CoCoA-5 - Design #656

eval: in which ring should the result be?

20 Jan 2015 20:19 - John Abbott

Status:	New	**Start date:**	20 Jan 2015
Priority:	Normal	**Due date:**	
Assignee:		**% Done:**	0%
Category:	enhancing/improving	**Estimated time:**	0.00 hour
Target version:	CoCoA-5.?.?	**Spent time:**	0.40 hour

Description

Currently eval(f,[xval,yval]) wants xval and yval to be in the same ring as f; and the result is then naturally in that ring too.

It would be quite natural to have evaluation produce a value in the coeff ring (if xval and yval are in the coeff ring, or integers, or rationals).

Do we want this? Do we want both possibilities?

History

#1 - 20 Jan 2015 20:24 - John Abbott

Currently eval is written in CoCoA-5, and just checks args before calling subst.

I find the version which returns a result in the coeff ring to be more "natural". Unfortunately I cannot simply call LC(eval(...)) because that fails when the result is 0 (and it is less readable than straight eval(...)).

We could make eval accept evaluation coords either in the poly ring or in the coeff ring; and the result would then be in the same ring as the coords. What to do if all the coords are INT or RAT? I suggest putting the result in the coeff ring. This would be backward compatible, but it is a nuisance to document (and might be confusing for users?).

#2 - 20 Jan 2015 20:25 - John Abbott

We could make obsolescent the version which wants coords in the poly ring -- so it still works but produces a warning message. I wonder how much code would be affected by that.

Or we could have two fns with similar names: one for coords and result in coeff ring, and the other which works as the current fn.

What do you think?