

CoCoALib - Feature #1050

ExternalLibs: function for getting info

24 Apr 2017 14:14 - John Abbott

Status:	Closed	Start date:	24 Apr 2017
Priority:	Normal	Due date:	
Assignee:	John Abbott	% Done:	100%
Category:	New Function	Estimated time:	4.44 hours
Target version:	CoCoALib-0.99550 spring 2017	Spent time:	4.20 hours
Description			
I propose a new feature: CoCoALib should offer a function(s) for finding out which "external libraries" have been compiled in.			
Several questions:			
<ul style="list-style-type: none">• what should the function(s) be called?• in which file should the function(s) be defined?• what info should the function(s) produce?			
Related issues:			
Related to CoCoALib - Design #1019: CPP flags in installed library		Closed	05 Mar 2017
Related to CoCoA-5 - Bug #1046: CoCoA-5 no longer lists the external libs pre...		Closed	13 Apr 2017
Related to CoCoA-5 - Feature #711: External Libs: print credits?		Closed	18 May 2015
Related to CoCoALib - Feature #1219: Frobby version number		In Progress	16 Aug 2018

History

#1 - 24 Apr 2017 14:21 - John Abbott

- Status changed from New to In Progress

- % Done changed from 0 to 10

I propose putting the new function(s) in a new file called ExternalLibs.H (and ExternalLibs.C of course!). This means that each time a new external lib is added, the files ExternalLib.H/C should be modified.

The information about each external lib should ideally contain the following:

- name of the external lib (e.g. GMP or maybe libgmp?)
- names of the main authors of the external lib (but this might be long)
- version number of external lib (if this can be easily extracted from the lib itself)

Probably the information about an external lib should simply be in a struct: the fields could be called

- **myLibName**
- **myAuthors**
- **myLibVersion**

I am thinking of a single function (name ExternalLibs, maybe) which returns a std::vector of the above structs. The order of the entries in the vector is unimportant (and could even change from run to run!).

#2 - 24 Apr 2017 14:22 - John Abbott

- Related to Design #1019: CPP flags in installed library added

#3 - 24 Apr 2017 14:39 - John Abbott

An alternative file in which to put the function(s) is **BuildInfo.H/C**.

Advantage: no need to create any new files.

Disadvantage: perhaps not obvious that one should modify BuildInfo when adding a new external lib?

Comments?

#4 - 24 Apr 2017 17:37 - John Abbott

I have a first prototype (sent to Anna by email). Currently, it is just a program in examples/.

The main problem is finding an automatic way to obtain version numbers from the other libraries.

#5 - 26 Apr 2017 09:36 - Anna Maria Bigatti

John Abbott wrote:

An alternative file in which to put the function(s) is **BuildInfo.H/C**.

Advantage: no need to create any new files.

Disadvantage: perhaps not obvious that one should modify BuildInfo when adding a new external lib?

My first reaction was "yes! it is the right place!", but your second point made me reflect.

Now I'm convinced that ExternalLibs.H/C are the right places: easier to remember to update, and easier to find.

#6 - 26 Apr 2017 09:41 - Anna Maria Bigatti

John Abbott wrote:

I have a first prototype (sent to Anna by email). Currently, it is just a program in examples/.

OK, looks good.

The main problem is finding an automatic way to obtain version numbers from the other libraries.

That worries me a bit: I'd rather have two separate "suggested version" field and a "compiled with" field, so that there is no confusion. The first is obviously hand written, the second is defined only if we can extract the information.

#7 - 26 Apr 2017 14:10 - John Abbott

I am not yet convinced that having 2 fields is a good idea.

We could simply set the field to UNKNOWN or maybe Unknown but \geq v2.3.4 (since compilation would not succeed with older versions). Personally I prefer the simpler solution of just UNKNOWN. If the external library does not publish its version, the recommended version should be described in the documentation (e.g. `configure --help`), and it is the user's responsibility to check it.

#8 - 26 Apr 2017 14:20 - Anna Maria Bigatti

John Abbott wrote:

We could simply set the field to UNKNOWN or maybe Unknown but \geq v2.3.4

OK

#9 - 26 Apr 2017 17:04 - John Abbott

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

- Assignee set to *John Abbott*

- % Done changed from *10* to *70*

- Estimated time set to *2.22 h*

I have just checked-in my implementation (after some cleaning).
I have also modified `src/CoCoA-5/Banner.C` so that it uses the new fn.

One change compared to previous code for listing the external libs is that now GMP is listed as well; JAA thinks this is probably desirable.

#10 - 26 Apr 2017 17:04 - John Abbott

- Target version changed from *CoCoALib-0.99560* to *CoCoALib-0.99550 spring 2017*

#11 - 26 Apr 2017 17:44 - John Abbott

- Status changed from *Resolved* to *Feedback*

- % Done changed from *70* to *80*

I have checked in some documentation.

#12 - 26 Apr 2017 18:55 - Anna Maria Bigatti

- % Done changed from *80* to *70*

It says:

```
info.push_back(ExternalLibInfo("libnormaliz", ToString(NMZ_RELEASE), "...
```

in my `autoconf.mk` it is called (and undefined)

NORMALIZ_VERSION=

#13 - 26 Apr 2017 22:34 - Anna Maria Bigatti

- Related to Bug #1046: CoCoA-5 no longer lists the external libs present added

#14 - 26 Apr 2017 22:35 - Anna Maria Bigatti

Found missing include.
Also added mathsat and gsl

#15 - 27 Apr 2017 08:46 - Anna Maria Bigatti

I compiled and it works fine.
I don't much like the "lib" names:

```
With CoCoALib and external libraries GMP, libnormaliz, libfrobby, libgfan, libcdd, MathSAT
```

to my eyes it is less readable. I prefer the proper names like GMP. So I changed it.

But I think useful (in addition) the actual name of the "lib" file, together with the static/dynamic extension, so I started making this change, but I made the naive error to think that definitions in autoconf.mk are visible at compile time.
I'm checking in my work (now with "UNKNOWN lib..."), so that it is ready for updating it.

#16 - 27 Apr 2017 11:40 - John Abbott

- Related to Feature #711: External Libs: print credits? added

#17 - 27 Apr 2017 18:21 - Anna Maria Bigatti

Anna Maria Bigatti wrote:

But I think useful (in addition) the actual name of the "lib" file, together with the static/dynamic extension, so I started making this change, but I made the naive error to think that definitions in autoconf.mk are visible at compile time.
I'm checking in my work (now with "UNKNOWN lib..."), so that it is ready for updating it.

checked in

#18 - 28 Apr 2017 23:17 - John Abbott

- *Status changed from Feedback to Closed*
- *% Done changed from 70 to 100*
- *Estimated time changed from 2.22 h to 4.44 h*

While it may not be strictly correct to do it this way, I am closing this issue. We can proceed with the current implementation; if later it turns out that changes must be made then we will make them (via a new issue).

#19 - 16 Aug 2018 09:20 - John Abbott

- *Related to Feature #1219: Froby version number added*