Abstract
Using the collaborative forecasts of a community of amateur meteorologists, The Weather Market harnesses the expertise of each individual to build more accurate weather projections. Visitors to the site can predict the temperature, wind speed, and precipitation for hundreds of locations across the country. Each individual’s forecasts are compared to the actual weather, and points are awarded for accuracy. A weighted average of all the forecasts for a particular location is presented as the “market” forecast.

Technology

ASP.NET 2.0
The Weather Market uses several advanced ASP.NET features to deliver a scalable and visually appealing web application. Master Pages define a common look to each page and caching is used to efficiently deliver content.

SQL Server 2005
SQL Server powers the back-end database that manages the data accumulated from users and the National Weather Service. Over fifty stored procedures are used in The Weather Market to process user and forecast data.

Asynchronous JavaScript + XML
Ajax makes it possible to present requested information to the user without reloading the entire web page. Search results and forecasts summaries are displayed asynchronously, making the site more interactive and efficient.

RSS and XML
Each weather station is accompanied by an RSS feed containing a three day forecast for the station as well as the current conditions. Current conditions in the form of XML from the National Weather Service are parsed and loaded into the database.

How It Works

User selects a city and date
There are over 1500 weather stations for which forecasts can be made. Forecasts can be made up to 10 days in advance.

User makes a forecast
Forecasts can be made for high/low temperature, max/avg wind speed, precipitation and conditions. Either U.S. customary units or SI units can be used.

Weighted average computed
The weighted average of forecasts based off each user’s total points is calculated to generate the overall forecast that is presented to visitors.

Points calculated
Each user’s forecast is compared to the actual recorded weather and assigned points based off accuracy. Long range forecasts are awarded more points.