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/*-----*
 * File Name: ComputeStatsOnRows.c                               *
 * Creation: ER, 01/17/05                                       *
 * Purpose: Programming Example                                 *
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 *                                                             *
 * Modification Log:                                           *
 *-----*/

#include <Origin.h>

////////////////////////////////////
// This example shows how to get part of a dataset and then compute statistics on
// rows with the data
//
// NOTE: It is assumed that a worksheet with data is active.
//

void coompute stats on rows()
{
    // Declare worksheet and check validity
    Worksheet wks = Project.ActiveLayer();
    if( !wks ) return;

    // Construct data range rows from 5 to 10 for all columns
    DataRange dr;
    int r1 = 4, c1 = 0, r2 = 9, c2 = -1;
    dr.Add("X", wks, r1, c1, r2, c2); // Range name shoule be make sense, like X, Y, Z

    // Get data from the specified rows
    matrix mData;
    DWORD dwRules = DRR BY ROWS | DRR GET MISSING | DRR NO FACTORS | DRR NO WEIGHTS;
    int nDataIndex = 0;
    int nn = dr.GetData(dwRules, nDataIndex, NULL, NULL, NULL, NULL, &mData);
    if(nn < 0)
    {
        out_str("Failed to GetData from data range");
        return;
    }

    // Compute statistics on rows for the data in mData
    double dMean, dSD, dSem, dLCL, dUCL, dVariance, dSDx2;
    if(OE_NOERROR == ocmath_row_desc_stats_ex(mData.GetNumRows(), mData.GetNumCols(),
        mData, &dMean, &dSD, &dSem, NULL, NULL, NULL, NULL, &dLCL, &dUCL,
        &dVariance, NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL,
        NULL, NULL, NULL, &dSDx2) )
    {
        printf("Mean = %lf\n", dMean);
        printf("SD = %lf\n", dSD);
        printf("Sem = %lf\n", dSem);
        printf("LCL = %lf\n", dLCL);
        printf("UCL = %lf\n", dUCL);
        printf("Variance = %lf\n", dVariance);
        printf("SDx2 = %lf\n", dSDx2);
    }
}
////////////////////////////////////

```