SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME : 19CS508 - BIG DATA ANALYTICS

III YEAR / V SEMESTER

Unit 1- INTRODUCTION TO BIG DATA

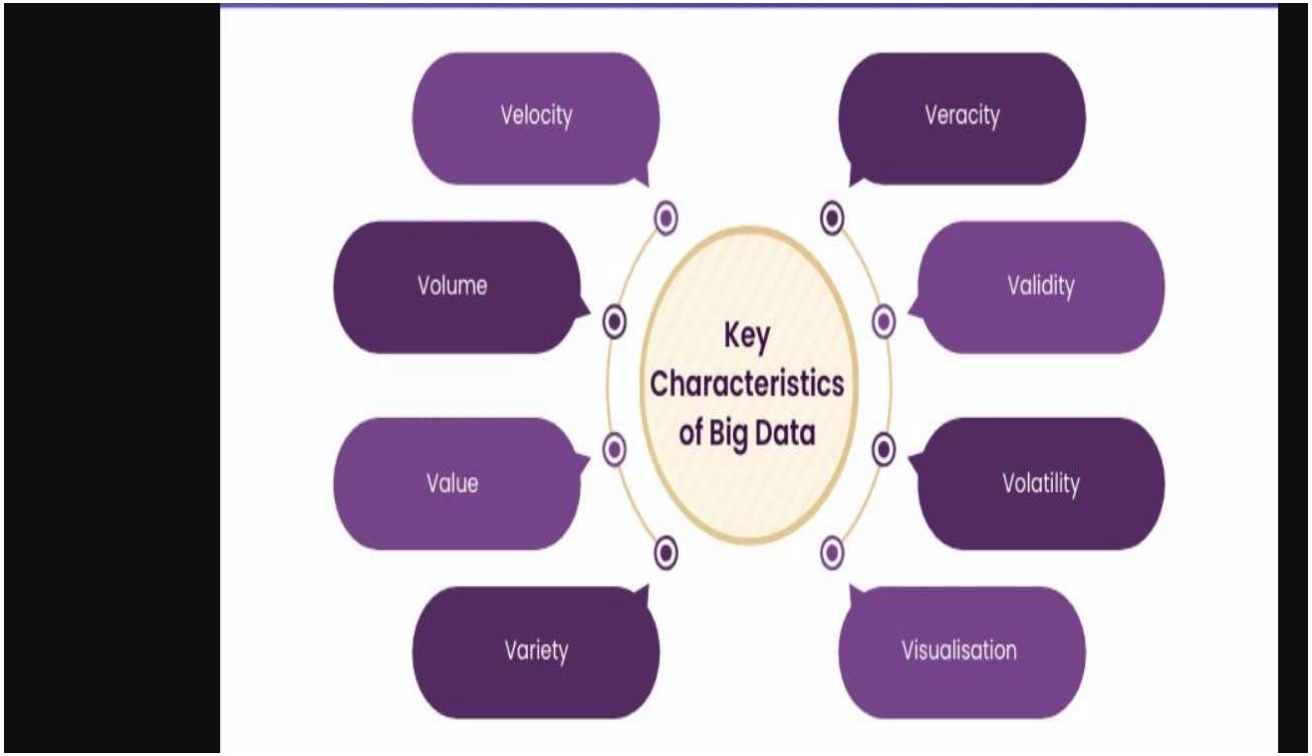
Topic 2 : Big data Characteristics and Big Data Architecture

Problem

- Storage
- Processing
- Security
- Finding and Fixing Data Quality Issues
  - Correct information in the original database.
  - Repairing the original data source is necessary to resolve any data inaccuracies

Characteristics of Big Data

- ✓ What are the Characteristics of Big Data?
- ✓ Velocity
- ✓ Volume
- ✓ Value
- ✓ Variety
- ✓ Veracity
- ✓ Validity
- ✓ Volatility
- ✓ Visualisation

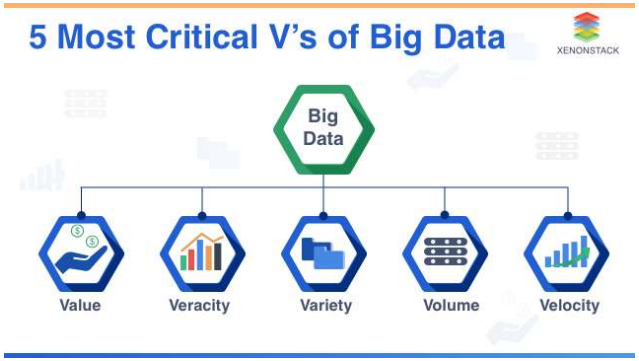


Characteristics of Big Data

✓ Volume

- The name Big Data itself is related to an enormous size. Big Data is a vast 'volumes' of data generated from many sources daily, such as **business processes, machines, social media platforms, networks, human interactions,** and many more.

