

CoCoALib - Slug #1359

gcd: low degree but big coeffs can be slow

30 Oct 2019 22:21 - John Abbott

Status:	New	Start date:	30 Oct 2019
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	Improving	Estimated time:	0.00 hour
Target version:	CoCoALib-1.0	Spent time:	0.20 hour
Description			
gcd of low degree polys with big coeffs can be too slow.			
<code>gcd(x+1, x+1+factorial(100000)); --> takes about 1.7s</code>			
Replacing 1000000 by 200000 increases the time to about 3.3s. And going up to 500000 take about 7.4s.			
Related issues:			
Related to CoCoALib - Bug #1113: gcd crashes (Floating point exception)		Closed	27 Oct 2017
Related to CoCoALib - Slug #129: Better GCD		New	15 Apr 2012

History

#1 - 30 Oct 2019 22:23 - John Abbott

If the number of steps in the PRS is very small then a direct method may well be better than the modular method.

The CRT modular method may have to compute modulo a million or more primes, and then reconstruction also becomes costly.

#2 - 30 Oct 2019 22:23 - John Abbott

- Related to Bug #1113: gcd crashes (Floating point exception) added

#3 - 30 Oct 2019 22:34 - John Abbott

- Related to Slug #129: Better GCD added