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DEVELOPMENT OF DECISION SUPPORT SYSTEM FOR TIME SERIES ANALYSIS

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Scientific forecasts are based on sound economic theory and statistical methods. Development of decision support system for time series analysis can make forecasting make accurate and credible.

A decision support system (DSS) is a computer-based information system that supports business or organizational decision-making activities, typically resulting in ranking, sorting, or choosing from some alternatives.

DSS can be used in management, operations, and planning levels of an organization and help people make decisions on issues that may change and are difficult to specify beforehand – i.e. unstructured and semi-structured decision problems. DSS can be fully computerized, human-powered and combine the features of both.

Time Series is a sequence of well-defined data points measured at consistent time intervals over a period of time. Data collected occasionally does not form a time series. Time series analysis is the use of statistical methods to analyze time series data and obtain meaningful statistics and characteristics about the data.

Historically speaking, time series analysis has existed for many years; e.g. in the field of astronomy it was used to study the movements of planets and the sun in ancient times. Today, it is used in practically every sphere around us – in business, in scientific research and studies.

Time series analysis is aimed at achieving various objectives and, therefore, different tools and models are used. The various types of time series analysis include: descriptive analysis, spectral analysis, forecasting, intervention analysis, explanative analysis.

DSS for time series analysis facilitates understanding the conditions leading to a particular trend in the time series data points and makes it easier to perform forecasting and monitoring the data points by fitting appropriate models to it.

For instance, a financial services provider may decide to predict future a product price movements for its customers. It can use available data to conduct time series analysis and forecast prices for a certain future period.

The biggest advantage of using DSS for time series analysis is that it can be used to understand the past as well as predict the future.