

## CoCoA-5 - CoCoA-5.?.?

| #  | Priority | Subject   | Assignee           | Updated           | Category                     | % Done | Estimated time |
|--|----------|---|--------------------|-------------------|------------------------------|--------|----------------|
| <b>None (6)</b>                          |          |   |                    |                   |                              |        |                |
| 230                                      | Normal   | More curiously slow code -- squaring a polynomial                 |                    | 04 Apr 2014 15:10 |                              | 0      |                |
| 421                                      | Normal   | Allow user to give a name to a ring (in C5)                       |                    | 18 Jul 2014 15:05 |                              | 10     |                |
| 422                                      | Normal   | Bug or feature for protected name? (Use command)                  |                    | 04 Apr 2014 15:09 |                              | 0      |                |
| 633                                      | Normal   | New operations? ScalarProduct(MODULELEM,LIST), MATRIX * MODULELEM |                    | 17 Mar 2017 10:55 |                              | 0      |                |
| 770                                      | Normal   | CoCoA type "cone"   |                    | 22 May 2017 14:12 |                              | 0      |                |
| 453                                      | Normal   | Automatic conversion from INT (or RAT) to RINGELEM                |                    | 02 Sep 2014 11:15 |                              | 20     |                |
| <b>Cleaning (6)</b>                      |          |   |                    |                   |                              |        |                |
| 477                                      | Normal   | Eliminate keyword Alias?  |                    | 04 Apr 2014 14:31 | Cleaning                     | 0      |                |
| 480                                      | Normal   | gcd too slow for large degree univariate poly                     |                    | 30 Oct 2019 22:44 | Cleaning                     | 0      |                |
| 491                                      | Normal   | Cleaning: Cruft in CoCoA-5 packages                               |                    | 25 Jul 2018 14:26 | Cleaning                     | 20     |                |
| 989                                      | Normal   | init file obligatory?   |                    | 01 Dec 2016 11:36 | Cleaning                     | 10     |                |
| 1351                                     | Normal   | Clean up package points.cpkg                                      |                    | 25 Oct 2019 13:34 | Cleaning                     | 0      |                |
| 376                                      | Normal   | Hilbert: Redesign hp.cpkg5 and public functions in TmpHilbert.C   | Anna Maria Bigatti | 06 Aug 2020 12:21 | Cleaning                     | 10     |                |
| <b>CoCoA-4 function to be added (10)</b> |          |   |                    |                   |                              |        |                |
| 487                                      | Normal   | ScalarProduct accepts MatrixRow?                                  |                    | 18 Jun 2019 15:22 | CoCoA-4 function to be added | 0      |                |
| 960                                      | Normal   | New function: IdealAndSeparatorsOfPoints                          |                    | 02 Nov 2016 18:06 | CoCoA-4 function to be added | 0      |                |
| 388                                      | High     | port optimized resolutions to CoCoA-5                             | Anna Maria Bigatti | 02 Jul 2014 16:13 | CoCoA-4 function to be added | 0      |                |
| 501                                      | Normal   | Toric: resurrect function TestSet (and find better name for it?)  | Anna Maria Bigatti | 09 Apr 2014 15:53 | CoCoA-4 function to be added | 0      |                |
| 454                                      | Normal   | interpolate   | John Abbott        | 04 Apr 2014 16:24 | CoCoA-4 function to be added | 0      |                |
| 512                                      | Normal   | Resurrect MakeCheck()   | Anna Maria Bigatti | 28 Jul 2014 16:20 | CoCoA-4 function to be added | 0      | 1.0            |
| 412                                      | Normal   | intersection (all lower case)                                     | Anna Maria Bigatti | 28 Jul 2014 17:41 | CoCoA-4 function to be added | 20     | 4.0            |
| 614                                      | Normal   | Add functions based on MayerVietorisTree                          | Anna Maria Bigatti | 04 Sep 2014 14:05 | CoCoA-4 function to be added | 10     | 4.0            |
| 171                                      | High     | Negate LIST, MAT,...  |                    | 04 Apr 2014 16:27 | CoCoA-4 function to be added | 0      | 5.0            |
| 702                                      | Normal   | Add more operations for modules                                   | Anna Maria Bigatti | 15 May 2015 09:05 | CoCoA-4 function to be added | 0      | 5.0            |

