

CoCoA-5 - Support #242

CoCoA-5 Projects for students (e.g. crediti F and tesi)

28 Sep 2012 16:18 - Anna Maria Bigatti

Status:	In Progress	Start date:	28 Sep 2012
Priority:	Normal	Due date:	
Assignee:		% Done:	10%
Category:	CoCoA-5 function: new	Estimated time:	0.00 hour
Target version:	CoCoA-5.4.2	Spent time:	0.40 hour
Description			
Here we list all ideas for possible student projects. Some are already in redmine, so we just add them as "related issues"			
Related issues:			
Related to CoCoA-5 - Support #177: CoCoAManual: General part of the documenta...		In Progress	01 Jun 2012
Related to CoCoALib - Support #76: keywords in documentation		New	23 Dec 2011
Related to CoCoALib - Support #75: Documentation review by Caleo		Closed	23 Dec 2011
Related to CoCoA-5 - Feature #13: (short) manual for emacs interface		New	28 Oct 2011
Related to CoCoA-5 - Bug #27: CoCoA-5 Manual		Closed	09 Nov 2011
Related to CoCoALib - Feature #11: Bareiss algorithm		Closed	20 Oct 2011
Related to CoCoALib - Feature #40: Squarefree factorization - Alessio d'Ali`		Closed	30 Nov 2011
Related to CoCoA-5 - Support #198: Appunti per (eventuale) tesi triennale Inf...		New	29 Jun 2012
Related to CoCoALib - Feature #246: Approx QIR		New	01 Oct 2012
Related to CoCoALib - Feature #257: Transcribe C4 code for GCD in QQ[x]		New	09 Oct 2012
Related to CoCoALib - Feature #222: Printing polynomials - spaces between terms		In Progress	08 Aug 2012
Related to CoCoA-5 - Feature #78: Elim ordering and matrix ordering in CoCoA-5		In Progress	16 Jan 2012
Related to CoCoALib - Support #59: List of all functions in CoCoALib		New	07 Dec 2011
Related to CoCoALib - Feature #258: Multivariate lifting		New	09 Oct 2012
Related to CoCoALib - Feature #259: Squarefree(?) GCD-free basis		Closed	09 Oct 2012
Related to CoCoA-5 - Feature #273: Package for Polynomial Algebra Homomorphisms		Closed	12 Nov 2012
Related to CoCoA-5 - Feature #276: TeXmacs interface		New	21 Nov 2012
Related to CoCoALib - Support #438: Polynomial multiplication (product of Rin...		In Progress	08 Feb 2014
Related to CoCoALib - Feature #440: Port RealRoots to C++		New	11 Feb 2014
Related to CoCoALib - Feature #442: Eigenvectors		New	19 Feb 2014
Related to CoCoALib - Support #497: Clang: automatic bug finding		New	27 Mar 2014
Related to CoCoA-5 - Feature #352: Should SourceRegion echo the "region"?		Closed	21 May 2013
Related to CoCoALib - Feature #1001: CoCoALib: ideas for student projects		In Progress	19 Jan 2017
Related to CoCoALib - Feature #587: port to CoCoALib: Homomorphism pkg (ker, ...		Closed	14 Jul 2014
Related to CoCoA-5 - Support #1333: Typevectors		Closed	08 Oct 2019
Related to CoCoA-5 - Feature #368: port SmithNormalForm (CoCoA-4)package to C...		In Progress	11 Jun 2013
Related to CoCoALib - Feature #800: PPMonoidSparse: impl of sparse PPs		Closed	09 Nov 2015
Related to CoCoALib - Feature #1667: GBasis over ZZ: port to CoCoALib		In Progress	16 Feb 2022
Related to CoCoALib - Feature #1668: Generalize prim		New	16 Feb 2022
Related to CoCoALib - Feature #664: Impl small non-prime finite fields (using...		Resolved	11 Feb 2015
Related to CoCoA-5 - Feature #1415: thmproving package		In Progress	13 Feb 2020
Related to CoCoA-5 - Feature #1671: Refactor C++ impl in OnlineHelp		New	03 Mar 2022
Related to CoCoA-5 - Feature #1701: Preliminary packages		In Progress	17 Oct 2022

History

#1 - 02 Oct 2012 14:04 - John Abbott

Several CoCoALib test files need to be improved, and probably some more new ones written. This could also prove a useful test of the documentation.