•**Facebook** can generate approximately a **billion** messages, **4.5 billion** times that the "**Like**" button is recorded, and more than **350 million** new posts are uploaded each day. Big data technologies can handle large amounts of data



Characteristics of Big Data

•***Velocity***

•Velocity refers to the speed at which data is created or generated. This will be dependent on how fast the data will be processed. The reason is that the data will be able to meet the demands of clients/users only after analysis and processing. Every day, massive amounts of data are produced continuously and only when this flow is continuous can there be a point in investing time or effort on it.

•***Value***

Value is the most important attribute of big data. No matter at what speed the data is produced or in what volume, it can only be good enough if it adds value to an organization.

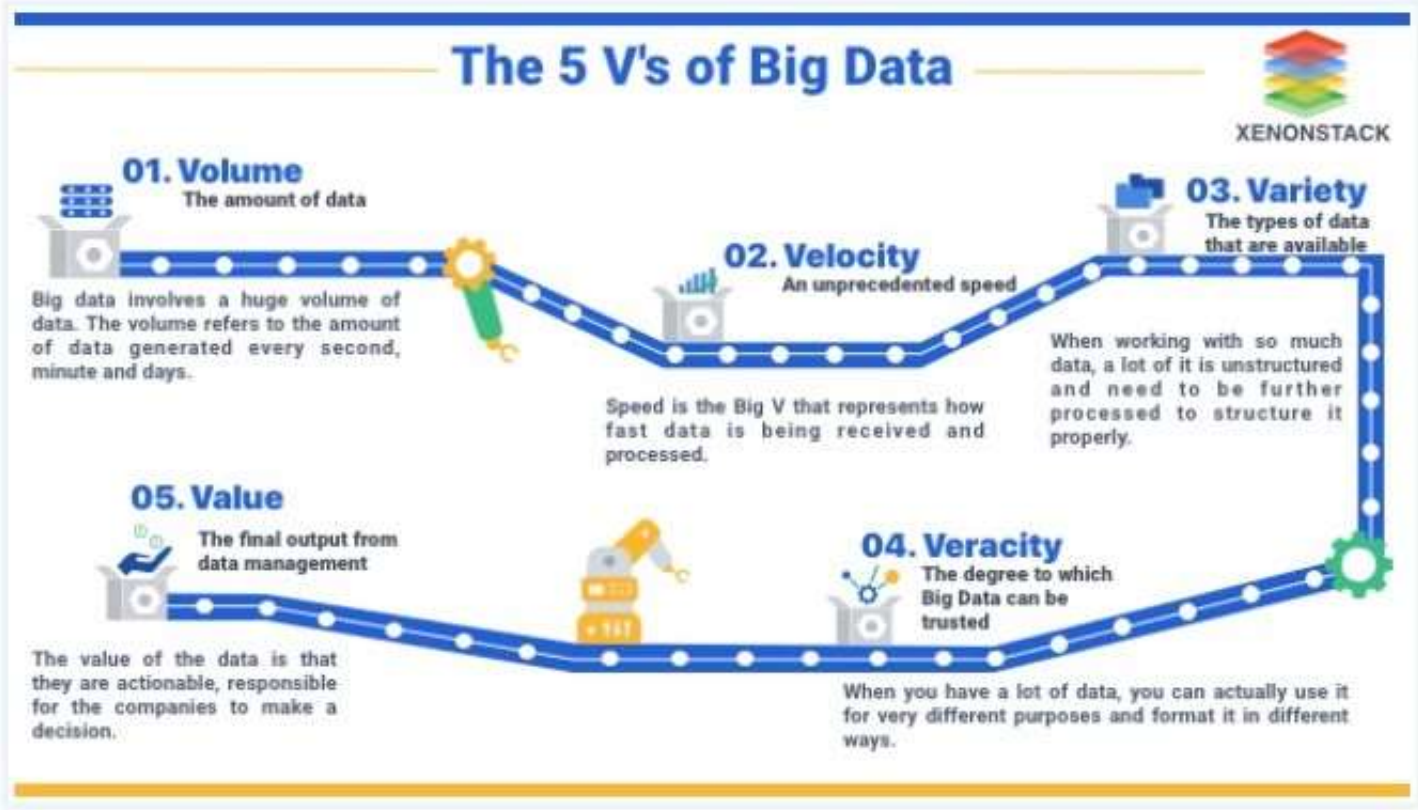
In **Data Science**, Raw data is first converted into information by data scientists, the most useful data is retrieved, and then it is analysed for patterns and insights.

