''बेटी बचाओ, बेटी पढ़ाओ''

# JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR

## (Format for Preparing E Notes)

## Faculty of Education & Methodology

**Faculty Name-** **JV'n Dr. Satish Chandra Pandey (Associate Professor)**

**Program-** MCA-I Semester / Year

**Course Name -** MCA

**Session No. & Name –** 1.3 (Major Issues in Data Mining & KDD Process)

### Academic Day starts with –

- Greeting with saying **'Namaste'** by joining Hands together following by 2-3 Minutes Happy session, Celebrating birthday of any student of respective class and **National Anthem**.

**Lecture Starts with-**

Review of previous Session- Data Mining Process

- Topic to be discussed today- Today We will discuss about Major Issues in Data Mining & KDD Process of Data Mining

**Major Issues In Data Mining:**

- **Mining different kinds of knowledge in databases.** - The need of different users is not the same. And Different user may be in interested in different kind of knowledge. Thereforeit is necessary for data mining to cover broad range of knowledge discovery task.

- **Interactive mining of knowledge at multiple levels of abstraction.** - The data mining process needs to be interactive because it allows users to focus the search for patterns, providing and refining data mining requests based on returned results.

- **Incorporation of background knowledge.** - To guide discovery process and to express the discovered patterns, the background knowledge can be used. Background knowledge may be used to express the discovered patterns not only in concise terms but at multiple level of abstraction.
- **Data mining query languages and ad hoc data mining.** - Data Mining Query language that allows the user to describe ad hoc mining tasks, should be integrated with a data warehousequery language and optimized for efficient and flexible data mining.

- **Presentation and visualization of data mining results.** - Once the patterns are discovered it needs to be expressed in high level languages, visual representations. This representations shouldbe easily understandable by the users.

- **Handling noisy or incomplete data.** - The data cleaning methods are required that can handle the noise, incomplete objects while mining the data regularities. If data cleaning methods are not there then the accuracy of the discovered patterns will be poor.

- **Pattern evaluation.** - It refers to interestingness of the problem. The patterns discovered shouldbe interesting because either they represent common knowledge or lack novelty.

- **Efficiency and scalability of data mining algorithms.** - In order to effectively extract the information from huge amount of data in databases, data mining algorithm must be efficient and scalable.

- **Parallel, distributed, and incremental mining algorithms.** - The factors such as huge size of databases, wide distribution of data,and complexity of data mining methods motivate the development of parallel and distributed data mining algorithms. These

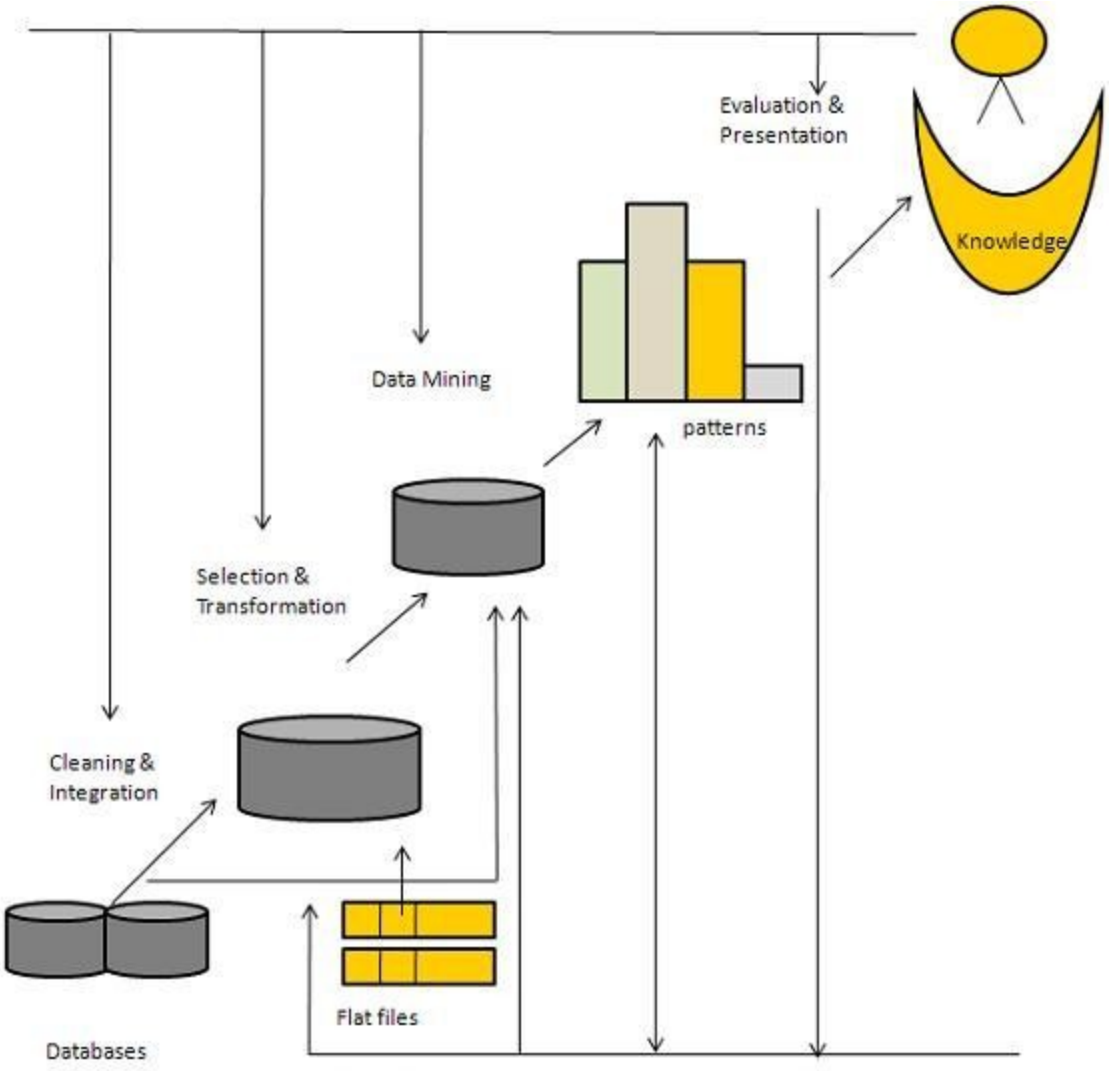
algorithm divide the data into partitions which is further processed parallel. Then the results from the partitions is merged. The incremental algorithms, updates databases without having mine the data again from scratch.

**Knowledge Discovery in Databases (KDD)**

Some people treat data mining same as Knowledge discovery while some people view data mining essential step in process of knowledge discovery. Here is the list of steps involved inknowledge discovery process:

- **Data Cleaning** - In this step the noise and inconsistent data is removed.
- **Data Integration** - In this step multiple data sources are combined.
- **Data Selection** - In this step relevant to the analysis task are retrieved from the database.
- **Data Transformation** - In this step data are transformed or consolidated into formsappropriate for mining by performing summary or aggregation operations.
- **Data Mining** - In this step intelligent methods are applied in order to extract datapatterns.
- **Pattern Evaluation** - In this step, data patterns are evaluated.
- **Knowledge Presentation** - In this step,knowledge is represented.

**The following diagram shows the process of knowledge discovery process:**




Architecture of KDD