For instance, I know that **QBGenerator** needs a proper test.
(20140208) Bruns asks whether computation times for f^*g and g^*f are equal; if not, which is better (based on NumTerms?)

#2 - 19 Jan 2017 18:10 - John Abbott

- Related to Feature #1001: CoCoALib: ideas for student projects added

#3 - 28 Apr 2017 11:13 - Anna Maria Bigatti

- Project changed from CoCoA to CoCoALib

- Category set to Various

- Target version set to CoCoALib-1.0

#4 - 20 Dec 2017 08:45 - Anna Maria Bigatti

2022-04-25: COCOALIB PROJECTS REMAIN IN ISSUE #1001

I recall from another equivalent issue (and close it <https://cocoa.dima.unige.it/redmine/issues/1001#note-1>)

JAA

Here are some ideas:

- write a fn IsCyclotomic for univariate polynomials (based on paper by Bradford+Davenport)
- write a fn IsDegenerate for univariate polynomials (based on paper by Cipu, Diouf, Mignotte) -- JAA does not like the fn name
- **[done]** write code for subresultant (and perhaps some variants?)
- write a simple impl of NLSAT (paper by), perhaps just for the case of 2 indets?
- write a simple impl of Gao-Volny-Wang
- translate QIR code into C++/CoCoALib
- write better impls for certain rings homs (e.g. for verifying correctness of "implicit")
- a fn which produces the simplest non-neg integer matrix giving the same term ordering (perhaps with given GradingDim)

#5 - 20 Dec 2017 09:37 - Anna Maria Bigatti

- Related to Feature #587: port to CoCoALib: Homomorphism pkg (ker, IsInjective, IsSurjective..) added

#6 - 10 Oct 2019 17:25 - Anna Maria Bigatti

- Related to Support #1333: Typevectors added

#7 - 19 Mar 2021 14:56 - John Abbott

- Related to Feature #368: port SmithNormalForm (CoCoA-4)package to CoCoA-5 added

#8 - 09 Feb 2022 20:13 - John Abbott

- Related to Feature #800: PPMonoidSparse: impl of sparse PPs added

#9 - 16 Feb 2022 20:32 - John Abbott

- Related to Feature #1667: GBasis over ZZ: port to CoCoALib added

#10 - 16 Feb 2022 20:43 - John Abbott

- Related to Feature #1668: Generalize prim added

#11 - 17 Feb 2022 19:33 - John Abbott

- Related to Feature #664: Impl small non-prime finite fields (using logs) added

#12 - 18 Feb 2022 16:51 - Anna Maria Bigatti

- Related to Feature #1415: *thmproving* package added

#13 - 18 Feb 2022 16:55 - John Abbott

- Status changed from *New* to *In Progress*

- % Done changed from 0 to 10

This issue and [#1001](#) cover similar ground.

Suggestion: **split the 2 issues into: one for CoCoA-5, and one for CoCoALib.**

#14 - 18 Feb 2022 16:58 - John Abbott

- Subject changed from *Projects for students: crediti F and tesi* to *CoCoA-5 Projects for students (e.g. crediti F and tesi)*

#15 - 18 Feb 2022 16:59 - Anna Maria Bigatti

- Project changed from *CoCoALib* to *CoCoA-5*

- Category changed from *Various* to *CoCoA-5 function: new*

- Target version changed from *CoCoALib-1.0* to *CoCoA-5.4.2*

#16 - 03 Mar 2022 14:55 - John Abbott

- Related to Feature #1671: *Refactor C++ impl in OnlineHelp* added

#17 - 21 Oct 2022 15:51 - Anna Maria Bigatti

- Related to Feature #1701: *Preliminary packages* added

#18 - 21 Oct 2022 15:53 - Anna Maria Bigatti

Added Feature [#1701](#): could be a good source of ideas to be refined, tested, documented, developed.