

## CoCoALib - Slug #120

### LT over QQ: surprisingly slow

03 Apr 2012 20:40 - John Abbott

<b>Status:</b>	New	<b>Start date:</b>	03 Apr 2012
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	0%
<b>Category:</b>	Various	<b>Estimated time:</b>	4.00 hours
<b>Target version:</b>	CoCoALib-1.0	<b>Spent time:</b>	0.30 hour

#### Description

The following should compute a LT ideal of a small ideal (using lex).  
It takes longer than I would expect over QQ -- it is quite fast over ZZ/(p), and produces ideal(x,y,z^10).  
Over QQ it is really too slow (>20mins on my current computer)... JAA thinks there may really be a bug.

```
ring QQ = RingQQ();
PolyRing P = NewPolyRing(QQ, symbols("x","y","z"), lex);
RingElem x = indet(P,0);
RingElem y = indet(P,1);
RingElem z = indet(P,2);
RingElem g1 = x*x*x + x*x*z + x*z;
RingElem g2 = x*x*x + x*y*y + 1;
RingElem g3 = x*x + x*y*z + y*y*y;

ideal I(g1,g2,g3);

cout << "LT(I)=" << LT(I) << endl;
```

Estimated time is only for locating the problem; it will have to be updated when the root cause is discovered.

#### Related issues:

Related to CoCoALib - Design #871: Redesign ideals

New

26 Apr 2016

#### History

##### #1 - 03 Apr 2012 21:08 - John Abbott

Here is another suspect starting ideal in QQ[x,y,z],Lex  
[x^4 + x\*y^2\*z + y^4, x^3\*y + x^2\*z^2 + z^2]

##### #2 - 03 Apr 2012 21:48 - John Abbott

My "noddy" program for computing GBases can do the whole computation in a few seconds...

##### #3 - 09 Oct 2012 15:47 - Anna Maria Bigatti

- Tracker changed from Bug to Slug

- Subject changed from Surprisingly slow to LT over QQ: surprisingly slow

##### #4 - 01 Apr 2014 17:41 - Anna Maria Bigatti

- Target version set to CoCoALib-0.99533 Easter14

##### #5 - 01 Apr 2014 18:50 - Anna Maria Bigatti

- Category set to Various

##### #6 - 08 Apr 2014 18:36 - John Abbott

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

**#7 - 10 Jul 2014 16:26 - John Abbott**

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

**#8 - 26 Apr 2016 15:13 - John Abbott**

- Related to Design #871: Redesign ideals added