•***Veracity***.

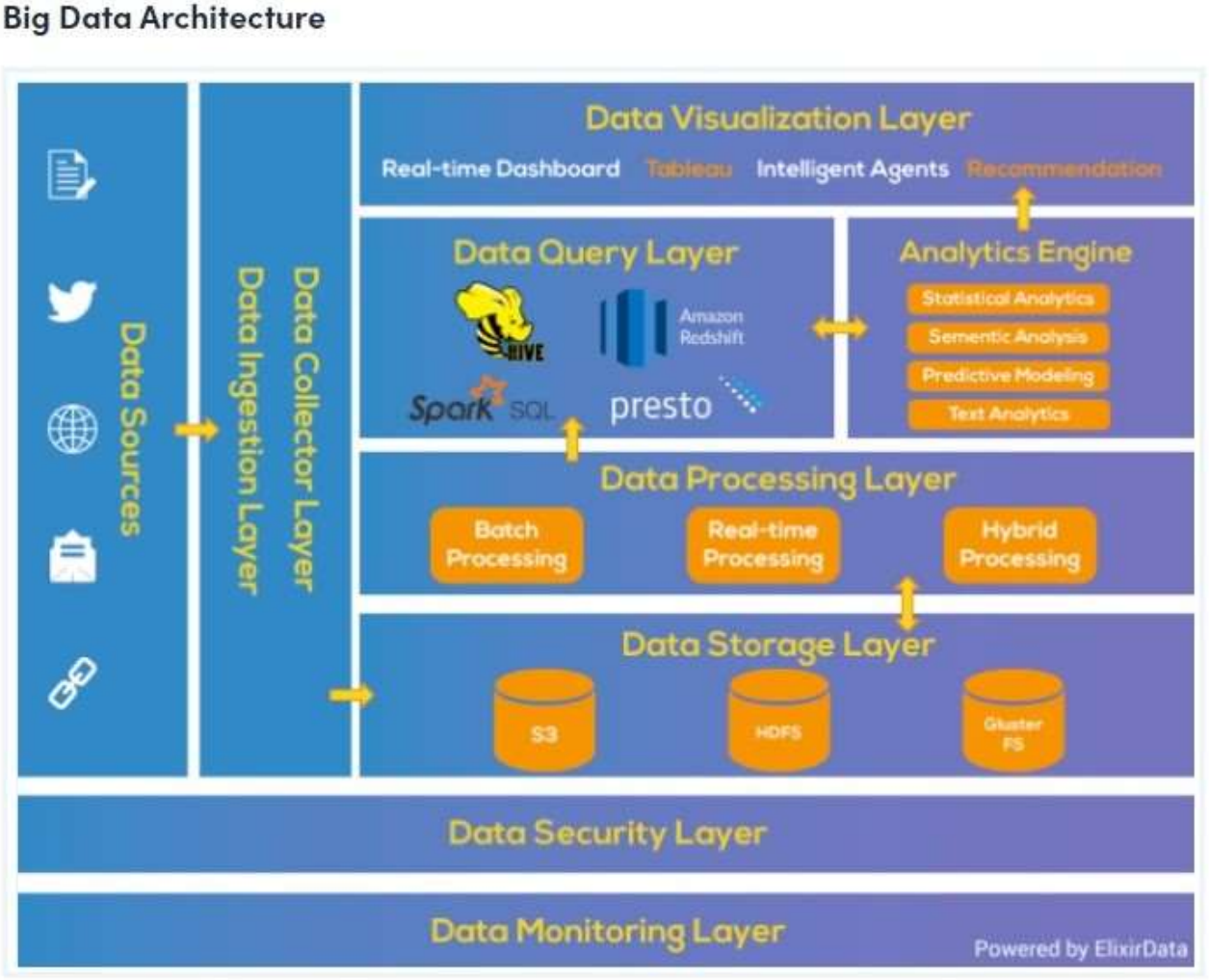
Characteristics of Big Data

•***Veracity***.

