

The problem is to move through a matrix where each cell is weighted. Movement starts at any row in the first column of the matrix. Movement progresses by moving one column forward and either moving to the same row or up and down a row. Weights are accumulated from each cell traversed and must exit matrix on the right most column with a weight of 50 or less. Matrix may vary from 1x5 to 10 x 100.

This is looping through a multi-dimensional array summing as one goes. All possible routes must be traversed as there is no ordering of the weights. The route with its weight must be saved and then the route with the minimal weight returned. This could be done dynamically as the routes are traversed or accumulated and then tested.

I accumulated the routes and also traversed them row always looking for the minimally weighted route during each traverse. Thus I had to test whether the route had been traversed before (this is the reason for the function ValidStep) and the need to store the routes.

Another aspect is the uploading of a file with a matrix and testing the validity of the file.

I decided to attach this to my web site so that I did not have to deal with publication of a windows application. Also I can add improvement without requiring a redistribution.

Things not accomplished -

1. Permitting the user to enter the row x columns for an auto created matrix
2. More validation on the uploaded file.
3. Fancy error reporting
4. Showing the route through the matrix using a change in the background color.