CoCoALib - Feature #39

Squarefree factorization

30 Nov 2011 16:04 - John Abbott

Status:	Closed	**Start date:**	30 Nov 2011
Priority:	Normal	**Due date:**	
Assignee:	John Abbott	**% Done:**	100%
Category:	New Function	**Estimated time:**	0.00 hour
Target version:	CoCoALib-0.99532	**Spent time:**	129.60 hours

Description

Implement squarefree factorization (most especially for polynomial rings).

This is just a parent task; it has many subtasks representing the various steps needed to reach the goal.

This mostly managed by John Abbott; some of the work is delegated to Alessio d'Ali`.

Subtasks:

Feature # 40: Squarefree factorization - Alessio d'Ali`	**Closed**
Feature # 41: Squarefree factorization - overhead	**Closed**
Feature # 42: Squarefree factorization - generic case	**Closed**
Feature # 43: Squarefree factorization - for polynomials	**Closed**
Feature # 44: Squarefree factorization - univariate polynomials	**Closed**
Feature # 45: Squarefree factorization - univariate polynomials, char 0	**Closed**
Feature # 46: Squarefree factorization - univariate polynomials, char p > 0	**Closed**
Feature # 69: p-th root	**Closed**
Feature # 47: Squarefree factorization - multivariate polynomials	**Closed**
Feature # 48: Squarefree factorization - multivariate polynomials, char 0	**Closed**
Feature # 49: Squarefree factorization - multivariate polynomials, char p > 0	**Closed**

Related issues:

Related to CoCoALib - Feature #516: Make squarefreefactor work in multiple po...	**New**	**02 Apr 2014**
Related to CoCoALib - Feature #796: CoCoALib function for radical (or SqFree)...	**Closed**	**05 Nov 2015**

History

#1 - 23 Oct 2013 20:50 - John Abbott

- Status changed from New to Feedback

- Assignee set to John Abbott

The issue has been resolved by implementing Bernardin's algm (which seems to work quite well in practice).

The code has been ported into CoCoALib (with doc & tests, of course).
It seems to work fine in "normal" rings, but may not work some "unusual" rings (see #47 for more details).

Putting this issue into feedback: the code will be released publicly in a few days!

PS it looks as though I created far too many subtasks; initially it seemed that each subtask would require separate handling, but in the end just 2 impls did everything reasonably well.

#2 - 29 Oct 2013 13:05 - Anna Maria Bigatti

- Target version set to CoCoALib-0.99532

#3 - 02 Apr 2014 18:58 - John Abbott

- Status changed from Feedback to Closed