

## CoCoA-5 - Bug #1420

### IdealOfProjectivePoints and MinGens: problem with CoCoA\_ASSERT

18 Feb 2020 12:19 - John Abbott

<b>Status:</b>	Closed	<b>Start date:</b>	18 Feb 2020
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assignee:</b>	Anna Maria Bigatti	<b>% Done:</b>	100%
<b>Category:</b>	bug	<b>Estimated time:</b>	1.50 hour
<b>Target version:</b>	CoCoA-5.3.0	<b>Spent time:</b>	1.45 hour
<b>Description</b>			
I compiled CoCoALib (and CoCoA-5) with debugging active. The last test in exbug.cocoa5 fails			
<pre>use P ::= QQ[x,y,z]; K := IdealOfProjectivePoints(P, mat([[0,1,1],[0,0,1]])); MinGens(K);</pre>			
The problem is a failed assertion:			
<pre>==== CoCoA Assertion failed: [[myGBasisValue.empty()]] ==== File: SparsePolyOps-ideal.C ==== Line: 737</pre>			
<b>Related issues:</b>			
Related to CoCoALib - Bug #1416: IdealOfProjectivePoints and MinGens		<b>Closed</b>	<b>14 Feb 2020</b>
Related to CoCoALib - Design #1422: Remove flag IhaveGBasisValue?		<b>In Progress</b>	<b>25 Feb 2020</b>

#### History

##### #1 - 18 Feb 2020 12:20 - John Abbott

- Status changed from New to In Progress

- % Done changed from 0 to 10

The problem is in the fn myGBasis

The impl has too many assertions that myGBasis is empty; just a single assertion (in the right place) should suffice!  
The code looks dodgy to me...

##### #2 - 18 Feb 2020 13:37 - John Abbott

- Description updated

##### #3 - 25 Feb 2020 15:48 - Anna Maria Bigatti

- Related to Bug #1416: IdealOfProjectivePoints and MinGens added

##### #4 - 25 Feb 2020 15:52 - Anna Maria Bigatti

- Related to Design #924: FlagManager for bool/bool3 flags added

##### #5 - 25 Feb 2020 16:07 - Anna Maria Bigatti

- Subject changed from IdealOfProjectivePoints to IdealOfProjectivePoints and MinGens: problem with CoCoA\_ASSERT

- Status changed from In Progress to Resolved
- Assignee set to Anna Maria Bigatti
- Priority changed from Urgent to High
- % Done changed from 10 to 50

**#6 - 25 Feb 2020 16:16 - Anna Maria Bigatti**

- Related to Design #1422: Remove flag IhaveGBasisValue? added

**#7 - 25 Feb 2020 16:16 - Anna Maria Bigatti**

- Related to deleted (Design #924: FlagManager for bool/bool3 flags)

**#8 - 25 Feb 2020 16:24 - Anna Maria Bigatti**

- Target version changed from CoCoA-5.3.0 to CoCoA-5.4.0

This problem comes from the fact that IdealOfProjectivePoints computes a GBasis, without determining the minimal generators. The function MinGens, then has to run myGBasis, with Buchberger Algorithm, to find the minimal generators, effectively forgetting that the ideal already has a GBasis.

The quick&easy solution to [#1416](#) was to set IhaveGBasisValue = false; to force the call. But now the assert complains the assert in myGBasis (only when debugging is on) finds the mismatch.

Deciding and solving [#1422](#) will solve this issue too.

**#9 - 26 Feb 2020 16:31 - Anna Maria Bigatti**

- Status changed from Resolved to Closed
- Target version changed from CoCoA-5.4.0 to CoCoA-5.3.0

commented out ASSERT.  
This may be closed, leaving Design [#1422](#) to do for next release.

**#10 - 26 Feb 2020 16:59 - John Abbott**

- % Done changed from 50 to 100
- Estimated time set to 1.50 h