SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Department of Information Technology

19ITE305 – BIG DATA ANALYTICS

III B.Tech. IT/ VI SEMESTER

UNIT I : INTRODUCTION TO BIG DATA AND ANALYTICS

Topic 1 : Classification of Digital Data, Structured and Unstructured Data

Classification of Digital Data, Structured and Unstructured Data - Introduction to Big Data: Characteristics – Evolution – Definition - Challenges with Big Data - Other Characteristics of Data - Why Big Data - Traditional Business Intelligence versus Big Data - Data Warehouse and Hadoop Environment

Big Data Analytics: Classification of Analytics – Challenges - Big Data Analytics important - Data Science - Data Scientist - Terminologies used in Big Data Environments .

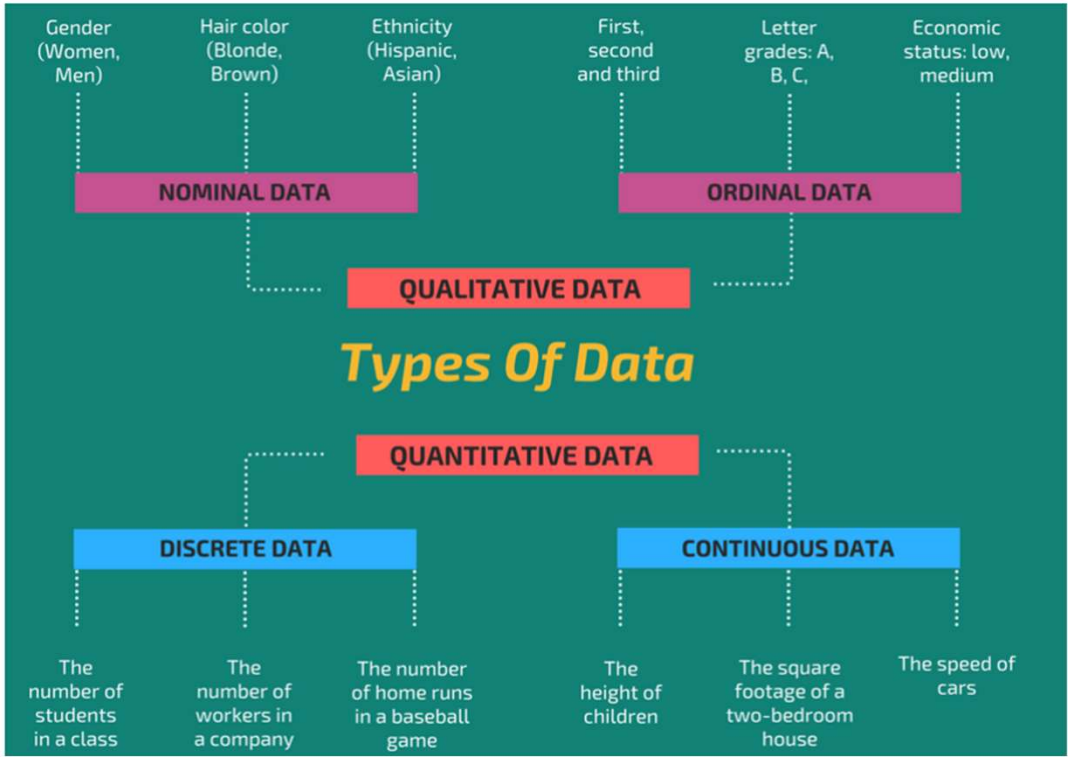
What is data and information?

Data is raw, unorganized, unprocessed information. E.g., the information collected for writing a research paper is data until it is presented in an organized manner.

Data generates information and from information we can draw valuable insight.

Information is the processed, organized data that is beneficial in providing useful knowledge. For eg., the data compiled in an organized way in a research paper provides information about a particular concept/ topic.

