

Unit VI-Predictive Analytics

Predictive Analytics Tools

Predictive analytics tools use data to help you predict the future. Instead, it informs you of the probability of various scenarios. Knowing these possibilities might assist you in planning various parts of your business. Predictive analytics is a subset of **data analysis**. Descriptive analytics, which helps you determine what your data represents, is another part of data analytics. Diagnostic analytics identify the root reasons for what has occurred. Prescriptive analytics is more similar to predictive analytics. This provides you with actionable advice for making better selections.

In other words, predictive analytics lies between **data mining**, which searches for patterns, and prescriptive analytics, which instructs you what to do with this knowledge. Below is a list of the most popular Predictive Analytics Tools used in the industry.

- **SAS Advanced Analytics**

SAS is the global leader in analytics, with a plethora of various predictive analytics products offered. The list is so broad that it may be difficult to determine which tool(s) you will require for your specific needs. In addition, the firm does not give upfront pricing, making it difficult to compare prices. Nonetheless, with so many different tools available, chances are SAS offers just what you want.

- **IBM SPSS**

IBM SPSS (Statistical Package for the Social Sciences) is a data modeling and statistics-based analytics program. The software can handle both organized and unstructured data. To meet any security and mobility requirements, this software is offered in the cloud, on-premises, or via hybrid deployment.

- **RapidMiner Studio**

RapidMiner Studio blends data preparation and analysis with unique business implementation. You may use this code optimal application to automate reporting based on time intervals or to have events trigger changes in your visualizations.

Using the platform's 60+ native integrations, you may import your own data sets and export them to other programs. Extensions provide you more functionality, for example, anomaly detection, text processing, and web mining, but they may cost more than the basic membership fee.

Predictive Analytics Techniques

Predictive analytics incorporates a variety of data analysis approaches, including data mining, machine learning, and others. The following are the techniques used in predictive analytics:

- **Decision Trees**

A [decision tree](#) is an analytics methodology based on Machine Learning that uses data mining algorithms to forecast the potential risks and benefits of undertaking certain options. It is a visual chart that resembles an upside-down tree that depicts the prospective result of a decision. When used for analytics, it can solve all forms of classification problems and answer difficult issues.

- **Neural Networks**

[Neural networks](#) are biologically inspired data processing systems that use historical and present data to forecast future values. Their architecture allows them to identify complicated connections buried in data in a way that replicates the pattern detecting systems of the human brain.

They are widely used for image recognition and patient diagnosis and comprise many layers that accept data (input layer), compute predictions (hidden layer), and provide output (output layer) in the form of a single prediction.

- **Text Analytics**

Text Analytics is used when a company wants to anticipate a numerical number. It is built on approaches from statistics, machine learning, and linguistics. It assists in predicting the themes of a document and analyzes words used in the supplied form.

- **Regression Model**

A regression method is crucial for the organization when it comes to estimating a numerical number, such as how long it will take a target audience to return to an airline reservation before purchasing, or how much money someone would spend on vehicle payments over a specific length of time.





