

## CoCoALib - Feature #1602

### Sparse matrix (SparseMat)

02 Jul 2021 17:26 - John Abbott

<b>Status:</b>	New	<b>Start date:</b>	02 Jul 2021
<b>Priority:</b>	Low	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	0%
<b>Category:</b>	New Function	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	CoCoALib-0.99900	<b>Spent time:</b>	0.20 hour
<b>Description</b>			
Create new type for representing sparse matrices.			
Then check all code which by default creates a DenseMat (because there has been no other choice so far)			
<b>Related issues:</b>			
Related to CoCoALib - Feature #1598: RingHom: implement $\phi(X)$ as $\text{apply}(\phi, \dots)$		<b>Closed</b>	<b>10 Jun 2021</b>

### History

#### #1 - 19 Jul 2021 14:17 - John Abbott

- Related to Feature #1598: RingHom: implement  $\phi(X)$  as  $\text{apply}(\phi, X)$  also for  $X$  vector and matrix added

#### #2 - 30 Sep 2021 14:13 - John Abbott

Do we want to handle structured matrices like sparse matrices? e.g. Toeplitz matrices are specified by just a few elements.

Some sparse matrices may also have some "special structure":

e.g. a multiplication-by-indet matrix modulo a 0-dim ideal probably contains many columns which are all 0 except for one entry which is 1.

Perhaps start with KISS?

#### #3 - 15 Feb 2024 22:42 - John Abbott

- Target version changed from CoCoALib-0.99850 to CoCoALib-0.99900