

ABSTRACT

Forecasting is one of the important tools in business environment because it assists in decision-making of strategic planning and controlling activities. Good planning and controlling procedure would lead to successful business. There are two categories of forecasting techniques; namely qualitative and quantitative. Qualitative technique is more towards judgemental forecasting and usually used when data is limited. While quantitative technique is based on statistical concepts and requires large amount of data in order to formulate the mathematical models. This technique can be classified into projective and causal technique. The projective technique (or univariate modelling) just involve one variable while the causal technique (or econometric modelling) suitable for multi-variables. Since forecasting involves uncertainty, several methods need to be executed on one set of time series data in order to produce accurate forecast. Hence, usually in practice forecaster need to use several softwares to obtain the forecast values. If this practice can be transformed into algorithm (well-defined rules for solving a problem) and then the algorithm can be transformed into a computer program, less time will be needed to compute the forecast values where in business world time is money. In this study, we focused on algorithm development for univariate forecasting techniques only and will expand towards econometric modelling in the future. Two set of simulated data (yearly and non-yearly) and several univariate forecasting techniques (i.e. Moving Average, Decomposition, Exponential Smoothing, Time Series Regressions and ARIMA) were used. The algorithm was developed in JAVA using up to date forecasting process such as data partition, several error measures and rolling process. Successfully, the results of the algorithm tally with the results of SPSS and Excel. This automatic forecasting will not just benefit forecaster but also end users who do not have in depth knowledge about forecasting techniques.