

DATA MINING

Introduction

1) What is Data Mining?

- **Ans) The process of extracting knowledge or insights from large amounts of data using various statistical and computational techniques.**
- **The data can be structured, semi-structured or unstructured, and can be stored in various forms such as databases, data warehouses, etc.**
- **The primary goal of data mining is to discover hidden patterns and relationships in the data that can be used to make informed decisions or predictions.**

2) Applications of Data Mining.

- **Ans) Marketing: Data mining can be used to identify customer segments and target marketing campaigns.**
- **Healthcare: It can be used to identify risk factors for diseases and develop personalized treatment plans.**

3) What is Business Intelligence?

- **Ans) A set of concepts and methodologies to improve decision-making in business through the use of facts and fact-based systems.**
- **The Goal of Business Intelligence is to improve decision-making in business ideas and analysis.**
- **BI (Business Intelligence) uses a set of processes, technologies, and tools (such as Informatica/IBM) to transform raw data into meaningful information and then transform information to provide knowledge.**

4) Explain the Types of Users of Business Intelligence.

Ans) Types of Users of Business Intelligence:

- (i) Analyst (Data Analyst or Business Analyst): They are the statistician of the company, they use BI on the basis of historical data priorly stored in the system.**

(ii) Head or Manager of the Company: Used to increase the profitability of their company by increasing the efficiency in their decisions on the basis of all the knowledge they discovered.

(iii) IT Engineer: For his company.

(iv) Small Business Owners: Can be used by a small businessman because it is quite affordable too.

(v) Government Officials: In the decision-making of the government.

5) Explain the Advantages of Data Mining.

Ans) Advantages of Data Mining:

- Data mining can uncover hidden patterns and relationships in data that are not immediately apparent.
- Data mining can be used to identify new opportunities and improve business processes.
- Data mining can help organizations predict future outcomes based on historical data.

6) Explain the Disadvantages of Data Mining.

Ans) Disadvantages of Data Mining:

- Data mining requires significant technical expertise and specialized software.
- Data mining can be computationally intensive and may require significant computing resources.
- Data mining can produce false positives or overfitting if not carefully validated.

7) Explain the similarities between Business Intelligence (BI) and Data Mining.

Ans) Similarities between Business Intelligence (BI) and Data Mining:

- Both BI and data mining use data to provide insights and support decision-making.
- Both technologies require a significant amount of data to be effective.
- Both BI and data mining can be used to identify patterns and trends in data.