# CoCoA-5 - Feature #193

## BuiltinFunctions.C getting too long (2000 lines)

21 Jun 2012 11:21 - Anna Maria Bigatti

| | | | |
|---|---|---|---|
| **Status:** | Closed | **Start date:** | 21 Jun 2012 |
| **Priority:** | High | **Due date:** | |
| **Assignee:** | Anna Maria Bigatti | **% Done:** | 100% |
| **Category:** | Parser/Interpreter | **Estimated time:** | 0.00 hour |
| **Target version:** | CoCoA-5.0.9 | **Spent time:** | 4.75 hours |

**Description**

Can we split BuiltinFunctions.C so that it is easier to update and faster to compile?

**Related issues:**

| | | |
|---|---|---|
| Related to CoCoALib - Support #452: Documentation for adding functions to CoC... | **Closed** | **01 Mar 2014** |
| Related to CoCoA-5 - Support #296: Documentation for Parser/Interpreter | **In Progress** | **24 Jan 2013** |
| Related to CoCoA-5 - Design #782: BuiltinFunctions -- getting too long again! | **Closed** | **01 Oct 2015** |

### History

#### #1 - 21 Jun 2012 12:26 - Anna Maria Bigatti

One proposal for splitting is

- file A: general macros and templates
- file B: all oneliners (the easy ones) with all oneliner macros (includes A)
- fiel C: all other builtin functions (includes A)

Can B and C be compiled independently? (otherwise this splitting is useless)
I think we have to make two variables **vector<NameFunPair> builtIns;**
for the files B and C and modify the macros accordingly, and then call in B and C the corresponding

```
void RuntimeEnvironment::initBuiltInFunctions()
{
    BOOST_FOREACH(NameFunPair &p, builtIns)
        this->setTopLevelVar(p.first, p.second, VariableSlot::VSF_SystemProtected);
}
```

#### #2 - 21 Jun 2012 12:39 - Giovanni Lagorio

> I think we have to make two variables **vector<NameFunPair> builtIns;**

You can probably keep a single variable **builtIns**, but you have to make it visible in both B and C.
I didn't check, but I think that moving the declaration of **NameFunPair** and **builtIns** in A (of course, removing them from the anonymous namespace), and defining **builtIns** in either B or C, should do the trick.

#### #3 - 04 Jul 2012 14:44 - Anna Maria Bigatti

Should we also separate builtin function from external libs?  (I think so)

if so, should we have
**BuiltinFunctionsNormaliz.C**, **BuiltinFunctionsGSL.C**, **BuiltinFunctionsFrobby.C**
or just
**BuiltinFunctionsExternalLibs.C**

#### #4 - 05 Jul 2012 16:35 - Anna Maria Bigatti

*- Status changed from New to In Progress*

*- Assignee set to Anna Maria Bigatti*

*- Priority changed from Normal to High*

*- % Done changed from 0 to 30*

split into 4 files:
- **BuiltInFunctions.[CH]**
- **BuiltInOneLiners.[CH]**

next step: split out functions from external libraries.

#### #5 - 06 Jul 2012 16:46 - Christof Soeger

During linking BuiltInOneLiners.o cannot be found.
I could have somethink to do with the name of the .C file, it has a lower case i: BuiltinOneLiners.C

#### #6 - 06 Jul 2012 18:19 - Anna Maria Bigatti

Fixed.
(Even on a Mac) Emacs distinguishes cases.  Just to make sure I suggest to check-out BuiltinOneLiners.C first (removed) and then BuiltInOneLiners.C (added).

#### #7 - 11 Jul 2012 11:14 - Anna Maria Bigatti

*- % Done changed from 30 to 60*

Now there are dedicated files **BuiltInFunctions-GSL** and **BuiltInFunctions-Normaliz** for these two external libraries.

Next step would be to design a (macro?) mechanism to include anyway the "external" functions in CoCoA-5, and returning a meaningful error is the library is not included.

#### #8 - 23 Jan 2013 12:44 - Anna Maria Bigatti

*- Target version set to CoCoA-5.0.3*

*- % Done changed from 60 to 70*

Splitting the code seems to work very well.
Now I wonder whether I should also split BuiltinFunctions separating the cocoa-types (list, record, ..) which are more abstract, from the cocoalib-types (ring, ideal, ...) which are usually dealing with calling cocoalib functions depending on type.
I'm not sure it is worth it, but the nature of these functions is indeed quite different.

#### #9 - 31 May 2013 08:55 - Anna Maria Bigatti

*- Target version changed from CoCoA-5.0.3 to CoCoA-5.0.9*

#### #10 - 01 Aug 2013 08:10 - Anna Maria Bigatti

*- Status changed from In Progress to Closed*

*- % Done changed from 70 to 100*

The splitting works well.
There may be further refinements, but they'd better be new issues on their own.
==> closing this issue