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GIS APPLICATION FOR WEATHER ANALYSIS AND FORECASTING

A PROJECT REPORT PRESENTED BY

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With the natures' threat of seemingly increasing natural disasters, the need of early warning and forecasting systems for weather is apparent. Even though information systems are used extensively in other countries for weather forecasting, in Sri Lanka such systems are in very limited use and not available for public. One reason for this is weather forecasting is an extremely computational intensive task which requires dedicated hardware systems and has to deal with large datasets.

The report presents a system to solve this problem. This document provides a thorough description of "GIS Application for Weather Analysis & Forecasting" which is a simplified software tool that can be used for weather forecasting and analyzing. The main objective of this project is to develop a Weather Analysis and Forecasting System, which is specifically tailored to the requirements of Sri Lanka. The most significant feature of this system is that it can be run on an average PC. This is possible due to the implementation of low computational intensive statistical weather prediction methods. In order to perform statistical predictions the system will be backed by a database system which houses all of the data needed by the application including past weather data for years.

System will utilize these data to identify various weather patterns and trends, which are then transformed into the predictions, based on statistical forecasting model. All the output weather parameters and the predictions will be represented graphically, making the application clearer, more precise and understandable even to a non-subject oriented person, thus making it more user friendly over the numerical representations. Moreover a web based extension for the system will also be developed for the final version, thus propagating the benefits of the system to the public. This web based

application will automatically update the forecasts and other related information generated by the system, which enables users to access over the internet and view location specific weather data. With this, the proposed system will be much more useful for the community and will help to raise the public awareness of weather and related information.