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|  | **What I Did**  This research project had two separate data collection procedures. The first part of the project was to predict what the weather in the upcoming El Niño would be. To make this prediction, I acquired and used a software program called CliMoMan, which is produce by Brian Lindow and the Lawrence Livermore National Laboratory. The CliMoMan software allows the user to view and adjust many different meteorological variables on a global map. The adjustment that the user makes in the climate will ultimately have an effect on the weather that will be produced. After all adjustments are made, the user specifies how long he or she would like their simulation to run, in number of days. The information is then sent via FTP to the NES, National Education Supercomputer. The NES then runs the simulation, putting all the variable into play, and giving and output which consists of a satellite image type map that represents weather patterns with certain color schemes. These animations resemble those that are used on national weather programs to show temperature, precipitation, etc. The type of map received can be specified before the original file is uploaded; file types ranging from precipitaion and temperature maps to windiness and ground wetness. All of the maps received are animations with the same number of frames as the number of days of simulation designated. All of these files can be viewed with a movie program that comes with the CliMoMan software. [(All of the CliMoMan software and components, as well as tutorial files on how to run simulations can be found at this link.)](http://nebbs.llnl.gov/climoman/climoman.html)  To conduct the experiment, I ran two separate simulations on the NES. The first simulation was that of a normal winter weather pattern. The adjustment to the simulation was on surface temperature. During a normal season, most of the Pacific Ocean�s temperature is cool on the east and very warm in the west. I created pools of these temperatures in the correct pacific locations, and ran a simulation for sixty days. The second simulation was nearly identical to the first. The only difference was that of the ocean and land surface temperatures. This simulation was to show the patterns of El Niño. The pool of warm water in the west was set to a cooler temperature, while the water along the California coast, as well as that of Central and South America was warmed significantly. This simulation was run for the same length of time, and with the same weather situations asked for. The tests run were as follows: precipitation, cloudiness, windiness, temperature, and ground wetness.  These steps concluded this portion of the experiment, with the exception of comparing the data set animations of each situation to see if there was a significant difference between what is normally happening and what may happen.  The second part of the experiment was to compare the predicted values with the actual values, and see if they were similar or different. Over the course of five months, I collected rainfall amounts in a rain gauge. The readings were taken daily and placed into a data table. I then went to the city water department and received information containing the average yearly and monthly rainfall level of the past, giving me a base to compare my collected data to.  To see the data and results of each experiment, please follow the designated links. |

*This Web Site is Best viewed with 256 or more colors.*

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