## CoCoA-5 function: new (17)

03 May 2024

| #    | Priority | Subject   | Assignee           | Updated           | Category              | % Done | Estimated time |
|------|----------|---|--------------------|-------------------|-----------------------|--------|----------------|
| 235  | Normal   | Add LucasTest to cocoa5?                                      |                    | 04 Apr 2014 16:38 | CoCoA-5 function: new | 0      |                |
| 483  | Normal   | Unique copies of rings in CoCoA-5                             |                    | 04 Apr 2014 16:42 | CoCoA-5 function: new | 0      |                |
| 492  | Normal   | New C5 fn for adjusting the warning level                     |                    | 22 Jul 2014 12:38 | CoCoA-5 function: new | 0      |                |
| 626  | Normal   | Output Betti numbers  |                    | 17 Sep 2014 13:11 | CoCoA-5 function: new | 0      |                |
| 753  | Normal   | New function: LeastDegPolynomial (LDP)                        |                    | 30 Jul 2015 17:29 | CoCoA-5 function: new | 0      |                |
| 451  | Normal   | Port function NewSymbol/NewSymbols to CoCoA-5                 |                    | 09 Nov 2015 15:29 | CoCoA-5 function: new | 10     |                |
| 731  | Normal   | Primary Decomposition in CoCoA-5                              |                    | 02 Oct 2017 13:30 | CoCoA-5 function: new | 10     |                |
| 993  | Normal   | New function: RingQQi(?) extension of QQ with imaginary unit  |                    | 13 Nov 2017 15:05 | CoCoA-5 function: new | 0      |                |
| 1285 | Normal   | New Fn: make a homogeneous list of ringelem                   |                    | 23 May 2019 11:53 | CoCoA-5 function: new | 0      |                |
| 1305 | Normal   | Create a directory  |                    | 02 Sep 2019 16:31 | CoCoA-5 function: new | 10     |                |
| 737  | Low      | Elementary transcendental functions (sin, cos, tan, log, exp) |                    | 20 Mar 2017 09:00 | CoCoA-5 function: new | 50     |                |
| 1107 | Normal   | CoCoA Online: install (using InteractiveShell)                | Anna Maria Bigatti | 16 Oct 2017 16:54 | CoCoA-5 function: new | 10     |                |
| 1153 | Normal   | New function: gin for algebraic extensions                    | Anna Maria Bigatti | 25 Jul 2018 15:36 | CoCoA-5 function: new | 0      |                |
| 504  | Normal   | New operators: += -= *= /=                                    | John Abbott        | 25 Oct 2019 11:55 | CoCoA-5 function: new | 20     |                |
| 964  | Normal   | New function: MakeMultiset?                                   | Anna Maria Bigatti | 25 Jul 2018 15:35 | CoCoA-5 function: new | 0      | 2.0            |
| 980  | Normal   | CoeffSize: function to measure the size of coeffs in a poly   |                    | 28 Nov 2023 22:29 | CoCoA-5 function: new | 20     | 3.0            |
| 274  | Normal   | InputForm for output readable as input                        | Anna Maria Bigatti | 04 Apr 2014 16:43 | CoCoA-5 function: new | 10     | 4.0            |

### EmacsUI (10)

|      |        |   |                    |                   |         |    |     |
|------|--------|---|--------------------|-------------------|---------|----|-----|
| 434  | Normal | Emacs UI: very slow when input file is big (with long lines)          |                    | 09 Apr 2014 15:52 | EmacsUI | 0  |     |
| 148  | Normal | C-c C-p in emacs goes to wrong line                                   |                    | 06 Oct 2022 20:15 | EmacsUI | 20 |     |
| 468  | Low    | Emacs UI: indentation is wrong after ?keyword                         |                    | 17 Apr 2014 18:47 | EmacsUI | 0  |     |
| 653  | Low    | Emacs UI: use "warning colour" for an unmatched */                    |                    | 04 Dec 2014 15:39 | EmacsUI | 0  |     |
| 660  | Low    | Emacs UI: endfunc does not indent the line                            |                    | 04 Mar 2020 22:06 | EmacsUI | 0  |     |
| 663  | Low    | Emacs UI: C-c C-\ copies line cursor is on                            |                    | 04 Feb 2015 13:19 | EmacsUI | 0  |     |
| 1076 | Low    | EmacsUI: interrupt copies line cursor is on to bottom then interrupts |                    | 12 Jun 2017 18:27 | EmacsUI | 0  |     |
| 772  | Low    | Emacs UI: send-region and send-line make sense inside a cpkg5 file?   |                    | 08 Sep 2015 12:49 | EmacsUI | 20 |     |
| 671  | Low    | Emacs UI: swapped splitting   | Anna Maria Bigatti | 09 Mar 2015 13:49 | EmacsUI | 0  |     |
| 424  | Low    | Emacs UI: Name of emacs init file                                     | Anna Maria Bigatti | 22 Jul 2014 11:21 | EmacsUI | 10 | 7.0 |

