

CoCoALib

		2025-2				2025-3				2025-4				2025-5				2025-6				2025-7									
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
CoCoA		CoCoALib																													
CoCoALib																															
MinPolyQuot not documented																															
New function IsInSymbols																															
CoCoALib releases on redmine																															
CoCoALib - CoCoALib-0.99850																															
Release CoCoALib 0.99850																															
MinGens gives non minimal gens (...)																															
MinGens could be faster																															
printing rings																															
Implement FGLM																															
New functions in CoCoALib using (...)																															
CoCoALib - CoCoALib-0.99880																															
Matrix equation solving; linear (...)																															
Improve threadsafety																															
Matrix equation solving: LinKer																															
Printing polynomials - spaces between (...)																															
Play with GIT																															
Error: ERR::NotNonZero instead (...)																															
Elim(vector<long>) as PPOrderingCtor																															
Syzygy for modules: non-homogeneous (...)																															
Error codes: use same code for (...)																															
LongRange: in which file should (...)																															
Impl small non-prime finite fields (...)																															
DistrMPolyClean does not use MemPool (...)																															
MatrixOrderingMod32749Impl: test (...)																															
Update normaliz interface?																															
Better errors: give supplementary (...)																															

<p>SLUG: elimination</p> <p>Test whether a symbol is in a ring</p> <p>DivMask: extend interface?</p> <p>Implement "elim" in CoCoALib</p> <p>Cleanup MinPoly code</p> <p>implicit, ImplicitHypersurface: (...)</p> <p>Redesign ideals</p> <p>LinSolve for matrices over FFp</p> <p>strict enum types: C++11 extension</p> <p>New function: cardinality of finite (...)</p> <p>FlagManager for bool/bool3 flags</p> <p>MachineInt or long for args which (...)</p> <p>Separate configure scripts for (...)</p> <p>MachineInt: change semantics?</p> <p>IsRadical for ideal?</p> <p>New function: multiplicity and (...)</p> <p>Improve saturate</p> <p>Slug: Polynomial ring constructor (...)</p> <p>Revive code for SelfSaturating (...)</p> <p>SLUG: factorization of x^{9999}</p> <p>Separate install script for CoCoALib?</p> <p>Canonical homomorphism for (some) (...)</p> <p>interval arithmetic</p> <p>Clean up SparsePolyOps-MonomialIdeals</p> <p>Naming convention mistakes</p> <p>IsZeroDet: new fn</p> <p>New function: SubmoduleOfGBasis</p> <p>Frobby version number</p> <p>factor SEGV -- too large characteristic</p> <p>C++14: Use type auto where appropriate</p> <p>New function: MinPoly for pseudo-zero-dimensional (...)</p> <p>Ideals with trivial GBasis</p> <p>Tidy CoCoALib test directory</p> <p>Determinant & Inverse of matrix (...)</p>	
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<p>Factor of multivariate sometimes (...)</p> <p>exgcd over integers (ZZ)</p> <p>PrimaryDecomposition: a interesting/pathological (...)</p> <p>C++14: use the new for loop syntax (...)</p> <p>ideal ctor where given gens are (...)</p> <p>TmpLDP uses srand and time</p> <p>RingID counter increased inside (...)</p> <p>Type ideal for ZZ[x[1..n]]</p> <p>GlobalManager: create SignalWatcher (...)</p> <p>Oddly slow GBasis computation (slow (...)</p> <p>Make class RingElemVector?</p> <p>RadicalZeroDim with extra parameter (...)</p> <p>Remove flag IhaveGBasisValue?</p> <p>DenseMatrix: use template impl (...)</p> <p>HNF: Hermite Normal Form</p> <p>Start using C++14 "move" capability</p> <p>What is the difference between (...)</p> <p>mul(MAT,MAT,MAT)</p> <p>Simple syntax for making a quotient (...)</p> <p>Doc for normaliz fns</p> <p>Documentation for SparsePolyOps?</p> <p>Better test for univariate-ness (...)</p> <p>Unexpectedly slow example with (...)</p> <p>gfan does not "deinitialize"</p> <p>Default ctor for rings</p> <p>Doc for module term orderings</p> <p>matrix.H and MatrixView.H</p> <p>ker_H needs care</p> <p>Use noexcept</p> <p>DynamicBitset missing arg checks</p> <p>cmp for machine integers</p> <p>Detect updated versions of external (...)</p> <p>Clean time.C</p> <p>Documentation for PrimaryDecomposition</p>	
