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**STATISTICAL ANALYSIS ON THE EFFECT OF GLOBAL
WARMING PHENOMINON IN COLOMBO AND
ANURADHAPURA DISTRICTS**

A PORJECT REPORT PRESENTED BY

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STATISTICAL ANALYSIS ON THE EFFECT OF GLOBAL WARMING PHENOMINON IN COLOMBO AND ANURADHAPURA DISTRICTS

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Many scientists now believe that the addition of greenhouse gases from human or manmade sources is throwing our atmosphere and the natural greenhouse effect out of balance. It would appear that the atmosphere is trapping too much heat and causing the Earth to heat up. In this study, average temperature, rainfall, Humidity and Wind speed data in Colombo, Anuradhapura districts in Sri Lanka were analyzed. So as to check whether there are any possible patterns, trends that comply with the global warming effect. In order to predict future values, Statistical models were fitted and tested using multivariate time series analysis techniques by using the ITSM statistical package. These models were used to compare the results with other researchers.

Average temperature, Rainfall, Humidity and wind speed data collected by the Dept. of Meteorology, Colombo were used for the study. We have used monthly data pertaining to the period 1986-2000 for the model fitting purpose. The remaining three years (36 values) were used for model validation. First the non-stationary time series was converted to a stationary series by using difference. The cross correlation graphs were checked to confirm the stationary condition. Then we used Burg algorithm to the mean corrected data to estimate the parameters of the autoregressive model (VAR). The order of the model was decided by the minimum AICC. The residual auto-and cross-correlation graphs were checked. These fitted models were validated and used to forecast the Temperature, Rainfall, Humidity and Wind speed of Colombo and Anuradhapura Districts up to year 2010.