### enhancing/improving (28)

| #                        | Priority | Subject  | Assignee           | Updated           | Category            | % Done | Estimated time |
|--------------------------|----------|--|--------------------|-------------------|---------------------|--------|----------------|
| 646                      | Normal   | Unique copies of free modules?   |                    | 10 Nov 2014 16:42 | enhancing/improving | 0      |                |
| 655                      | Normal   | MakeSet can be very slow   |                    | 20 Jan 2015 17:12 | enhancing/improving | 0      |                |
| 656                      | Normal   | eval: in which ring should the result be?  |                    | 20 Jan 2015 20:25 | enhancing/improving | 0      |                |
| 862                      | Normal   | append has bad complexity  |                    | 05 Apr 2016 13:40 | enhancing/improving | 0      |                |
| 876                      | Normal   | subst: allowed also for indets in the coeff ring                                 |                    | 07 May 2016 13:59 | enhancing/improving | 0      |                |
| 879                      | Normal   | LOGAR: make CoCoA-5 easier to use  |                    | 09 May 2016 15:30 | enhancing/improving | 0      |                |
| 888                      | Normal   | Escaped newline to allow a long line to be split into several "physical lines"   |                    | 07 Jun 2016 00:26 | enhancing/improving | 0      |                |
| 916                      | Normal   | use command: unhelpful error if you use := instead of ::=                        |                    | 20 Oct 2020 17:50 | enhancing/improving | 0      |                |
| 917                      | Normal   | CallOnGroebnerFanIdeals: better to use an iterator (or a "stream")               |                    | 26 Nov 2016 17:46 | enhancing/improving | 0      |                |
| 941                      | Normal   | Improve coverage of CoCoA-5 tests  |                    | 10 Oct 2016 21:09 | enhancing/improving | 0      |                |
| 984                      | Normal   | GroebnerFanIdeals: order matrices sometimes have "large" entries                 |                    | 22 Nov 2021 20:19 | enhancing/improving | 0      |                |
| 875                      | Normal   | Interpreter is too slow reading a big polynomial                                 |                    | 20 Oct 2020 18:05 | enhancing/improving | 10     |                |
| 1003                     | Normal   | New syntax for creating poly rings?  |                    | 27 Jan 2017 15:54 | enhancing/improving | 10     |                |
| 1025                     | Normal   | Example of slow LEX GBasis computation   |                    | 15 Nov 2017 14:57 | enhancing/improving | 10     |                |
| 1068                     | Normal   | PolyRing constructor: NewOrdvArith computed twice                                |                    | 21 Mar 2024 11:55 | enhancing/improving | 10     |                |
| 1129                     | Normal   | Generic Timeout for CoCoA-5?   |                    | 28 Nov 2017 18:06 | enhancing/improving | 10     |                |
| 1271                     | Normal   | Allow Interruption of printing?  |                    | 17 Apr 2019 10:17 | enhancing/improving | 10     |                |
| 1296                     | Normal   | Matrixrow-functions  |                    | 18 Jun 2019 15:15 | enhancing/improving | 10     |                |
| 657                      | Low      | use command, ring syntax, RingOf   |                    | 20 Jan 2015 20:32 | enhancing/improving | 0      |                |
| 659                      | Low      | Ring ID: separate index values for "system created rings"?                       |                    | 23 Jan 2015 14:11 | enhancing/improving | 0      |                |
| 857                      | Low      | floor, ceil, and NearestInt for RingElem in CoCoA-5?                             |                    | 21 Feb 2019 09:17 | enhancing/improving | 0      |                |
| 1034                     | Low      | Improve error message when args to (infix operator) lsln have incompatible types |                    | 17 Mar 2017 13:19 | enhancing/improving | 0      |                |
| 1275                     | Low      | incr and decr are slow   |                    | 29 Apr 2019 17:53 | enhancing/improving | 0      |                |
| 1291                     | Low      | LinearSimplify: somtimes not optimal   |                    | 27 May 2019 21:17 | enhancing/improving | 0      |                |
| 1722                     | Low      | Daft slug  |                    | 27 Feb 2023 12:57 | enhancing/improving | 20     |                |
| 600                      | Normal   | efficient subalgebras  | Anna Maria Bigatti | 30 Jul 2014 17:29 | enhancing/improving | 0      |                |
| 1138                     | Normal   | Latex: matrix  | Anna Maria Bigatti | 11 Dec 2017 16:45 | enhancing/improving | 0      |                |
| 1116                     | Normal   | Port RowMat, ColMat, MatByRows,... to CoCoA-5                                    | Anna Maria Bigatti | 01 Oct 2019 14:40 | enhancing/improving | 0      | 8.0            |
| <b>External Libs (2)</b> |          |  |                    |                   |                     |        |                |
| 720                      | Normal   | External libs: specifying I/O streams (initialization?)                          |                    | 22 May 2015 14:14 | External Libs       | 0      |                |