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<p>Unused variables, params, data (...)</p> <p>NR for polys with coeffs in PID</p> <p>interreduce: make monic if over (...)</p> <p>rref slower than expected (maybe) (...)</p> <p>Improve CertifyNotPower</p> <p>txt2tags: problem with filenames (...)</p> <p>geobucket: documentation</p> <p>Compilation on Windows: problems (...)</p> <p>GBasis over ZZ: port to CoCoALib</p> <p>Generalize prim</p> <p>Review File subtree hierarchy</p> <p>Build also dynamic/shared library (...)</p> <p>Review examples</p> <p>release-source script: use shell (...)</p> <p>Unsigned long for indexes (& sizes?)</p> <p>IsIrred in ZZ[x,y]</p> <p>RingBase::mySwap needed?</p> <p>Shell scripts: Shebang line, etc</p> <p>Threadsafety, multithreading: optional (...)</p> <p>Symlink directory for external (...)</p> <p>ProgressReporter: prepare for new (...)</p> <p>Development releases?</p> <p>ProductBigInt (also ProductBigRat???)</p> <p>DivAlg in CoCoALib</p> <p>Cruft in ExtLibs-Normaliz.C</p> <p>ApplySPRCodomain: relax power/exponent (...)</p> <p>FactorINT: funny order</p> <p>Clean TmpGOperations, and remove (...)</p> <p>Homogenization of an ideal with (...)</p> <p>Suggestion about Graded polynomial (...)</p> <p>Implement Truncated GBases for (...)</p> <p>Implement GBMill (aka Groebner (...)</p> <p>July 2023</p> <p>IdealOfPoints: allow duplicate (...)</p>	
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deg(f) is slow if f is long gcd(f,f) is slow Verbosity messages: avoid printing (...) VerificationLevel: just 3? Low, (...) Homogenizer Make CoCoALib test file for radical Iterator design: compatible with (...) CpuTimeOut: arg of type ErrorContext? Use ErrorContext instead of string (...) myFinalizeGBasis ("Final clean (...) Computing in sub polyring Conversion from SmallPrime to UNSIGNED (...) BuildInfo Error codes: "Not..." for "blah (...) New constructor for PolyRing with (...) Make ex-syz.C Check include guards Documentation: indexXX.html should (...) OSCAR/MaRDI JSON interface CoCoALib - CoCoALib-0.99900 Redmine Administration Design new errors using inheritance Which names to use? Intersection/saturation (...) New function: IdealWithIncrementalGBasis(l, (...) Documentation: translation table New class: exterior algebra ideal: does const ourGetPtr really (...) Create PolyOps-RingElem? Move to C++14 (skipping C++11) subresultant HilbertDriven Buchberger Algorithm Filling matrix row/col from a vector GFan: port CoCoA_5 functions into (...) Adjoin indets to a poly ring	
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<p>Get indexed indets from a polyring</p> <p>Idea for for loops</p> <p>Extended rationals: PlusInfinity (...)</p> <p>submat of a submat</p> <p>SLUG: Printing PPs with many indets</p> <p>Convenient RingHom pseudo-ctors</p> <p>Factorization in $K(a,b)[x,y]$</p> <p>ElimMat is slow</p> <p>Sparse matrix (SparseMat)</p> <p>Coding guidelines</p> <p>Signal handler not portable?</p> <p>Intersection of Ideals: has GBasis?</p> <p>Implement monic0(f) for the case (...)</p> <p>Add LM to cocoalib ?</p> <p>MachineInt: chase through ULL (...)</p> <p>Documentation: a good model to (...)</p> <p>swap for new classes</p> <p>Random and threadsafe?</p> <p>Suggestion: Add "JumpTo" function (...)</p> <p>Use C++ attributes</p> <p>Finalize design for ideals in CoCoALib</p> <p>Code & doc structure: one-big-file (...)</p> <p>Add flag IhaveHomogGensValue (...)</p> <p>Add function IsHomog3(l)?</p> <p>Add new function for IsInRadical (...)</p> <p>Add a function CleanupGens making (...)</p> <p>Tidying ideal generators (for non-polynomial (...)</p> <p>Improve trivial operations with (...)</p> <p>Use long long (at least sometimes)?</p> <p>Release CoCoALib 0.99900</p> <p>Some tests have become slower</p> <p>Ensure tests do not need too much (...)</p> <p>JSON and UUID</p> <p>CoCoALib - CoCoALib-1.0</p>	
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Sort out RingElem, RefRingElem, (...)
