# CoCoALib - Bug #746

## Problem with GBasis in tower of alg extns

09 Jul 2015 13:13 - John Abbott

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|---|---|---|---|
| **Status:** | New | **Start date:** | 09 Jul 2015 |
| **Priority:** | Normal | **Due date:** | |
| **Assignee:** | | **% Done:** | 0% |
| **Category:** | Various | **Estimated time:** | 0.00 hour |
| **Target version:** | CoCoALib-1.0 | **Spent time:** | 0.25 hour |

**Description**

I tried computing a GBasis in a ring with structure like QQ(alpha)(beta)[x] where alpha and beta are algebraic. I got an NYI error from the factorizer!

### History

#### #1 - 09 Jul 2015 13:14 - John Abbott

Here is a transcript of what happened...

```
>>> A ::= QQ[x];

>>> QQx:=A;

>>> use QQx;

>>> I := ideal(x^2-2);

>>> QQsqrt2 := NewQuotientRing(QQx,I);

>>> QQ2y::=QQsqrt2[y];

>>> use QQ2y;

>>> J := ideal(y^2-17);

>>> K := QQ2y/J;

>>> use K[z];

>>> f := (z^2+x+y^3)*(z^3+x*z+y*z^2-(x*y)^3);

>>> f;
z^5 +(y)*z^4 +((17)*y +(2*x))*z^3 +((-33*x)*y +(289))*z^2 +((17*x)*y +(2))*z +((-68)*y +(-9826*x))

>>> J := ideal(f*(z^2-x-y), f*(z^7-(x+y)^7));

**************************************************************************
****CoCoA ERROR****  ErrCode: CoCoA::ERR::NYI
****CoCoA ERROR****  Message: NOT YET IMPLEMENTED -- please be patient, we're working on it
****CoCoA ERROR****  Context: Factorization not in QQ[x,y,...]  or in ZZ/(p)[x,y,...]
****CoCoA ERROR****  File:    factor.C
****CoCoA ERROR****  Line:    334
**************************************************************************

--> ERROR: NOT YET IMPLEMENTED -- please be patient, we're working on it
--> J := ideal(f*(z^2-x-y), f*(z^7-(x+y)^7));
-->      ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
```

**#2 - 21 Mar 2016 14:29 - John Abbott**

*- Target version changed from CoCoALib-0.99540 Feb 2016 to CoCoALib-1.0*