CoCoALib - Feature #50

Polynomial content

30 Nov 2011 17:38 - 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-0.9953	**Spent time:**	5.30 hours

Description

New function(s) to compute content of a poly w.r.t. a given indet.

In which ring does the result lie?

- if poly is univariate, result will be in coeff ring
- if poly is multivariate, result may be in poly ring
  DECIDE!!!

May want an extended version which computes content w.r.t to several indets?

Related issues:

Related to CoCoALib - Feature #51: polynomial coefficient extraction w.r.t. v...	**Closed**	
Related to CoCoALib - Bug #154: GCD normalization (e.g. monic)	**In Progress**	**07 May 2012**

History

#1 - 20 Mar 2012 15:55 - John Abbott

- % Done changed from 0 to 60

Created two fns:

- **content** computes "content" of the coeffs, result is in CoeffRing
- **ContentWRT** computes "content" wrt given indets, result is in original poly ring.

Must still add doc, and tests.

#2 - 27 Apr 2012 15:00 - Anna Maria Bigatti

Tests and doc are already done for CoCoA-5.
Still missing in CoCoALib

#3 - 07 May 2012 12:47 - John Abbott

- % Done changed from 60 to 90

The function **ContentWRT** gives result with strange scale factors sometimes.

```
Use ZZ/(29641)[x,y];
f := (2*x+3)*(3*y+2);
ContentWRT(f,x);
-6*y -4
```

Perhaps make the result monic? **Note (2013-05-27) the monic answer is y+9881 do we really want that?**

Seems to be well behaved in QQ[x,y].

#4 - 28 Nov 2012 11:38 - Anna Maria Bigatti

- Status changed from New to Feedback

- Target version set to CoCoALib-0.9953

#5 - 27 May 2013 18:16 - John Abbott

- Status changed from Feedback to Closed

- Assignee set to John Abbott

- % Done changed from 90 to 100

The main issue has been satisfactorily resolved for a year or so.

The question about "normalization" (in post 3) is really the same as issue #154 about normalization of the result of GCD computations, so I shall ignore it here, and regard the issue as closed now.