

CoCoALib - Feature #826

Sparse matrices

26 Nov 2015 15:27 - John Abbott

Status:	New	Start date:	26 Nov 2015
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	Data Structures	Estimated time:	0.00 hour
Target version:	CoCoALib-1.0	Spent time:	0.50 hour
Description			
Mario now thinks he wants sparse matrices.			
We need a clear description of the requirements.			

History

#1 - 02 Dec 2015 18:24 - John Abbott

I had a quick look on Wikipedia for information about sparse matrices. There they distinguished between representations which are convenient for input, and representations which are convenient for computing (presumably matrix*matrix products).

The main representations for computing are "compressed row storage" and "compressed column storage"; one is just the transpose of the other. Here is a quick summary of "compressed row storage". The repr comprises 3 lists/arrays/vectors:

- VAL: array of non-zero values in the matrix
- COL: array of the col indexes of those values
- ROW1: array of first indexes into VAL, k-th entry is index of 1st entry in VAL which comes from row k