 List of all functions in CoCoALib
 printing polynomials
 keywords in documentation
 Cleanup header for ring classes (...)
 Error Codes
 automatic creation of all function (...)
 Introduce PartialHom
 Ideals of polynomials
 LT over QQ: surprisingly slow
 IdealOfPoints with generic coeffs
 New datastructures directory
 Convert DUPFF code to C++
 Better GCD
 Design problem in ideals
 Convenience ring ctors and homs
 Buchberger-Moeller (parent task)
 Buchberger-Moeller: fast modular (...)
 Buchberger-Moeller: impl via (...)
 Buchberger-Moeller: input conversions
 Makefile dependencies
 RingOf rather than owner? (and (...)
 Iterated CanonicalHom
 GCD normalization (e.g. monic)
 Convert old "task table" into redmine
 IsStdGraded: add for PPOrdering, (...)
 PPWithMask needs checking
 Example for change of coordinates (...)
 HilbertBasis from Normaliz: full-lattice (...)
 Generator for random ring elements
 Documentation for QBGenerator needs (...)
 No test for QBGenerator
 Approx QIR
 Transcribe C4 code for GCD in QQ[x]

<p> Multivariate lifting Move the various <matrix>::mySetEntry (...) Forward declarations Eliminate class RefPPMonoidElem? Store unique copy of FF(p) in GlobalManager Global setting: to use IsProbPrime (...) PrimeField -- new fn? Modules design: brainstorming Compilation on M\$Windows: Visual (...) FreeModule: unique copy? Add doc for ApproxPts2 submodule constructor different (...) C++ nasty surprises Why is DMPI slower than DMPClean? Module homs Missing documentation and tests (...) CoCoAServer: what future, what (...) Resolution/morse: integrate Mario (...) add resolution data type implement algorithm(s) for resolutions PPMonoidElemAlias: redesign PPMonoidElem (...) add myHilbertSeries member field (...) add myJBMill member field to ideal NewFreeModule of dimension 0 Minimal syzygies (optimized implementation) Allow user to give a name to a (...) Error names and error messages (...) Semantics of IsPrintedWithMinus Improve UPoly eval at BigRat for (...) MemPool: order free blocks? Polynomial multiplication (product (...) Port RealRoots to C++ Eigenvectors Which sets of generators in an (...) </p>	
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<p> LinearSimplify: port to CoCoALib Unique copies of rings -- smart (...) Clang: automatic bug finding Documentation: write doc for RingDenseUPolyClean Quick/correct flag for bool3 fns Fn to "flatten" multiple polynomial (...) Make squarefreefactor work in multiple (...) FloatStr uses too much memory Functions to clean up a factorization elim using RingTwinFloat triggers (...) add myResolution member field (...) Reconsider overloaded virtual mem (...) Subrings Temporary file for experimentation FloatApprox for TwinFloat values? Documentation for ReductionCog Allow use of RingElem instead of (...) Split SparsePolyRing.H into two (...) Investigate using cmake for configuration New function for printing with (...) Implement gin (generic initial (...) Problem with template instantiation (...) configure: check all libraries (...) Redesign CRTMill Wikipedia Gaussian integer and rationals (...) Complex twin-floats Shadow CoCoA namespace to help (...) What is test-Dynamic1.C Buchberger-Moeller: add option (...) Unique copies of free modules? Optimized algorithms for implicitization (...) Laurent polynomials Integrate Janet/Pommaret basis (...) </p>	
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factor: multivariate + finite characteristic
 Matrix determinant over multivariate (...)
 Credits to CoCoALib contributors
 Accumulator (like a geobucket)
 MemPool: make it easier to get (...)
 PPMonoid: add fn to check for overflow (...)
 Use DivMask inside QBGenerator
 myAddMul in poly rings
 PolyAlgebraHom (PolyRingHom) evaluate (...)
 Fault tolerant rational reconstruction: (...)
 Remove cruft from test files
 Add more operations between modules (...)
 Example database: Slow ideal equality (...)
 Noncommutative algebra "of solvable" (...)
 Betti numbers, betti diagram
 Extend homomorphism to polynomial (...)
 Addition of sparse (multivariate) (...)
 View PP exponent vector (and order (...)
 Problem with GBasis in tower of (...)