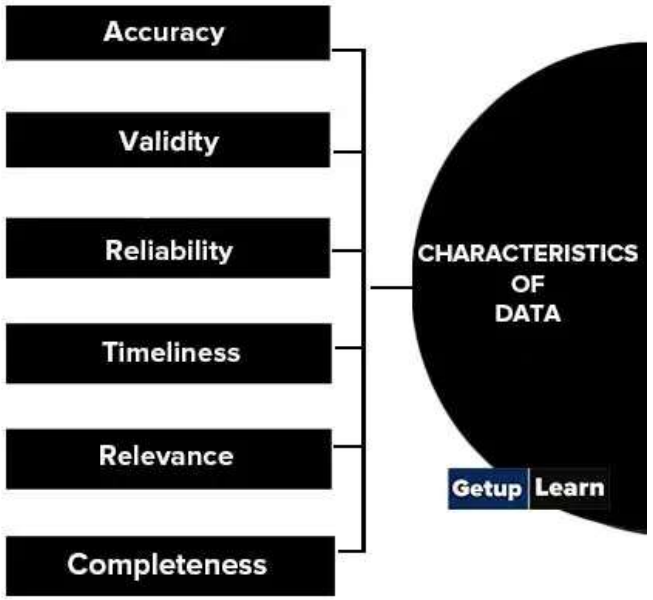
Types of data



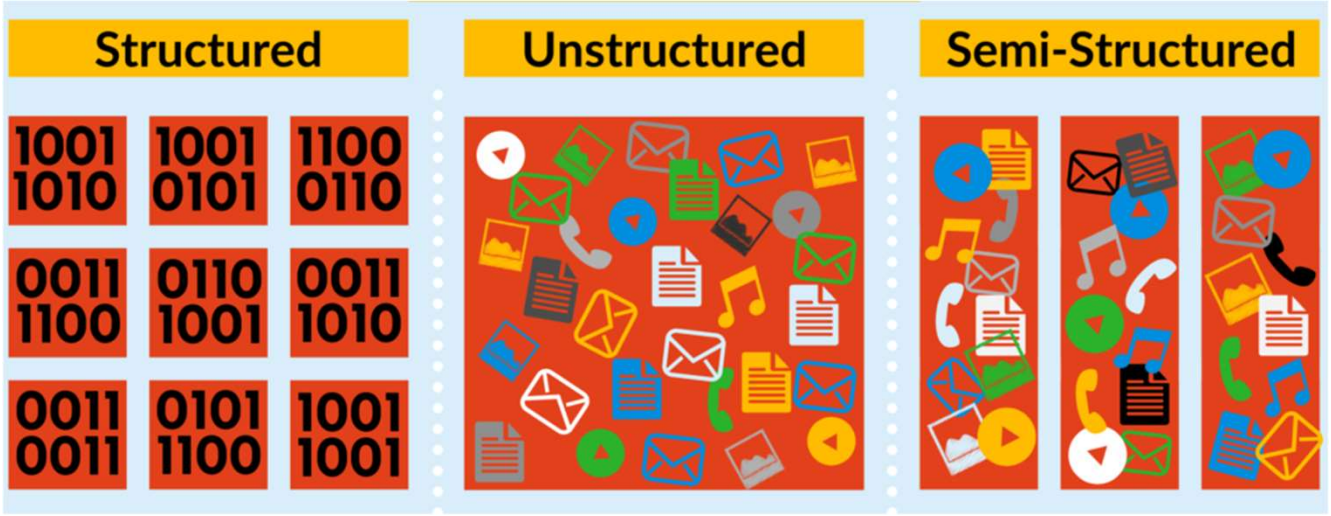
Characteristics of Data

The following are six key characteristics of data

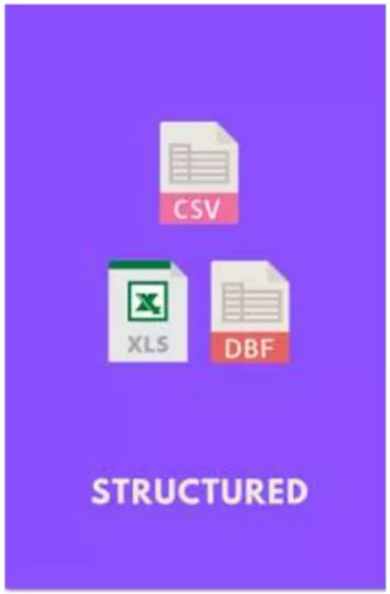
- Accuracy
- Validity
- Reliability
- Timeliness
- Relevance
- Completeness



