Abstract
Blight is a sociological phenomenon in which a viewed area is noted to have disinvestment and a visible downturn by its observers. This can result in decreased property values, increased crime rate, increased rates of abandonment, and greatly reduce the desirability and quality of life in an area.

Given the extremely negative potential impact blight can have on a community, the City of Dallas has asked our team to construct a tool that will help predict the presence of blight in an area given certain factors. Using this tool, the City of Dallas hopes to combat blight, stop its spread, and overall improve the quality of life for its citizens.

Results
We developed a web tool for this project, currently hosted on the UT Dallas servers. The tool allows a user to select a district from one of Dallas’s 14 council districts and enter values for blight data points. Each data point consists of a name, percentage, and weight. The percentage is a whole number between 0 and 100 that represents the percent of buildings or population in a given area that meets the criteria for the given data point. The weight is the statistical weight of the data point. Since we were not able to generate a custom model for Dallas, we left the weights as user changeable inputs for further flexibility and provided defaults from a very similar effort done in Columbus, Ohio as a starting point.

After submitting the values, the chosen district is colored in the map to the right and the final percent of blight is displayed below the buttons. Green is for 0 to 25 percent, yellow for 25 to 50 percent, orange for 50 to 75 percent, and red for 75 to 100 percent. The higher the final percent, the more blight is present in the district given the provided data points and values, and thus the worse the result.

User Interface:
- HTML and CSS were used to construct the bulk of the page.
- JavaScript allows input validation, addition of new data points, and a value reset.

Model:
- JavaScript uses input values to calculate the total percent of blight for the given district.
- Each weight is multiplied by its matching percentage and all the products are then added together for the final result.
- Result is displayed and the correct map image is loaded to the right.

The end result is a highly flexible tool that will serve as a starting point as Dallas continues its blight initiative.

Impact
The primary impact of this project will be an increased quality of life.

With the improved knowledge of blight that this tool provides, the City of Dallas can better shape policy to respond to the spread of blight. Improving policies will reduce the spread of blight by improving service levels to blighted areas and addressing other problems that different areas of the city face.

Metric
We handed out a total of 24 surveys that graded 4 criteria on a scale of 1 to 5 with 1 being poor and 5 being excellent. The average results were as follows:

Visual Appeal: 3.66 (good)  
Ease of Navigation: 3.33 (good)
Understandability: 3.33 (good)  
Overall Usefulness: 3.83 (good)

Summary
Our team worked with the City of Dallas to develop a blight prediction tool. The purpose of this tool is to predict the likelihood of an area developing blight, given certain data about current and past conditions in that area. The tool is publicly available, and is currently being hosted on UTD servers at http://utdallas.edu/~wjs130130/blightTest/blight.html.

We spent the first half of the semester researching blight in Dallas and other large cities, to determine what data sets would make good predictors. Although there was insufficient data available to create a model specifically for Dallas, we were able to modify a model that was successful at predicting blight in other cities and incorporate it into our tool. We also made the tool as flexible as possible, so that the model can be easily modified if new data becomes available for Dallas.

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