 Investigate using Boost.build instead (...)
 configure: have option to say to (...)
 GlobalManager: initialization compatible (...)
 ExternalLib-CDD: (needed by GFan)
 CoCoALib cone
 PPMonoid with 1 extra "exponent"?
 CRTMill::myAddInfo accept modulus (...)
 Makefile: problem not seeing when (...)
 GroebnerFan/ExternalLib-GFan: improve (...)
 threadsafety: Scott Meyers's advice (...)
 finite fields: global register (...)
 Remove refcounts from RingElem?
 No doc for DistrMPolyInIFpPP
 Clean code for DistrMPolyClean
 SmallFpImpl: make it faster

vector of "indets" in each PPMonoid?
 PPOrdering: use it to compute WDeg?
 Alg Extn by non-zero dim ideal
 FastCmp for degree -- useful?
 PPMonoid pseudo-ctor without explicit (...)
 GenRepr in CoCoALib?
 F5 with 3 args?
 Sparse matrices
 MachineInt: function for checking (...)
 Generalize grading matrix
 UIBC: need include file in RingWeyl.C
 Make Mario's new code threadsafe
 factor is very slow on some simple (...)
 Differential algebra
 SparsePolyIter: make more compatible (...)
 GINV: alex basis
 NewPolyRing: tidy up the many different (...)
 PPMonoidSparse: comparisons are (...)
 IsIrred: correct design?
 SmallFpImpl: different repr for (...)
 bool3: add some logical operations?
 factor: too slow on largish multivariate (...)
 Impl faster multiplication for (...)
 DistrMPolyInIPP::myPushFront and (...)
 IsIrred3: fast 3-way irred test (...)
 myIsEqual, myCmp: direct comparisons (...)
 SmallFpDouble: which impl of InvMod (...)
 External libraries: keep copy of (...)
 Read input from SymbolicData database
 New function: quorem for univariate (...)
 Hilbert Driven GBasis
 Design GBMill
 Fn to read symbol range (SymbolRange)
 Documentation: check layout of (...)

<p>Printing TwinFloat as (rational) (...)</p> <p>Slow NF example</p> <p>Weights in ElimMat?</p> <p>ex-PolyIterator</p> <p>QIR/RealRootRefine: improve behaviour (...)</p> <p>GFan: require version newer than (...)</p> <p>GCD: add special case if args are (...)</p> <p>Poly ring homomorphism to change (...)</p> <p>C++11: Mario's Hilbert scheme code</p> <p>GlobalManager: name of object in (...)</p> <p>RowMat, ColMat with arg an empty (...)</p> <p>New "LF" function which is based (...)</p> <p>JanetBasis gives error indet index (...)</p> <p>GroebnerFan: slow examples</p> <p>Printing ring for ideals (or just (...)</p> <p>GroebnerFan: ERROR: Matrix must (...)</p> <p>Slug: MakeTermOrd (rk calls in (...)</p> <p>invalid pointer in "free"</p> <p>WEB SITE: HTML is not clean!</p> <p>Ctors for exceptions/errors</p> <p>Pseudo-zero-dim ideals</p> <p>Better printing of negative coeffs</p> <p>SqFreeFactor: should it work over (...)</p> <p>Organize better the documentation (...)</p> <p>mySquare and myPowerSmallExp</p> <p>New fn: transform ideal with ring (...)</p> <p>Printing for RingElem</p> <p>Clean up revised RatReconstructByContFrac (...)</p> <p>Upper bound for value of poly in (...)</p> <p>Matrix rank is slow (over QQ)</p> <p>Non-standard DegRevLex (NonStdDegRevLex, (...)</p> <p>New function: Threadsafe RandomLinearForm (...)</p> <p>exgcd; solve Bezout equation</p> <p>Make a poly ring QQ[x,y,z] also (...)</p>	
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<p> Ideal equality Ideal Ops: sort-cuts for trivial (...) Port old "clever" code for matrix (...) Improve RealRoots: compute sqfr (...) Improve RootBound All PPs of given wdeg gcd: low degree but big coeffs (...) RandomUnimodularMat is slow with (...) French students' example with GFan Create two separate radical fns (...) DynamicBitset::lamAll1s Unified Gaussian reduction impl Benchmarks? C++17: notes about updating slimgb: Brickenstein, singular Clean out OLD CODE? CoCoALib - removed/duplicates CoCoALib: ideas for student projects </p>	
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