

Ecology Explorers Online Data Analysis

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Choose a Subject

Form a Question

View Data

	east parking lot	Pond
N	20	19
Median	1.0	2.0
UpperQuartile	2.0	5.0
LowerQuartile	1.0	1.0
Mean	1.6	2.7
StandardDeviation	0.8	2.0
Variance	0.7	4.0
Mode	n/a	n/a
Range	2.0	6.0
Min	1.0	1.0
Max	3.0	7.0

The application lets students develop hypotheses, questions and predictions based on the available data. Simple statistical procedures and two types of graphs are offered to test the hypothesis. A bar graph and a dot-plot / box and whisker series along with concepts of central tendency, median, mean and quartile were chosen to comply with 6th grade Arizona Department of Education Math standard requirements.

Ecology Explorers is a CAP LTER educational program for Kindergarten through 12th grade students. Protocols developed by CAP scientists are employed by the students for data collection in their schools. One goal of this project was to provide appropriate data analysis tools that allow students and teachers access to their data while providing tools to teach required concepts using graphs and statistics in an online environment. The second goal of this project was to accomplish this by using background technology developed for scientific data access applications and a design that provides extensibility to the use of scientific datasets collected by CAP researchers for their research.

Analyze Data

Powered By Xylopia

The technology for this web application is rather complex in that it employs web services and is based on a standardized internet messaging system through which the front-end user interface (the web pages that the user sees) sends requests to a background system for querying, analyzing and graphing data (a series of data processing services that the user doesn't see) in a JavaBeans/JSP interface. The database queries are managed by Xylopia, a series of web services built for the retrieval and analysis of data. This Ecology Explorers site is the pilot project for Xylopia. This decoupled design enables us to use the same back end technology for advanced data access applications as well as this guided inquiry. The significant advantage to this system is that the text, questions and databases are all set with a series of configuration files. No code writing or compilation is required to expand the application. More datasets will be added to the Ecology Explorers Online Data Analysis through configuration files without needing to change either the interface or the back-end services. These files contain the text prompts for the web pages and define the connection between the science questions and data queries need to address them.