Classification of Digital Data



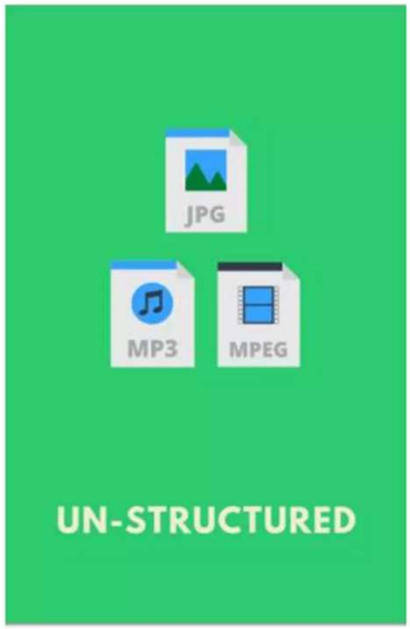
Structured Data



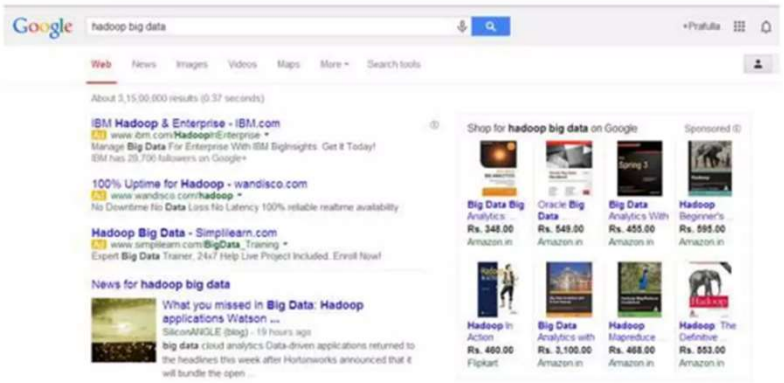
> **Structured Data** refers to the data that has a proper structure associated with it. For example, the data that is present within the databases, the CSV files, and the excel spreadsheets can be referred to as Structured Data.

Employee_ID	Employee_Name	Gender	Department	Salary_In_lacs
2365	Rajesh Kulkarni	Male	Finance	650000
3398	Pratibha Joshi	Female	Admin	650000
7465	Shushil Roy	Male	Admin	500000
7500	Shubhojit Das	Male	Finance	500000
7699	Priya Sane	Female	Finance	550000

Unstructured Data



Un-Structured Data refers to the data that does not have any structure associated with it at all. For example, the image files, the audio files, and the video files can be referred to as Un-Structured Data.



Semi-structured Data

Semi-Structured Data refers to the data that does not have a proper structure associated with it. For example, the data that is present within the emails, the log files, and the word documents can be referred to as Semi-Structured Data.

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<rec><name>Prashant Rao</name><sex>Male</sex><age>35</age></rec>
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<rec><name>Satish Mane</name><sex>Male</sex><age>29</age></rec>
<rec><name>Subrato Roy</name><sex>Male</sex><age>26</age></rec>
<rec><name>Jeremiah J.</name><sex>Male</sex><age>35</age></rec>
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TEXT BOOKS

Seema Acharya, Subhashini Chellappan, “Big Data and Analytics”, Wiley Publications, First Edition,2015

REFERENCES

1. Judith Huruwitz, Alan Nugent, Fern Halper, Marcia Kaufman, “Big data for dummies”, John Wiley & Sons, Inc. (2013)
2. Tom White, “Hadoop The Definitive Guide”, O’Reilly Publications, Fourth Edition, 2015
3. Dirk Deroos, Paul C.Zikopoulos, Roman B.Melnky, Bruce Brown, Rafael Coss, “Hadoop For Dummies”, Wiley Publications, 2014
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5. Paul Zikopoulos, “Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, McGraw Hill, 2012