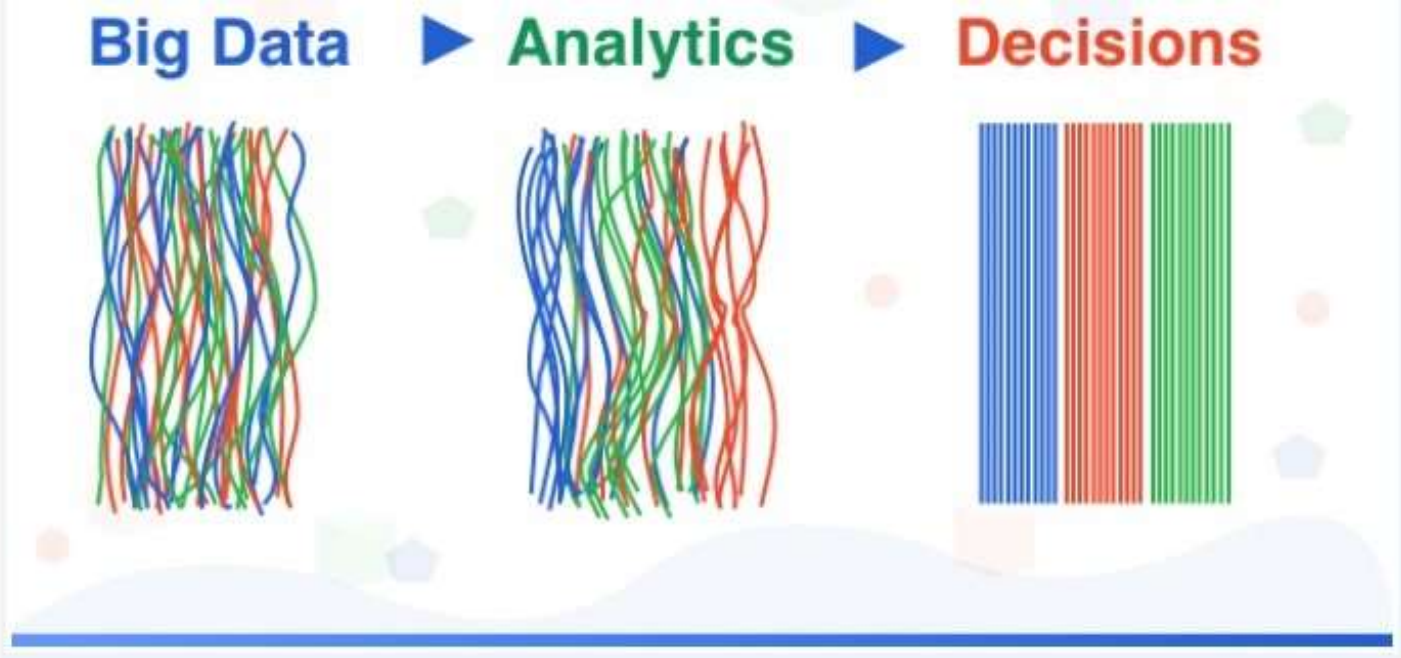
•Value and veracity of big data are interconnected. Veracity refers to how much data can be trusted.



