

## CoCoA-5 - Support #290

### Which functions are defined in CoCoALibSupplement?

21 Dec 2012 15:25 - Anna Maria Bigatti

|   |                    |                        |                    |
|---|--------------------|------------------------|--------------------|
| <b>Status:</b>  | In Progress        | <b>Start date:</b>     | 21 Dec 2012        |
| <b>Priority:</b>  | Normal             | <b>Due date:</b>       |                    |
| <b>Assignee:</b>  | Anna Maria Bigatti | <b>% Done:</b>         | 20%                |
| <b>Category:</b>  | Parser/Interpreter | <b>Estimated time:</b> | 2.00 hours         |
| <b>Target version:</b>  | CoCoA-5.?.?        | <b>Spent time:</b>     | 1.25 hour          |
| <b>Description</b>  |                    |                        |                    |
| Note for AMBigatti: explain the philosophy of what goes where.          |                    |                        |                    |
| <b>Related issues:</b>  |                    |                        |                    |
| Related to CoCoA-5 - Support #296: Documentation for Parser/Interpreter |                    | <b>In Progress</b>     | <b>24 Jan 2013</b> |
| Related to CoCoA-5 - Design #929: Clean up CoCoALibSupplement           |                    | <b>In Progress</b>     | <b>22 Sep 2016</b> |

### History

#### #1 - 24 Jan 2013 08:38 - Anna Maria Bigatti

- Subject changed from *Witch functions are defined in CoCoALibSupplement?* to *Which functions are defined in CoCoALibSupplement?*

#### #2 - 11 Feb 2013 16:00 - Anna Maria Bigatti

- Project changed from *CoCoALib* to *CoCoA-5*
- Category deleted (*Documentation*)
- Target version deleted (*CoCoALib-0.99534 Seoul14*)

#### #3 - 11 Feb 2013 16:16 - Anna Maria Bigatti

- Category set to *Parser/Interpreter*

When add a new function it is good practice to have:

- in **BuiltinOneLiner.C** only functions using the "one-line" definition  
This also includes the functions like `DECLARE_COCoALIBFORC5_FUNCTION1(BlahBlah,..)` calling `BlahBlah_forC5` defined in `CoCoALibSupplement`
- in **BuiltinFunctions.C** just the minimal interface from interpreter to `CoCoALib`, no mathematics
- in **CoCoALibSupplement** what "is missing" in `CoCoALib` to be called from `BuiltinFunctions` or `BuiltinOneLiners`

Example: we want **SetEntry** in `CoCoA-5` to be almost the same as **SetEntry** in `CoCoALib`, except:

- in `CoCoALib` (as in C++) indexing start from 0, in `CoCoA-5` (as in `CoCoA-4`) from 1
- in `CoCoALib` indexes are long, in `CoCoA-5` are INT (`BigInt`)

See **SetEntry** in `BuiltinFunctions.C` and **SetEntry\_forC5** in `CoCoALibSupplements.C`

#### #4 - 02 Apr 2014 17:34 - Anna Maria Bigatti

- Target version set to *CoCoA-5.1.0 Easter14*

#### #5 - 09 Apr 2014 17:31 - John Abbott

- Target version changed from CoCoA-5.1.0 Easter14 to CoCoA-5.1.1 Seoul14

#### #6 - 02 Sep 2014 10:53 - Anna Maria Bigatti

- Status changed from New to In Progress

- Target version changed from CoCoA-5.1.1 Seoul14 to CoCoA-5.?.?

- % Done changed from 0 to 20

#### #7 - 19 Feb 2015 15:14 - Anna Maria Bigatti

Part of the definition of IsFactorClosed in BuiltinFunctions should be moved into CoCoALibSupplement (I will do it soon)

#### #8 - 22 Sep 2016 08:39 - Anna Maria Bigatti

Many functions in CoCoALibSupplement are just there because they need conversion from BigInt to long (or vector of BigInt to vector of long). Now there are functions to do this directly (VectorLong, VectorLongDecr1,...) in BuiltinFunctions, so CoCoALibSupplement could be made lighter.

#### #9 - 22 Sep 2016 08:42 - Anna Maria Bigatti

- Related to Design #929: Clean up CoCoALibSupplement added

#### #10 - 29 Mar 2019 19:10 - Anna Maria Bigatti

CoCoALibSupplement currently contains some functions for external libraries, e.g.

```
#ifndef CoCoA_WITH_NORMALIZ
long NmzVerbosityLevel_forC5();
matrix NmzHilbertBasis_forC5(ConstMatrixView M);
std::vector<RingElem> NmzNormalToricRing_forC5(const std::vector<RingElem>& ppv);
std::vector<RingElem> NmzIntClosureToricRing_forC5(const std::vector<RingElem>& ppv);
std::vector<RingElem> NmzIntClosureMonIdeal_forC5(const std::vector<RingElem>& ppv);
#endif // CoCoA_WITH_NORMALIZ
```

This was indeed an idea of mine, but I now believe those functions should be defined directly in BuiltinFunctions-Normaliz.C, reducing the number of files to modify when adding an external library, and the files to include in BuiltinFunctions-XXX.C.

#### #11 - 29 Mar 2019 19:23 - Anna Maria Bigatti

Anna Maria Bigatti wrote:

CoCoALibSupplement currently contains some functions for external libraries, e.g.

[...]

This was indeed an idea of mine, but I now believe those functions should be defined directly in BuiltinFunctions-Normaliz.C, reducing the number of files to modify when adding an external library, and the files to include in BuiltinFunctions-XXX.C.

Done, tested, works. I like it.