

## CoCoA-5 - Slug #1068

### PolyRing constructor: NewOrdvArith computed twice

17 May 2017 10:35 - Anna Maria Bigatti

<b>Status:</b>	In Progress	<b>Start date:</b>	17 May 2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	10%
<b>Category:</b>	enhancing/improving	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	CoCoA-5.?.?	<b>Spent time:</b>	0.85 hour
<b>Description</b>			
We never considered that a slow ring constructor could be a problem, but may be. In particular this bit of code:			
<pre>RingDistrMPolyInlFpPPImpl::RingDistrMPolyInlFpPPImpl(const ring&amp; R, const std::vector&lt;symbol&gt;&amp; I ndetNames, const PPOrdering&amp; ord):     myCoeffRingValue(R),     myInlineCoeffImplValue(ConvertTo&lt;long&gt;(characteristic(R))),     myPPMValue(NewPPMonoidOv(IndetNames, ord)),     myOrdvArith(NewOrdvArith(ord)),</pre>			
computes NewOrdvArith twice, the first one in NewPPMonoidOv.			
<b>Related issues:</b>			
Related to CoCoALib - Slug #1057: Slug: Polynomial ring constructor slow with ...		<b>In Progress</b>	<b>04 May 2017</b>
Related to CoCoALib - Bug #1641: gcd does not recognize univariate input		<b>Closed</b>	<b>20 Dec 2021</b>

## History

### #1 - 17 May 2017 10:36 - Anna Maria Bigatti

- Related to Slug #1057: Slug: Polynomial ring constructor slow with (big) matrix ordering added

### #2 - 17 May 2017 11:19 - Anna Maria Bigatti

- Status changed from New to In Progress

- % Done changed from 0 to 10

It would be handy to get the OrdvArith from a PPMonoid (if possible).

This could also be used internally by the GBasis-like operations, which recreate their own rings with the same ordering as the ring of the input. (this might speed up GroebnerFan in the case of easy but many GBs)

### #3 - 17 May 2017 11:33 - Anna Maria Bigatti

Anna Maria Bigatti wrote:

It would be handy to get the OrdvArith from a PPMonoid (if possible).

If John allows me ;-) I implement it, and test if this solves all ring constructor slugs.

#### #4 - 17 May 2017 11:40 - John Abbott

OK, Anna; take a look.  
I'm a bit busy with other things right now.

#### #5 - 21 Mar 2024 11:54 - Anna Maria Bigatti

- Related to Bug #1641: gcd does not recognize univariate input added

#### #6 - 21 Mar 2024 11:55 - Anna Maria Bigatti

I added some verbosity

```
/**/ SetVerbosityLevel(99);  
/**/ P := NewPolyRingWeights(QQ, "x,y,z", RowMat([1,2,3]));  
[D1,L99,NewOrdvArith(ord)] -- called --  
[D2,L99,MatrixOrdering32bitImpl ctor] -- called --  
[D1,L99,PPMonoidOvImpl(syms,ord)] -- called --  
[D1,L99,NewOrdvArith(ord)] -- called --  
[D2,L99,MatrixOrdering32bitImpl ctor] -- called --
```