Demo #1: Product Brochure for Traffic Monitoring System

The Traffic Monitoring system is comprised of 2 independent subsystems that share a database containing historical traffic and weather data.

Data Collection subsystem:

Features

This subsystem consists of weather and traffic collection scripts and is run by a timer at 30 minute intervals. Weather conditions for various locations within the greater NYC area are stored in the database. Traffic conditions for a 100 radius around the greater NYC area are also stored in the database. Traffic conditions are discarded if they already exist in the database or the existing database records are updated if new information is available.

System Requirements

Server: MySQL database, Cron daemon, PERL5 with DBD, XML and LWP CPAN packages.

Traffic Map subsystem:

Features

This subsystem provides a front-end to the user and offers 2 services: "Traffic Within Area" and "Traffic Along Route". Traffic and weather conditions are queried from the database based on the user's criteria that includes addresses, radius, time of day, type of day, weather and minimum traffic severity. A geo-coding service is utilized to convert physical addresses and route calculations to proper coordinates. Statistical analysis is displayed along with an interactive map containing markers for locations of historical traffic conditions. Map markers are encoded by color and size based on the mean and dispersion within the sample set of the criteria.
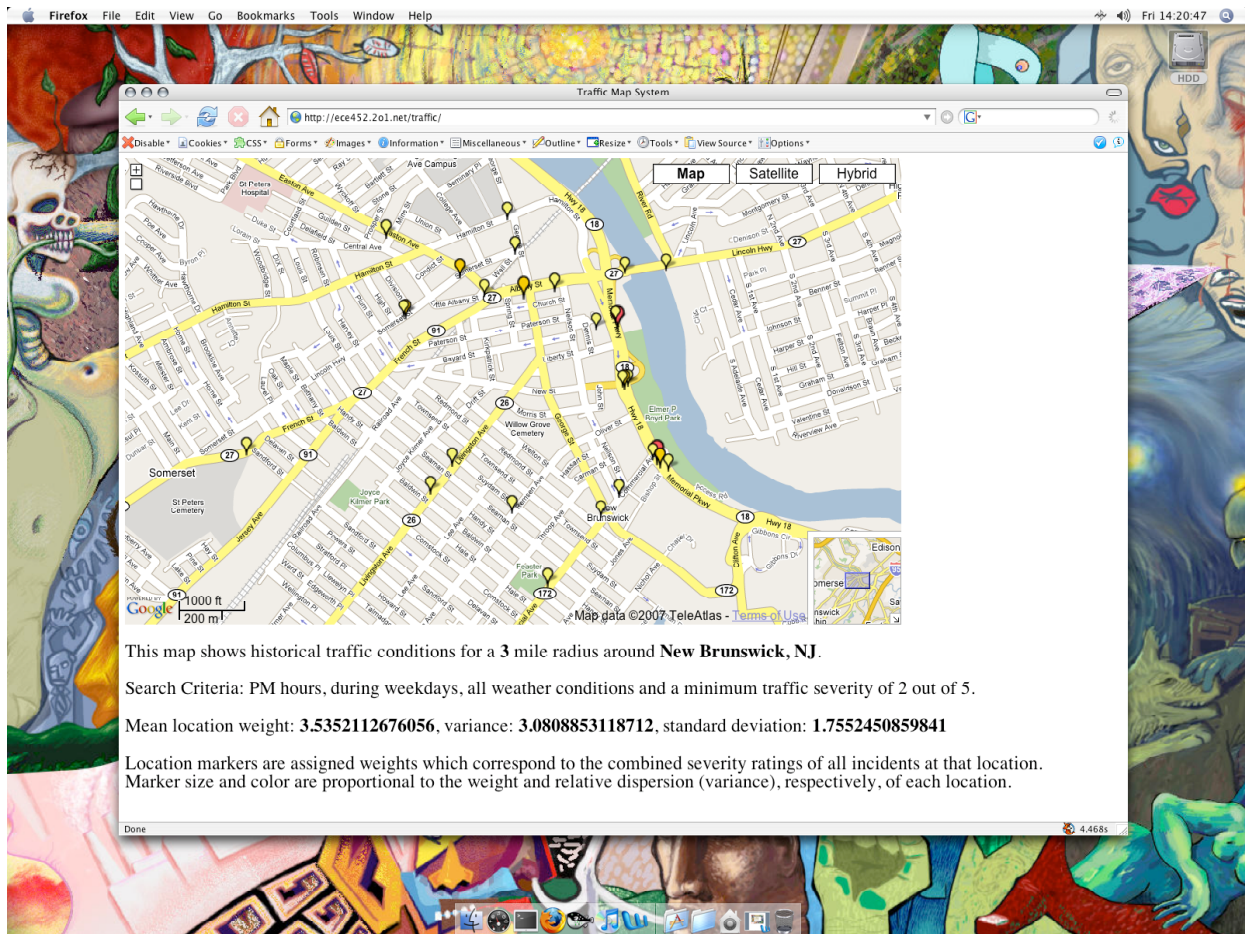
System Requirements

Server: MySQL database, Apache web server, PHP5 with MDB2 PEAR package, 10MB memory per instance

Client: Google Maps compatible web browser with Javascript enabled, screen resolution of at least "1024x768", minimum bandwidth of 56Kbps.

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This map shows historical traffic conditions for a **3** mile radius around **New Brunswick, NJ**.

Search Criteria: PM hours, during weekdays, all weather conditions and a minimum traffic severity of 2 out of 5.

Mean location weight: **3.5352112676056**, variance: **3.0808853118712**, standard deviation: **1.7552450859841**

Location markers are assigned weights which correspond to the combined severity ratings of all incidents at that location. Marker size and color are proportional to the weight and relative dispersion (variance), respectively, of each location.

Screenshot of the Traffic Map System: "Traffic Within Area"

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