Nearest Neighbor Assignment
SA405, Fall 2018

To be completed and uploaded to Google Drive by 2200 on Wednesday Nov 8, 2017

Download the Excel file `student_start_nearestneighbor.xlsm` from Google Drive. You will find some starter code and helpful comments in the file. As always, you should change the comments so that they make sense for your code.

Code the nearest neighbor heuristic in Visual Basic as a macro in this spreadsheet. You can assume all of the distances are integers. Your code should be linked to the button `Run NN` that is already in the spreadsheet for both instances of the problem. If you write your code correctly, you will only need one version of the code that can be linked to the two buttons (one for each instance). Your code should run when someone clicks the `Run NN` button on either instance of the problem. Your code must return the total length of the tour and the cities that make up the tour. These answers should be displayed in the spreadsheet in the yellow highlighted areas.

Your code will have to use *arrays*, which generically refer to vectors, matrices, and other higher dimensional objects. More interestingly, you should use *dynamically* dimensioned arrays. To do this in excel VBA, you should use the syntax as specified in the following example:

```
'this VB fragment declares a vector and a matrix
'and then dynamically dimensions them based on
'data read from the excel sheet
Dim n as Integer
Dim somevector() as Integer
Dim somematrix() as Integer

'read in the n from the C4 cell
n = Range("C4")

'now ReDim the arrays
ReDim somevector(1 To n) as Integer
ReDim somematrix(1 To n, 1 To n) as integer

'now somevector is an n dimensional vector
'and somematrix is an n by n matrix.
```