

## CoCoA-5 - Bug #1651

### SEGV subsets ??

25 Jan 2022 09:42 - John Abbott

|  |             |                        |             |
|--|-------------|------------------------|-------------|
| <b>Status:</b>   | Closed      | <b>Start date:</b>     | 25 Jan 2022 |
| <b>Priority:</b>   | Normal      | <b>Due date:</b>       |             |
| <b>Assignee:</b>   | John Abbott | <b>% Done:</b>         | 100%        |
| <b>Category:</b>   | bug         | <b>Estimated time:</b> | 0.99 hour   |
| <b>Target version:</b>   | CoCoA-5.4.0 | <b>Spent time:</b>     | 1.00 hour   |
| <b>Description</b>   |             |                        |             |
| This was a surprise:   |             |                        |             |
| <pre>/**/ L := 1..5000;<br/>/**/ S := subsets(L,2);</pre>  |             |                        |             |
| Process cocoa5 segmentation fault (core dumped)  |             |                        |             |
| The crash came relatively quickly (30s, maybe)<br>Stack overflow? top did not report excessive memory usage (about 1Gbyte) |             |                        |             |

### History

#### #1 - 25 Jan 2022 16:32 - John Abbott

On Julian's computer (Linux, CoCoA-5.3.3b), it gave a controlled CoCoA-5 error: "too many recursive calls" (or similar). Why did mine SEGV?

#### #2 - 26 Jan 2022 12:53 - John Abbott

- Status changed from New to In Progress
- % Done changed from 0 to 10

I have just used ulimit to increase my stacksize limit, and now I get "too many recursions":

```
--> ERROR: Too many nested scopes  
--> WHERE: at line 46 (column 24) of combinatoria.cpkg5  
-->   If N = 1 Then Return [[X] | X In S]; EndIf;  
-->   ^^^^^^^^^^^^^^^^^
```

I suppose we should re-write subsets so that it does not recurse too deeply.

#### #3 - 26 Jan 2022 15:28 - Anna Maria Bigatti

On my Mac I get

--> ERROR: Too many nested scopes

#### **#4 - 31 Jan 2022 17:49 - John Abbott**

- *Status changed from In Progress to Resolved*
- *Assignee set to John Abbott*
- *% Done changed from 10 to 70*

I have modified the impl of SubsetsN in combinatoria.cpkg5 so that it handles 2-subsets specially (avoiding recursion).

My computer SEGV'd because of stack overflow. Not sure why. Julian's Linux box had the same stack limit but didn't overflow. Anyway, the non-recursive impl should now avoid that problem completely.

Marked as **resolved**.

#### **#5 - 03 Feb 2022 19:03 - John Abbott**

- *Status changed from Resolved to Closed*
- *% Done changed from 70 to 100*
- *Estimated time set to 0.99 h*

Too much stress to keep this open any longer. I'm pretty sure it is fixed now (and faster too). Let the users do the testing -- that's what everyone else seems to do!