

## CoCoA-5 - Feature #487

### ScalarProduct accepts MatrixRow?

21 Mar 2014 10:25 - John Abbott

<b>Status:</b>	New	<b>Start date:</b>	21 Mar 2014
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	0%
<b>Category:</b>	CoCoA-4 function to be added	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	CoCoA-5.?.?	<b>Spent time:</b>	0.50 hour
<b>Description</b>			
Yesterday I saw some old C4 code. In it the author had a call of the form <code>ScalarProduct(M[I],L)</code> where M is a matrix and L a list. Presumably it worked in C4; but it does not in C5 because <code>ScalarProduct</code> expects two lists.			
An easy workaround is to write <code>ScalarProduct(GetRow(M,I),L)</code> ; not as compact or elegant as the C4 version, but its meaning is clear. I believe the function <code>GetRow</code> actually copies the entries, so there is a little wasted effort...			
Should we extend <code>ScalarProduct</code> to accept <code>MATRIXROW</code> ?			
<b>Related issues:</b>			
Related to CoCoA-5 - Support #1031: <code>ScalarProduct</code> : exact defn and manual page		<b>New</b>	<b>17 Mar 2017</b>
Related to CoCoA-5 - Feature #1296: <code>Matrixrow</code> -functions		<b>In Progress</b>	<b>16 Jun 2019</b>

### History

#### #1 - 21 Mar 2014 10:31 - John Abbott

I'm rather undecided about this.

I suppose KISS would say not to widen the arg types accepted by `ScalarProduct`, at least no until we observe that it is a frequent paradigm.

One "irritating" aspect is that the obvious C5 implementation would probably work with `MATRIXROW` args. Actually, the only obstacle to it working is that `len` throws when given a `MATRIXROW`.

Opinions?

#### #2 - 21 Mar 2014 10:39 - Anna Maria Bigatti

- Target version set to `CoCoA-5.1.0 Easter14`

I like defining (mathematically) matrix multiplication by scalar products, so I'm in favour of adding it.

`GetRow` would makes copies, so can get quite costly in a loop.

I don't think it is trivial to implement, probably "not hard".

#### #3 - 09 Apr 2014 14:55 - John Abbott

- Target version changed from `CoCoA-5.1.0 Easter14` to `CoCoA-5.1.1 Seoul14`

#### #4 - 22 Jul 2014 09:32 - Anna Maria Bigatti

- Target version changed from `CoCoA-5.1.1 Seoul14` to `CoCoA-5.?.?`

I think it is possible, but tedious work. Is it worth the effort?

**#5 - 17 Mar 2017 11:01 - John Abbott**

- Related to Support #1031: *ScalarProduct*: exact defn and manual page added

**#6 - 18 Jun 2019 15:17 - Anna Maria Bigatti**

- Related to Feature #1296: *Matrixrow*-functions added

**#7 - 18 Jun 2019 15:22 - Anna Maria Bigatti**

Anna Maria Bigatti wrote:

I like defining (mathematically) matrix multiplication by scalar products, so I'm in favour of adding it. **GetRow** would makes copies, so can get quite costly in a loop.

I don't think it is trivial to implement, probably "not hard".

I changed my mind: **MATRIXROW** is a very dodgy type.