

Data Mining and Warehousing (03105430)

Dheeraj Kumar Singh, Assistant Professor
Department of Information Technology



The Course Outline

Chapter 1 : Introduction to data mining

Chapter 2: Overview and concepts Data Warehousing and Business Intelligence

Chapter 3: Data Warehousing and Online Analytical Processing

Chapter 4: Data Pre-processing

Chapter 5: Mining Frequent Patterns, Associations, and Correlations:

Chapter 6: Classification

Chapter 7: Clustering

Chapter 8: Applications



CHAPTER-2

Overview and Concept: DW and BI



Why reporting and Analyzing data

- Data analysis comprises of a collection of methods to deal with data/information obtained through observations, measurements, surveys or experiments about a phenomenon of interest.
- The aim and purpose of data analysis is to extract as much information as possible that is important to the subject under consideration
- Raw data to valuable information

Data vs. Information

Table 2.1 Data vrs Information

Data	Information
Raw facts	Data with context
No context	Valued added to data
Just numbers and text	Processed data

Data VS. Information (Contd.....)

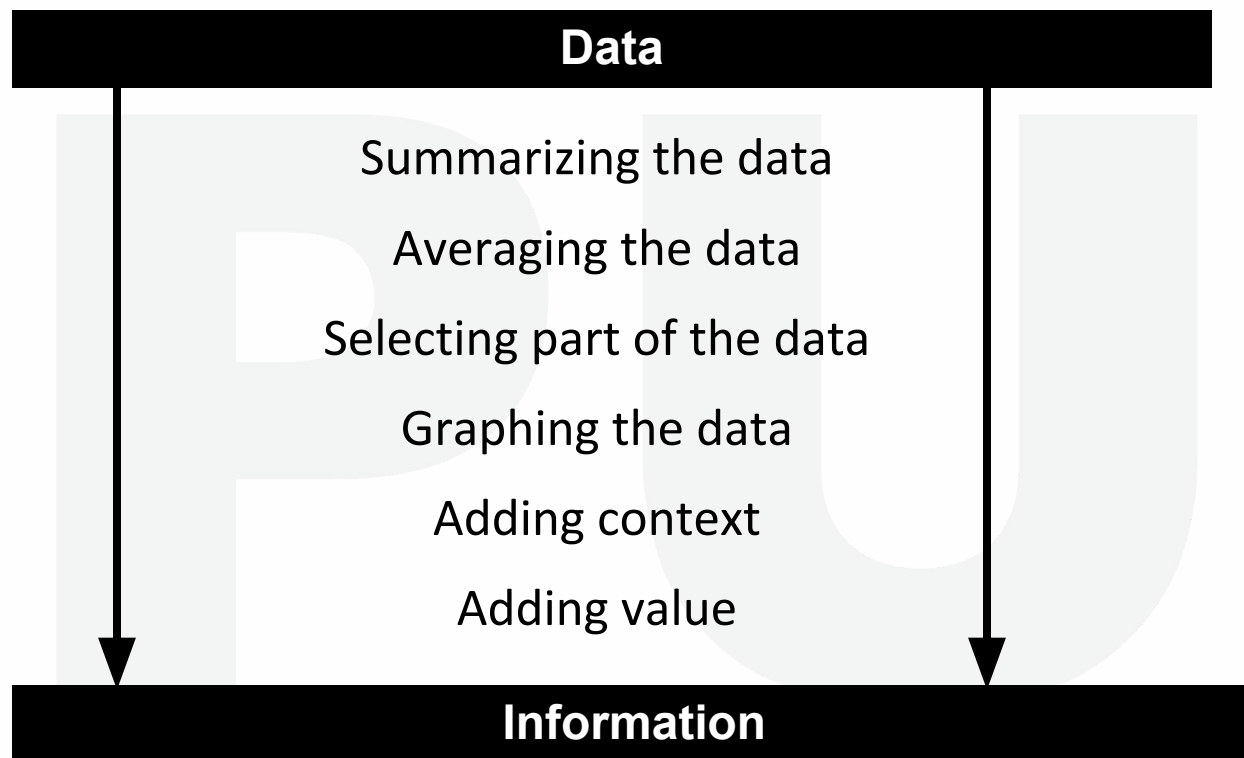
- **Data**

- 51007

- **Information**

- 5/10/07 The date of your final exam.
 - \$51,007 The average starting salary of an accounting major.
 - 51007 Zip code of any place.

Data ? Information ? Knowledge





Business Intelligence

- BI refers to technologies, applications and practices for the collection, integration, analysis, and presentation of business information
- The purpose of BI is to support better business decision making
- BI systems provide historical, current, and predictive views of business operations, most often using data that has been gathered into a data warehouse or a data mart and occasionally working from operational data



Business Intelligence

- BI is neither a product nor a system
- It is an architecture and a collection of integrated operational as well as decision-support applications and databases that provide the business community easy access to business data



Figure 1.1
Concept of BI
[3]



Why is Business Intelligence Important?

- For proactively identifying market trends and opportunities
- For prioritizing business activities and expenditure to ensure the most efficient use of the available resources and make effective business decisions
- For making intelligent, informed decisions and contribute to business success
- For acting on the results of analysis of a complete and consistent version of all enterprise data



Key Stage of BI

- Data Sourcing
- Data Analysis
- Situation Awareness
- Risk Analysis
- Decision Support

PU

Key Stage (Contd.....)

Table 2.2 Key stage Of Business Intelligence

Stage	Description
1. Data sourcing (Acquisition)	Mining data and information from text documents, databases, images, media files, and web pages
2. Data analysis (Organization)	Producing useful knowledge from the collected data and information, using tools such as data mining and text/image analysis techniques
3. Situation awareness (Analysis)	Culling out and relating the useful facts and knowledge, while filtering out irrelevant data
4. Risk assessment (Analysis)	Identifying decision options and evaluating them based on expectations of risk and reward
5. Decision support (Decision)	Using interactive software tools to identify and select intelligent decisions and strategies



Significance of BI

- **To know about Customers**

- Having access to timely and accurate information is an important Resource for a company, which can expedite decision-making and improve customers' experience.

- In the competitive customer-service sector, companies need to have accurate, up-to-date information on customer preferences, so that the company can quickly adapt to their changing demands.

- BI enables companies to gather information on the trends in the Marketplace and come up with innovative products or services in anticipation of customer's changing demands.

Significance of Bi (Contd.....)

- **To know about Competitors...Market...**

- BI applications can also help managers to be better informed about actions that a company's competitors are taking.
- BI systems can also be designed to provide managers with information on the state of economic trends or marketplace factors, or to provide managers with in depth knowledge about the internal operations of business.

Significance of Bi (Contd.....)

- **For avoiding Guesswork...**

- BI can be used to help analysts and managers determine which adjustments are most likely to respond to changing trends.
- BI systems can help companies develop a more consistent, data-based decision making process for business decisions, which can produce better results than making business decisions by "guesswork."



Significance of Bi (Contd.....)

- **For sharing of information...**

- BI can help companies share selected strategic information with business partners
- Some businesses use BI systems to share information with their suppliers like..
 - Inventory levels performance metrics, other supply chain data, etc.



Difference between DW And BI

Table 2.3
Difference
between DW
and BI

	Business Intelligence	Data Warehouse
Goal	Gets data from data warehouses or data marts	Gets data from multiple data sources
Output	Represents data in reports, charts and graphs	Represents data in tables
Audience	C-level executives, manager and data analytics	Data engineers, back end developers
Tools	Datapine	Amazon Redshift

× ○ DIGITAL LEARNING CONTENT



Parul[®] University



www.paruluniversity.ac.in