CoCoA-5 - Slug #1392

ApproxSolve: another slow example

13 Jan 2020 20:48 - John Abbott

| Status: | Closed | Start date: | 13 Jan 2020 | |
|--|---------------------|-----------------|-------------|-------------|
| Priority: | Normal | Due date: | | |
| Assignee: | Anna Maria Bigatti | % Done: | 100% | |
| Category: | enhancing/improving | Estimated time: | 1.55 hour | |
| Target version: | CoCoA-5.4.0 | Spent time: | 1.55 hour | |
| Description | | | | |
| Here is another seemingly simple system where ApproxSolve is unexpectedly slow | | | | |
| | | | | |
| use QQ[x,y,z]; | | | | |
| $L := [x^4 - y^*z^3 + z^4, y^4 - x^2*y^*z + 2*x^*z^3, z^4 - x^*y^2 + 3*y^3];$ | | | | |
| <pre>solns := ApproxSolve(L);</pre> | | | | |
| | | | | |
| Related issues: | | | | |
| Related to CoCoA-5 - Slug #907: ApproxSolve very slow on this example | | | Closed | 14 Jul 2016 |

History

#1 - 13 Jan 2020 20:52 - John Abbott

It took about 3mins on my computer: anyway not more than 220s.

#2 - 14 Jan 2020 08:27 - Anna Maria Bigatti

- Related to Slug #907: ApproxSolve very slow on this example added

#3 - 16 Jan 2020 16:31 - Anna Maria Bigatti

- Status changed from New to In Progress
- Assignee set to Anna Maria Bigatti
- % Done changed from 0 to 50

We (Robbiano and I) found a way to solve it quickly: compute the radical first!

```
/**/ t_0:=CpuTime(); SA := ApproxSolve(gens(radical(ideal(L)))); TimeFrom(t_0);
0.949
```

Obviously, when I wrote the code in ApproxSolve, the radical was not as good as it is now ;-) I'll change the code in ApproxSolve.cpkg5 so that it computes the radical internally.

#4 - 16 Feb 2021 14:09 - John Abbott

- Description updated
- Status changed from In Progress to Resolved
- % Done changed from 50 to 80

The example given is quite quick now (0.5s on my computer). Marking as "resolved" (don't know by whom or when).

#5 - 24 Sep 2021 22:21 - John Abbott

- Description updated
- Status changed from Resolved to Closed
- % Done changed from 80 to 100
- Estimated time set to 1.55 h