

CoCoALib - Feature #223

Automatic mapping of RingElems

08 Aug 2012 21:02 - John Abbott

Status:	Closed	Start date:	08 Aug 2012
Priority:	Normal	Due date:	
Assignee:	Anna Maria Bigatti	% Done:	100%
Category:	New Function	Estimated time:	0.00 hour
Target version:	CoCoALib-0.99534 Seoul14	Spent time:	1.35 hour
Description			
Bruns has "complained" about the lack of automatic mapping of RingElem values from a coeff ring to a poly ring.			
Automatic mapping of RingElem values is being considered for CoCoA-5, so why forbid it in CoCoALib?			
One possible reason is speed of execution. Still it seems unfair/unreasonable to make the programmer's life difficult just because there are some circumstances where "careless programming" might lead to a measurable reduction in performance.			
Note that not having automatic mapping in CoCoALib will make it harder to port CoCoA-5 programs into CoCoA-5 -- perhaps even impossible in some cases?			
AMB March 2013: added RingElem(R, rhs)			
Related issues:			
Related to CoCoA-5 - Feature #7: Automatic mapping between (some) rings		Resolved	20 Oct 2011
Related to CoCoALib - Feature #221: Better RingElems		Closed	08 Aug 2012
Related to CoCoALib - Feature #253: W.Bruns's wish list		Closed	04 Oct 2012
Related to CoCoA-5 - Design #637: Undesirable consequence of automatic mappin...		Closed	23 Oct 2014
Related to CoCoALib - Feature #645: Automatic mapping of RingElem: user selec...		Rejected	04 Nov 2014

History

#1 - 26 Sep 2012 13:11 - Christof Soeger

To make the conversion at least easier a constructor like in [#7](#) note-4 would be helpful: **RingElem(R, x)**

If an change of the ring of RingElem by assigning a new value will be allowed as proposed in issues [#221](#) also changing the ring of an existing RingElem by mapping it into a given ring without creating a new element could be usefull.

#2 - 08 Mar 2013 16:36 - Anna Maria Bigatti

- Category set to New Function
- Status changed from New to Resolved
- Assignee set to Anna Maria Bigatti
- Target version set to CoCoA-5.0.9
- % Done changed from 0 to 70

I added **RingElem(R, rhs)** with rsh a RingElem in a ring S such that there exists a CanonicalHom S->R (both to CoCoALib and CoCoA-5, but no documentation, manual, test, cvs,.. yet!)

```
/**/ Use R;
/**/ K := NewFractionField(R);
/**/ 1/RingElem(K, x^2-x);
1/(x^2 -x)
```

For those able to read between the bits: it's a giant leap for mankind!

#3 - 15 Mar 2013 15:36 - Anna Maria Bigatti

- *Status changed from Resolved to Feedback*
- *% Done changed from 70 to 90*

#4 - 15 Mar 2013 15:59 - Anna Maria Bigatti

cvS-ed

#5 - 21 Mar 2014 11:26 - Anna Maria Bigatti

- *Target version changed from CoCoA-5.0.9 to CoCoALib-0.99534 Seoul14*

#6 - 10 Jul 2014 13:38 - John Abbott

- *Status changed from Feedback to Closed*
- *% Done changed from 90 to 100*

Closing this issue, but leaving [#7](#) open. This is fine as far as it goes.