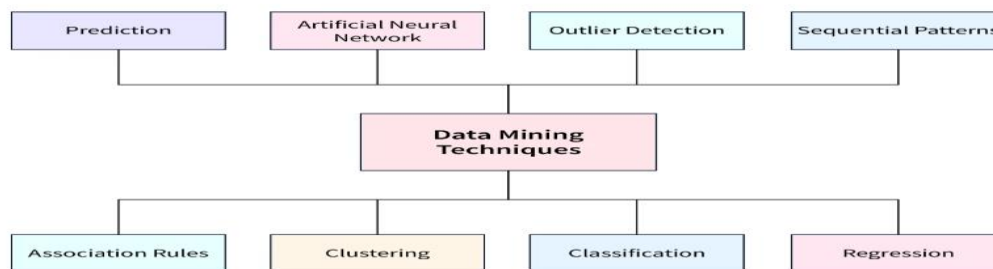


Other types of pattern

- Descriptive types of data mining techniques can be further divided into various categories, as mentioned below:
 - Clustering analysis
 - Summarization and visualization analysis
 - Association rules mining
 - Sequential pattern mining
 - Outlier detection



Different Data Mining Techniques

Data mining techniques are methods and algorithms that are used to extract meaningful insights and knowledge from large datasets. Some of the commonly used types of data mining techniques are:

- **Regression:**
Regression is a statistical data mining technique used to analyze the relationship between a dependent variable and one or more independent variables. The goal is to build a model that can predict the dependent variable value based on the independent variables' values. Regression is used in data mining to identify patterns, trends, and relationships between variables and to make predictions and forecasts.
- **Classification:**
Classification is a data mining technique that groups data into predefined classes or categories based on their characteristics. The goal is to build a model that can accurately classify new data into one of the existing classes. Classification is used in data mining for various purposes, such as customer segmentation, fraud detection, and disease diagnosis. Common classification algorithms include **logistic regression, decision trees, k-nearest neighbors**, and support vector machines.
- **Time series analysis:**
Time series analysis is one of the types of data mining techniques used to analyze sequential data, such as time-series data. The goal is to identify patterns, trends, and relationships in the data over time. Time series

analysis is used in data mining for various applications such as stock market forecasting, weather prediction, and trend analysis.

- **Clustering:**

Clustering is a data mining technique used to group similar objects based on their characteristics. The goal is to identify natural groupings or clusters in the data. Clustering is used in data mining for various purposes, such as customer segmentation, image segmentation, and anomaly detection.

- **Summarization:**

Summarization is one of the types of data mining techniques used to summarize the characteristics of a dataset into a more compact and understandable form. The goal is to provide an overview of the dataset and highlight the most important aspects. Summarization is used in data mining for various purposes, such as data visualization, report generation, and decision-making.

- **Association rule mining:**

Association rule mining is a data mining technique used to discover relationships between variables in large datasets. The goal is to identify rules that describe the relationships between variables. Association rule mining is used in data mining for various purposes, such as market basket analysis, product recommendation, and website navigation analysis.

- **Sequential pattern mining:**

Sequential pattern mining is a data mining technique used to discover patterns in sequential data, such as time series or transactional data. The goal is to identify frequent patterns or sequences of events that occur in the data. Sequential pattern mining is used in data mining for various applications such as web log analysis, customer behavior analysis, and DNA sequence analysis.

- **Outlier detection:**

Outlier detection is a data mining technique used to identify data points that deviate significantly from the normal behavior of the dataset. The goal is to identify anomalies or outliers that may indicate errors, fraud, or unusual behavior. Outlier detection is used in data mining for various purposes, such as fraud detection, network intrusion detection, and medical diagnosis.