Traffic Monitoring Project

Group #13
Xuan Li
Chih-Ting Cho
Ting-Chieh Huang
Jonathan Hong
Jan Racoma
Kevin Cundey

Software Engineering 14:332:452
Individual Contributions

https://sites.google.com/site/452trafficmonitoring/home

http://www.jracoma.com/trafficmonitor/

Xuan Li

- Slides Preparation
- Project Management:
    - organizing subgroup meetings
    - coordinating activities
- User Documentation

Chih-Ting Cho

- Slides Preparation
- Brochure preparation
- User documentation

Ting-Chieh Huang

- Slides preparations
    - informativeness and general appearance of the slide
- Project Management:
    - organizing subgroup meetings
    - system evaluation with external users.
- User documentation

Jonathan Hong

- Designing database tables and maintaining the database
    - Organized the traffic data MySQL database
    - Wrote script to delete unwanted records that contained traffic information of non-essential roadways that is now a function, isHighway() to filter incoming incidents
- Program code writing
    - Wrote TrafficDataTest.php file in order to view the traffic data in a organized and tabulated format
    - Wrote a function that gets the coordinates of a zone in our coverage area (coverage area is split into 100 zones)
- Brochure preparation
- Slides preparation
- Researched the Google Maps API, specifically how to obtain directions and display them next to the map

Jan Racoma

- Setup project website to organize deadlines and documents
- Website setup and initial database schema design/implementation
- Traffic and weather parsing
    - Wrote scripts to interface with MapQuest API/Wunderground to collect data and

scheduled scripts to run hourly using cPanel GUI
    - Parsed XML files and then inserted information into their respective MySQL tables
- Main Web Interface
    - Implemented built with bootstrap to meet our needs: HTML, CSS, PHP, JavaScript
    - Implemented forms and input checks for requesting directions
    - Integrated Google Maps API to display the interactive map, retrieve directions, display directions on map, and provide step-by-step directions for main and alternate directions
    - Debugging to ensure all checks and processing functioned properly
    - Researched methods to determine if incidents fall into a route for use with historical data
- Technical Documentation

Kevin Cundey

- Helped in solution discussions
- Inputs for design specifications

Unit Testing

There was no code written specifically for Unit Testing. The primary test of Get Directions was to verify whether the user entered starting and destination locations are within our coverage areas. The following code shows the location/address checking.

```
$("#getDirections").submit(function(event) {
	var address = document.getElementById('gstartingLocation').value;
	event.preventDefault();

	var check = 0;

	$.when($.when(getAddress(address, "#estartingLocation")).then(inCoverageArea).then(function(results) {
		if (results[0] == true) {
			address = document.getElementById('gdestinationLocation').value;

			$.when(getAddress(address, "#edestinationLocation")).then(inCoverageArea).then(function(results) {
				if (results[0] == true) {
					calcRoute();
				} else {
					$(results[1]).show();
				}
			});
		} else {
			$(results[1]).show();

			$.when(getAddress(address, "#edestinationLocation")).then(inCoverageArea).then(function(results1) {
				if (results1[0] == false) {
					$(results1[1]).show();
				}
			});
		}
	}));
});
```

Integration Testing

For Demo 1, our main focus was the Get Directions portion of our program (Use Case 1). We have completed the majority of this use case and will just need to integrate the traffic data into our program. We have yet to implement the alerts and gas prices portion of our system (Use Case 2, 3, & 8); therefore, integration testing would not be applicable yet.