| #                               | Priority | Subject   | Assignee           | Updated           | Category             | % Done | Estimated time |
|---------------------------------|----------|---|--------------------|-------------------|----------------------|--------|----------------|
| 712                             | Normal   | External Libs: missing dependencies in Makefiles                              | John Abbott        | 01 Oct 2019 14:31 | External Libs        | 10     |                |
| <b>GUI (11)</b>                 |          |   |                    |                   |                      |        |                |
| 38                              | Normal   | GUI: open file "with C5"  |                    | 09 Apr 2014 15:00 | GUI                  | 0      |                |
| 136                             | Normal   | GUI: Add an edit menu to the top bar (CoCoA GUI on MacOS)                     |                    | 02 Jul 2014 16:56 | GUI                  | 0      |                |
| 276                             | Normal   | TeXmacs interface   |                    | 09 Apr 2014 15:01 | GUI                  | 0      |                |
| 527                             | Normal   | GUI: better name for the graphical interface?                                 |                    | 27 Jul 2015 19:25 | GUI                  | 0      |                |
| 299                             | Low      | GUI: message "running.." (close to output window?)                            |                    | 15 May 2020 10:56 | GUI                  | 0      |                |
| 611                             | Low      | GUI: quitting provokes Imminent Disaster                                      |                    | 28 Feb 2024 21:24 | GUI                  | 0      |                |
| 1093                            | Low      | GUI: bugs and slugs   | John Abbott        | 18 Aug 2022 15:36 | GUI                  | 10     |                |
| 1713                            | Low      | Windows: Qt-Gui does not link correctly                                       | Nico Mexis         | 25 Feb 2024 20:42 | GUI                  | 50     |                |
| 612                             | Low      | The C5 gui does not exit properly when using the exit menu entry              | John Abbott        | 28 Feb 2024 21:20 | GUI                  | 100    | 0.61           |
| 133                             | Normal   | Qt GUI: Make better distinction between input and output in the output window |                    | 12 Mar 2021 09:39 | GUI                  | 0      | 30.0           |
| 198                             | Normal   | Appunti per (eventuale) tesi triennale Informatica: CoCoA GUI                 |                    | 30 Sep 2022 19:05 | GUI                  | 0      | 300.0          |
| <b>Incomplete function (4)</b>  |          |   |                    |                   |                      |        |                |
| 920                             | Normal   | Empty matrix: warning, error, or empty matrix?                                |                    | 08 Sep 2016 11:45 | Incomplete function  | 10     |                |
| 106                             | Normal   | l:f (IDEAL and RINGELEM) -- operator colon                                    | Anna Maria Bigatti | 02 Sep 2014 11:12 | Incomplete function  | 10     | 3.0            |
| 100                             | Normal   | BringIn should map only the indets in its arg                                 |                    | 26 Sep 2022 20:25 | Incomplete function  | 0      | 15.0           |
| 96                              | Normal   | sort is too slow  | John Abbott        | 28 May 2021 20:40 | Incomplete function  | 0      | 15.0           |
| <b>Manual/documentation (9)</b> |          |   |                    |                   |                      |        |                |
| 13                              | Normal   | (short) manual for emacs interface  |                    | 12 Oct 2016 16:56 | Manual/documentation | 0      |                |
| 323                             | Normal   | system variables  |                    | 04 Apr 2014 17:06 | Manual/documentation | 0      |                |
| 677                             | Normal   | Credits to CoCoA-5 contributors   |                    | 15 Nov 2019 15:28 | Manual/documentation | 0      |                |
| 1031                            | Normal   | ScalarProduct: exact defn and manual page                                     |                    | 17 Mar 2017 11:03 | Manual/documentation | 0      |                |
| 1054                            | Normal   | CoCoAManual: improved search, or improved selection of "see also" pages       |                    | 28 Apr 2017 11:42 | Manual/documentation | 0      |                |
| 943                             | Normal   | Managing credits  |                    | 16 May 2017 14:49 | Manual/documentation | 10     |                |
| 1707                            | Normal   | User forum?   |                    | 01 Nov 2022 22:02 | Manual/documentation | 0      |                |
| 1314                            | Normal   | Emacs UI: open manual pages in a separate frame?                              |                    | 27 Sep 2019 17:23 | Manual/documentation | 10     |                |
| 296                             | Normal   | Documentation for Parser/Interpreter  | Anna Maria Bigatti | 09 Apr 2014 17:22 | Manual/documentation | 10     |                |
| <b>Parser/Interpreter (16)</b>  |          |   |                    |                   |                      |        |                |