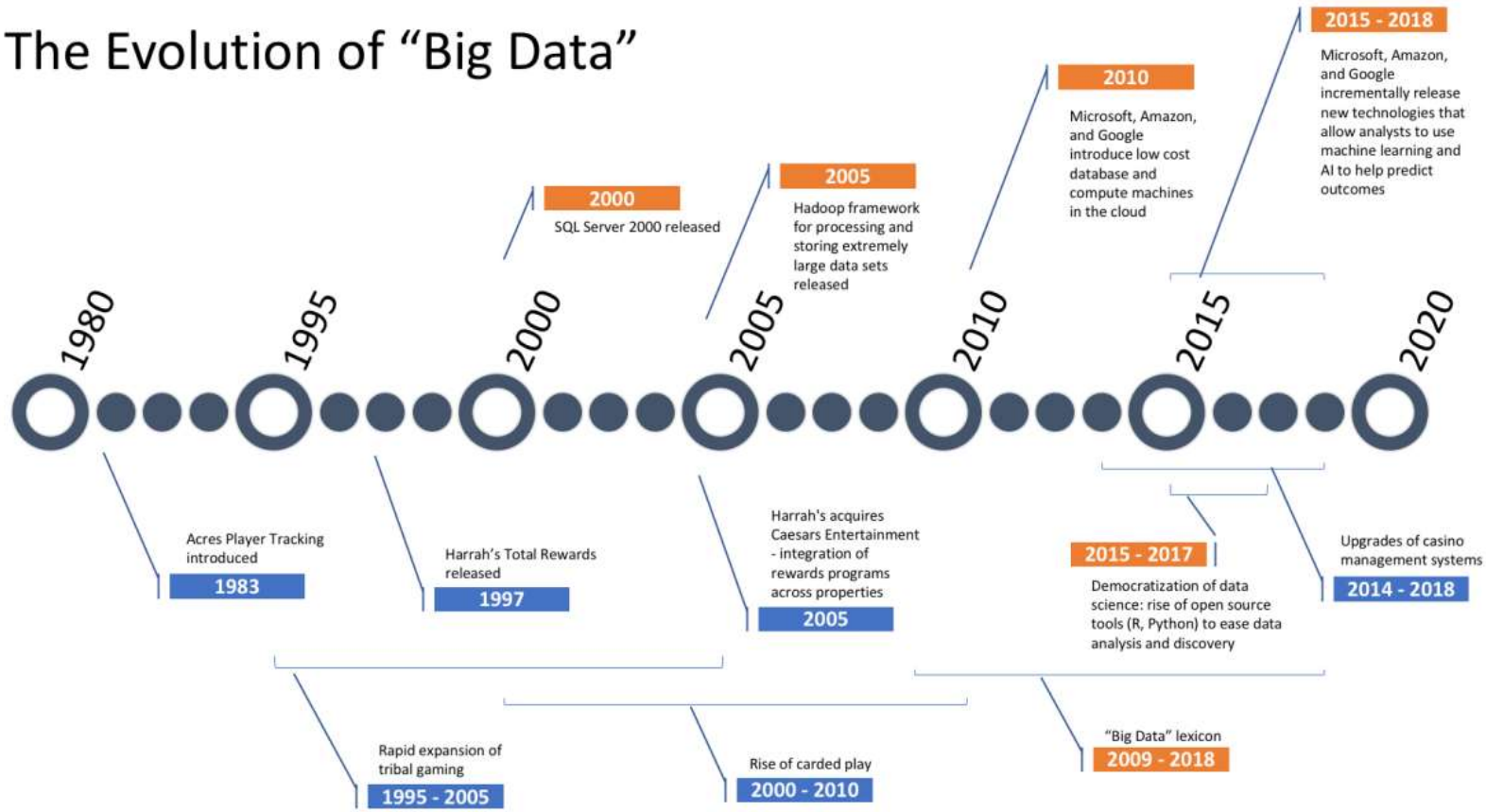
Big Data Architecture



How does work ?



Application



Activity

Advantages

- ✓ Big data aids in predictive analysis and can save organizations from operational risks
- ✓ Predictive analysis helps organizations improve business by understanding their customer requirements.
- ✓ Multimedia platforms are able to share data, thanks to big data
- ✓ Patients can be kept under proper care and observation
- ✓ It has changed the face of customer-based companies and the global market
- ✓ Improved Decision-Making Capabilities

Disadvantages

- ✓ Improved Decision-Making Capabilities
- ✓ Privacy Concerns
- ✓ Data Quality Issues
- ✓ Talent And Staffing Needs

Assessment 1

1. List out the advantages of big data Characteristics

a)_____

b)_____

c)_____

d)_____

2. Identify the disadvantages of big data Characteristics

a)_____

b)_____

c)_____

d)_____

REFERENCES

1. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", Cambridge University Press, 2012.
2. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", Morgan Kaufmann/Elsevier Publishers, 2013
3. Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data", Wiley publishers, 2015.

THANK YOU