**Bonus Report:** By: Vijaya Kumar & Sina Kashuk

**Bonus Point Task I**: Allow users to specify some query criteria (e.g. buffer size and aoi ID) in your web interface. You might need to use the dynamic map configuration in PHP in this case

The idea is to allow user for specifying buffer size, District name, and aoi ID in the web interface. For achieving this goal, three php files were made for three inquiries of buffer size, community district name, and aoi ID. These php files are containing dynamic layers for the map so that by changing the input in html file, so depending on the query each of these three php file is called. To implement this task three main steps are taken and the algorithm is described as following:

1. In the Html file, the user interface for input was define by using Rang for buffer, ComboBox for Community Districts, and Input text box with the submission button for aoi ID.

2. Based on the change in any of these three queries the value of the layer (The php file) and the variable (buffer size, or district name or aoi ID) are stored in http. These http is updated right after changing any values by using different JavaScript features such as *onmouseup* and *onclick*. The http address is then acquired and stored in html file. This http is contained with the layer name and variable which is then used for changing the PHP url so that the PHP file with its variable can be called (e.g. “http://134.74.146.40/~kas14/p1/mapscripts/L1.php?aoiD=50).

3. The php file is using the http variable (eg. aoiD=50) by utilizing $\_GET['aoiID']. At the end, this value is used to creat a dynamic layer for the output map.

**Bonus Point Task II**: Using different styles for point (aoi), polyline (hw), polygon (cd, sd and cg) for the results of query 1, 2 and 3.

The task was to add different styling feature to the Map Layers. Map Layers consists of various types of format such as point, line, Polygon and different area symbols. A map is an abstract representation that makes use of point, line and area symbols.

Query 1 was to represent all Area of interest's tuples on a Map. The geometric representation of a tuple of aoi is a point. To represent the point a vector polygon style with no size was used, which is represented by a small v-shape. There are two ways of representing a point, 1) Eclipse(Circle) and 2) Vector. For my representation I have used a combination of Vector and eclipse.

Query 2 In this query line geometry type was used to display the data. The line has a width and a color parameter. If no color is specified, the line will not be rendered. If no width is specified, a thin line which is one unit (pixel) wide) will be rendered.

The *LINECAP*, *LINEJOIN* and *LINEJOINMAXSIZE* parameters are used to specify how line ends and corners are to be rendered.

The highway lines which have more than two routes are represented by red color.

Query 3 - In this query Queens Community district were displayed. The geometric type for Community district is polygon. Each community districts were distinguished with a red outline color and were filled with yellow color.