**2.2 Implementation documentation. Provide a concise, well-organized documentation of what you actually did for your solution. You may want to use tables or bulleted lists to describe the components of your solution and their role in the overall task. In any case, you should provide a textual description of the elements so it is clear what you have done, why it was included, how it is intended to be used in the task. Screen captures may be helpful in illustrating what you have done.**

The steps of my program are as follows:

* As user starts macro by clicking the “Get Info” box, a form is initialized
* The user form allows the user to input a city and select a state from a drop down box, the user can then select “Search” or “Cancel”
* Selecting “Search” initiates a series of web queries according to data input from the user form; a first web query uses the input city and state to search a specific website that returns the 15 closest cities to the input city; these city names are returned to the spreadsheet and stored as variables. Screen updating is also turned off as the search is initiated.
* A web query is then ran for each of the 16 cities (the input city and its 15 closest neighbors) on the Yahoo! Neighborhoods website which gives basic demographic, weather, job, politics, home and education data. This data is returned to the spreadsheet and formatted into the row corresponding with the city name.

The program usually takes a few minutes to run as 17 web queries are run in total. The main tasks of the program were figuring out how to take the input (city and state) and retrieve from the web the desired data; and being able to format that data in such a way that it consistently shows clean, accurate, and easy-to-read results. Particular attention was paid in the design of the user interface as to ensure simple, easy, and intuitive use.

**2.3 Discussion of learning and conceptual difficulties encountered. Let me know what you learned by going through this project. If there are elements you wanted to include but could not get to work, discuss these in this section. Please be sure that you have tried to solve the problem, including asking the professor for assistance, before giving up.**

This project proved to be slightly easy and extremely difficult at the same time. With a little luck, the seemingly difficult task of retrieving all the desired data from the web actually turned out to be easier than I had anticipated. Additional things I wanted to retrieve proved to be much more difficult.

In retrieving the web data, I think I stumbled upon the perfect sites for data retrieval from within Excel. The first was “travelmath.com” which listed the 15 closest cities to an input city. I was lucky in the fact that the url was extremely easy to manipulate for different cities and the 15 cities were always displayed in a neat table that was easily imported into Excel. I also thought myself fortunate to find Yahoo! Neighborhoods which provided significant data for almost any city; again this had a URL that was extremely easy to manipulate and data that was consistent in importing. I had anticipated this part of the project being the most difficult, but it turned out to not be too bad.

Additional things I had thought of working into the project were importing a map showing dots representing the imported cities and querying additional cities for more information. I quickly found out that, at least to my knowledge and skill, it isn’t possible to import pictures into Excel. I was saddened to run into this wall because I feel like this would have added a lot to this project. The second obstacle was my desire to query multiple sites for additional information on each city. This ended up being left out of the project because the web query process for 16 cities already became fairly lengthy. To add even just one more site to query for each city would greatly increase the time required to wait, not to mention the increased probability of Excel crashing and not finishing the program.