Service



Cloud Deployment Models



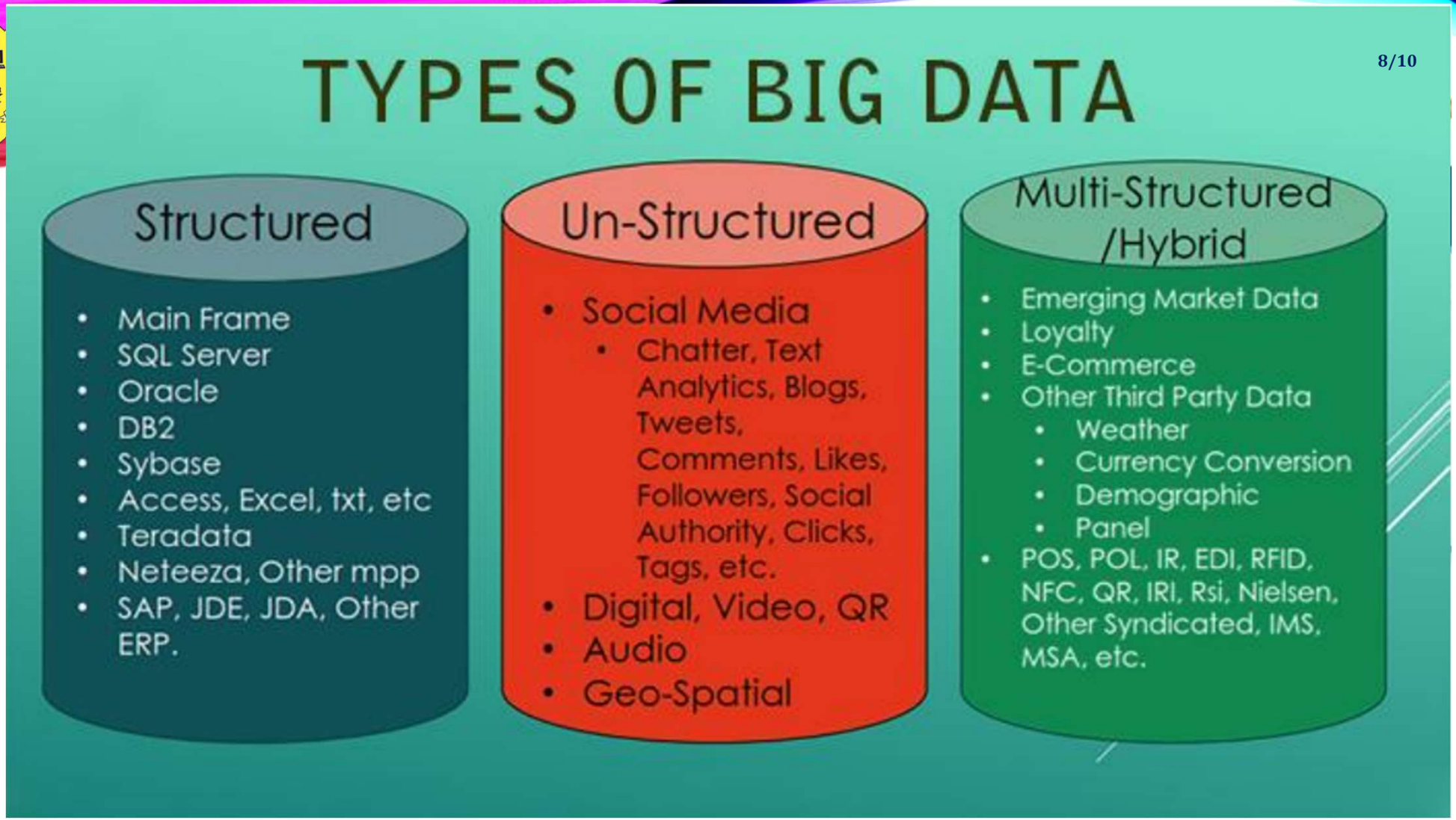
Big Data Analytics

- It refers to the method of studying massive volumes of data or big data.
- Collection of data whose volume, velocity or variety is simply too massive and tough to store, control, process and examine the data using traditional databases.
- Big data is gathered from a variety of sources including social network videos, digital images, sensors and sales transaction records.

Big Data Analytics

Source

- Sensors used to gather climate information, posts to social media sites, digital pictures and videos, purchase transaction records and cell phone GPS signals, to name a few.
- Artificial intelligence (AI), Mobile, Social Media and the Internet of Things (IoT) are driving data complexity through new forms and sources of data.
- For example, big data comes from Sensors, Devices, Video/Audio, Networks, Log files, Transactional applications, Web, and Social media — much of it generated in real time and at a very large scale.


TYPES OF BIG DATA
Structured
Main Frame
SQL Server
Oracle
DB2
Sybase
Access, Excel, txt, etc
Teradata
Neteeza, Other mpp
SAP, JDE, JDA, Other ERP.
Un-Structured
Social Media
Chatter, Text Analytics, Blogs, Tweets, Comments, Likes, Followers, Social Authority, Clicks, Tags, etc.
Digital, Video, QR
Audio
Geo-Spatial
Multi-Structured /Hybrid
Emerging Market Data
Loyalty
E-Commerce
Other Third Party Data
Weather
Currency Conversion
Demographic
Panel
POS, POL, IR, EDI, RFID, NFC, QR, IRI, Rsi, Nielsen, Other Syndicated, IMS, MSA, etc.

Big Data Analytics

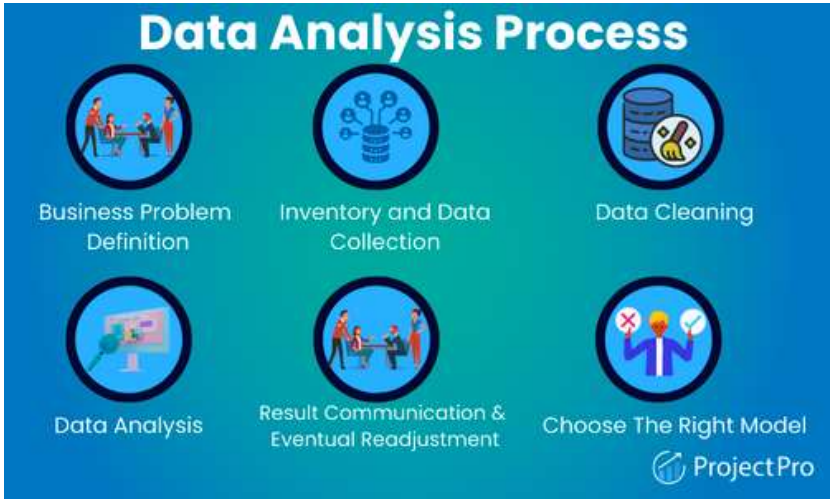
Several steps involved in analyzing big data –

1.Data cleaning

2.Munging

3.Processing

4.Visualization



Examples –

•Bank transactions

•Data generated by IoT systems for location and tracking of vehicles

•E-commerce and in Big-Basket

•Health and fitness data generated by IoT system such as a fitness bands

Thank You!