/\* ====================================

\* Global functions

\*=====================================

\*/

#include "StdAfx.h"

#include <vector>

bool interpolate(std::vector<double> & vList, double dSeek, double & dResult)

/\* The vector has to include x and y data stored as [ x1 y1 x2 y2 ... ]

Note that vector is a one dimensional array.

This function searches for x(n) <= dSeek < x(n+1) and calculates an

interpolated y value corresponding to dSeek. Y(dSeek)

The y value is stored in the variable pointed at by dResult.

Returns false if datapoint is out of range.

\*/

{

unsigned ii=0;

unsigned nEnd = vList.size()/2\*2;

while ( ii<nEnd && vList[ii]<dSeek )

ii+=2;

if (ii == 0)

return false;

else if (ii >= nEnd)

return false;

else

dResult = vList[ii-1] + (vList[ii-1]-vList[ii+1])/(vList[ii-2]-vList[ii]) \* (dSeek - vList[ii-2]);

return true;

}