

CoCoALib - Feature #1645

Implement monic0(f) for the case monic(0)?

17 Jan 2022 08:44 - Anna Maria Bigatti

Status:	In Progress	Start date:	17 Jan 2022
Priority:	Normal	Due date:	
Assignee:		% Done:	10%
Category:	Improving	Estimated time:	0.00 hour
Target version:	CoCoALib-0.99900	Spent time:	0.80 hour
Description			
<pre>/**/ monic(RingElem(P,0));</pre> <p>throws the error "Non-zero RingElem required". That's OK. But the manual for monic says "if "F" is zero, it returns just zero."</p> <p>Should we implement monic0 as well (analogue of preimage0) returning 0 for convenience? Think of the case ideal([ monic(f)   f in phi(L) ]): here 0 might occur without being a real problem.</p>			
Related issues:			
Related to CoCoALib - Design #1647: Suppress zero from ideal generators? Det...			Closed 20 Jan 2022

History

#1 - 17 Jan 2022 08:49 - John Abbott

Right now I would be inclined to change the manual.  
I am not yet convinced that monic0 is a good idea. Can you convince me?

#2 - 17 Jan 2022 09:44 - Anna Maria Bigatti

John Abbott wrote:

Right now I would be inclined to change the manual.  
I am not yet convinced that monic0 is a good idea. Can you convince me?

I would keep monic as is, changing the manual.

I would add the function monic0 for the case in the description:

```
[ monic(f) | f in phi(L) ]
```

Quite often monic is used just for beautifying the output, and not for the mathematical properties. In such cases it is a nuisance to uglify the code.

We have encountered similar dilemmas for other functions: the "0", could be a handy way of unifying the look and behaviour of these functions.

### #3 - 20 Jan 2022 19:58 - John Abbott

- Status changed from New to In Progress

Let's try to make a list of possible "0" functions, and their expected behaviour if given 0 as argument.

- $\text{monic0}(f)$  would give  $f$
- $\text{deg0}(f)$  would give 0 or -1?
- $\text{LC0}(f)$  would give 0 of coeffring?
- $\text{LT0}(f)$  would give 1 (PP) maybe ??
- $\text{LF0}(f)$  would give 0

I do still feel uneasy about this proposal: all of the above fns "feel unclear".

### #4 - 21 Jan 2022 10:38 - John Abbott

- Related to Design #1647: Suppress zero from ideal generators? Detect 1 and simplify generators? added

### #5 - 21 Jan 2022 11:19 - John Abbott

Anna says it is OK to have these "dirty" functions because their names are strange.  
She suggests that they each have separate manual pages (so as not to spoil the "pure" pages of the "good" functions).

### #6 - 05 Feb 2022 20:05 - John Abbott

Since I am hoping to make a release quite quickly, I prefer to postpone this issue to the next release (so we have time to discuss it a bit more).

### #7 - 07 Feb 2022 16:26 - Anna Maria Bigatti

- Target version changed from CoCoALib-0.99800 to CoCoALib-0.99850

John Abbott wrote:

Since I am hoping to make a release quite quickly, I prefer to postpone this issue to the next release (so we have time to discuss it a bit more).

ok, postponed

### #8 - 31 May 2022 15:29 - John Abbott

If the purpose is to beautify some polys then we could also consider **prim** (see issue [#1580](#) and [#1668](#)).

### #9 - 16 Feb 2024 09:38 - John Abbott

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