CoCoALib - Feature #361

implement IsPrime3, IsMaximal3

29 May 2013 14:55 - Anna Maria Bigatti

Status:	Closed	**Start date:**	29 May 2013
Priority:	Normal	**Due date:**	
Assignee:	John Abbott	**% Done:**	100%
Category:	New Function	**Estimated time:**	0.00 hour
Target version:	CoCoALib-0.99560	**Spent time:**	2.00 hours

Description

We should implement functions like **IsPrime3** which returns true3/false3 if it easy to calculate, or already calculated, and uncertain3 otherwise.

For example **IsZeroDivisor(x)** could simply return **IsZero(x)** if we already know that the ring "IsIntegralDomain", and only otherwise go through a more expensive computation.
I cannot see a way to do this easily with the "strict" boolean functions we have now.

(This possibly applies to all boolean functions, but that's excessive)
Functions: **IsPrime3**, **IsMaximal3**, **IsField3**, **IsIntegralDomain3**,...
more?

Related issues:

Related to CoCoALib - Design #498: IsIntegralDomain, IamIntegralDomain3	**Closed**	**28 Mar 2014**
Related to CoCoALib - Design #513: Quick/correct flag for bool3 fns	**In Progress**	**02 Apr 2014**
Related to CoCoALib - Feature #899: IsMaximal, IsPrimary for IDEAL (in cocoa...	**Closed**	**27 Jun 2016**
Related to CoCoALib - Feature #885: IsIrred3: fast 3-way irred test (returnin...	**In Progress**	**24 May 2016**

History

#1 - 29 Oct 2013 15:21 - Anna Maria Bigatti

- Target version changed from CoCoALib-0.99534 Seoul14 to CoCoALib-0.99532

#2 - 01 Apr 2014 19:18 - Anna Maria Bigatti

- Category set to New Function

- Status changed from New to In Progress

- Assignee set to John Abbott

- % Done changed from 0 to 10

should we follow the same (new flashy) design as for **IsIntegralDomain3**?

#3 - 01 Apr 2014 19:29 - Anna Maria Bigatti

- Target version changed from CoCoALib-0.99532 to CoCoALib-0.99533 Easter14

#4 - 04 Apr 2014 17:15 - John Abbott

- Target version changed from CoCoALib-0.99533 Easter14 to CoCoALib-0.99534 Seoul14

#5 - 10 Jul 2014 16:24 - John Abbott

- Target version changed from CoCoALib-0.99534 Seoul14 to CoCoALib-1.0

#6 - 02 Aug 2016 14:21 - Anna Maria Bigatti

- Related to Feature #899: IsMaximal, IsPrimary for IDEAL (in cocoalib) added

#7 - 02 Aug 2016 15:00 - Anna Maria Bigatti

In a discussion with John Abbott and Mario Albert we got these points
in the case where a bool3 flag is in a class (abstract)
- make the bool3 function as member function? (but we already have the flag itself at that level; what if its private?)
- make the bool3 function as non-member function? (useful? neccesary?)
- make the bool function as member function: this fuction is supposed to **set the related flag**, and also other flags dependent on the result (e.g. IsPrime)
- make the bool function as non-member function.
- make the member-function actually computing and **not** reading/setting flags (e.g. myMaximalTest)

(this means I have to change the IamMaximal code accordingly)

#8 - 08 Sep 2016 11:09 - Anna Maria Bigatti

- Status changed from In Progress to Feedback

- % Done changed from 10 to 90

I suggest to close this issue: the discussion about this design has been moved to issue #899 (my mistake, but difficult to move it here)

#9 - 08 Sep 2016 11:16 - Anna Maria Bigatti

- Related to Feature #885: IsIrred3: fast 3-way irred test (returning bool3) added

#10 - 22 May 2017 13:38 - Redmine Admin

- Target version changed from CoCoALib-1.0 to CoCoALib-0.99560

#11 - 25 Nov 2017 10:42 - Anna Maria Bigatti

- Status changed from Feedback to Closed

- % Done changed from 90 to 100