| #                      | Priority | Subject   | Assignee           | Updated           | Category           | % Done | Estimated time |
|------------------------|----------|---|--------------------|-------------------|--------------------|--------|----------------|
| 95                     | Normal   | Error/warning if fn-proc is neither fn nor proc?                      |                    | 15 Jun 2016 14:13 | Parser/Interpreter | 0      |                |
| 101                    | Normal   | rethrow in Try .. UponError .. EndTry                                 |                    | 23 Oct 2020 10:18 | Parser/Interpreter | 0      |                |
| 363                    | Normal   | Colon operator, 2nd arg   |                    | 09 Apr 2014 15:07 | Parser/Interpreter | 0      |                |
| 375                    | Normal   | allow single function call in "use" : e.g. "Use NewFractionField(R);" |                    | 02 Sep 2014 11:14 | Parser/Interpreter | 0      |                |
| 435                    | Normal   | Assignment to protected variable                                      |                    | 04 Apr 2014 17:05 | Parser/Interpreter | 0      |                |
| 597                    | Normal   | Interpreter.C: remove calls to WrongTypeException                     |                    | 02 Mar 2020 21:45 | Parser/Interpreter | 0      |                |
| 749                    | Normal   | IsDefined does not follow reference to undefined optional param       |                    | 31 Jul 2015 12:08 | Parser/Interpreter | 0      |                |
| 1234                   | Normal   | CoCoA should read unicode   |                    | 01 Oct 2019 14:36 | Parser/Interpreter | 0      |                |
| 183                    | Low      | Template for unaryMinus?  |                    | 25 Jul 2018 17:15 | Parser/Interpreter | 0      |                |
| 669                    | Low      | NUL char in input terminates CoCoA-5                                  |                    | 04 Mar 2020 21:28 | Parser/Interpreter | 0      |                |
| 915                    | Low      | When is a semicolon needed to end a statement/command?                |                    | 28 Feb 2024 21:27 | Parser/Interpreter | 0      |                |
| 928                    | Low      | ciao, exit, quit can be used not only at top level                    |                    | 18 Oct 2021 11:08 | Parser/Interpreter | 0      |                |
| 35                     | Normal   | Optional warnings for fn-proc arity                                   | John Abbott        | 07 Oct 2022 10:56 | Parser/Interpreter | 100    | 0.75           |
| 290                    | Normal   | Which functions are defined in CoCoALibSupplement?                    | Anna Maria Bigatti | 29 Mar 2019 19:23 | Parser/Interpreter | 20     | 2.0            |
| 486                    | Normal   | Warning about variable hiding another -- too zealous                  |                    | 01 Sep 2014 13:55 | Parser/Interpreter | 0      | 20.0           |
| 287                    | Normal   | --fullCoCoALibError prints too much (Try/UponError)                   | Anna Maria Bigatti | 02 Sep 2016 13:54 | Parser/Interpreter | 10     | 35.0           |
| <b>Portability (2)</b> |          |   |                    |                   |                    |        |                |
| 1006                   | Normal   | External dependencies for building                                    |                    | 27 Oct 2021 13:13 | Portability        | 10     |                |
| 629                    | Normal   | Windows-GUI: compilation with MinGW                                   | Anna Maria Bigatti | 19 Mar 2024 22:21 | Portability        | 20     | 10.0           |