

CoCoALib - Slug #773

DMPZmerge: make non-recursive

15 Sep 2015 16:14 - John Abbott

Status:	Closed	Start date:	15 Sep 2015
Priority:	Normal	Due date:	
Assignee:	John Abbott	% Done:	100%
Category:	Improving	Estimated time:	3.90 hours
Target version:	CoCoALib-0.99540 Feb 2016	Spent time:	3.75 hours
Description			
The fn DMPZmerge is recursive; this is a problem when dealing with large polys. Rewrite it to be iterative.			

History

#1 - 15 Sep 2015 16:15 - John Abbott

- % Done changed from 0 to 10

Problem was signalled by email (from Winfried Bruns, Bogdan Ichim on 2015-09-14). It appears to be a stack overflow: it worked OK for me when I increased stacksize to 32768 (Kbytes), but failed with SEGV when I tried a smaller stacksize (e.g. 16384).

Here is how to reproduce the problem:
you must have both normaliz and nmzIntegrate compiled;
now start the command

```
./nmzIntegrate -c -E 7x7footballSymm
```

You will also need the following two files:
This is 7x7footballSymm.in:

```
6
7
1  -1  0  0  0  0  0
0   1  -1  0  0  0  0
0   0   1  -1  0  0  0
0   0   0   1  -1  0  0
0   0   0   0   1  -1  0
0   0   0   0   0   1  -1
inequalities

1
7
1 1 1 1 1 1 1
signs

1
7
1 1 1 1 1 1 1
grading
```

And this is 7x7footballSymm.pnm:

```
1/120*1/120*1/120*1/120*1/120*1/120*1/120*1/120*
(x[1]+5)*
(x[1]+4)*
(x[1]+3)*
```

(x[1]+2) *
(x[1]+1) *
(x[2]+5) *
(x[2]+4) *
(x[2]+3) *
(x[2]+2) *
(x[2]+1) *
(x[3]+5) *
(x[3]+4) *
(x[3]+3) *
(x[3]+2) *
(x[3]+1) *
(x[4]+5) *
(x[4]+4) *
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(x[5]+4) *
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(x[5]+2) *
(x[5]+1) *
(x[6]+5) *
(x[6]+4) *
(x[6]+3) *
(x[6]+2) *
(x[6]+1) *
(x[7]+5) *
(x[7]+4) *
(x[7]+3) *
(x[7]+2) *
(x[7]+1)

PS JAA is not actually sure whether the PNM file is actually needed.

#2 - 17 Sep 2015 21:54 - John Abbott

- *Status changed from New to In Progress*
- *Assignee set to John Abbott*
- *% Done changed from 10 to 50*

I have had a "quick hack" at the code. The CoCoA/CoCoALib tests all pass, but I'm not sure that any of them actually uses the code in DMPZmerge.

I'll try sending (by email) the hacked code to the enthusiastic alpha testers... ;-)

PS given how little I slept last night, and that it's the end of the day, and I'm drinking (Erika's) wine... no guarantees about the quickly hacked code!

#3 - 18 Sep 2015 14:41 - John Abbott

I have now rewritten the hacked code in a cleaner way, but shall still wait for confirmation from the Normaliz group that it works fine for them before checking it into CVS.

#4 - 21 Sep 2015 13:48 - Christof Soeger

I can confirm that it is working with your quickly hacked code!

#5 - 21 Sep 2015 14:20 - John Abbott

- *Status changed from In Progress to Feedback*
- *% Done changed from 50 to 90*
- *Estimated time set to 3.90 h*

I have checked in a cleaned up version of the new code.
I hope Christof will verify that this version is still fine.

#6 - 22 Sep 2015 11:15 - Christof Soeger

It does! Thanks for the fix!

NOTE phew! Thanks for the confirmation :-)

#7 - 23 Mar 2016 15:00 - John Abbott

- *Status changed from Feedback to Closed*
- *% Done changed from 90 to 100*