CoCoA-5 - Bug #444

Not keyword/operator

19 Feb 2014 21:37 - John Abbott

Status:	Closed		**Start date:**	19 Feb 2014
Priority:	Immediate		**Due date:**	
Assignee:	John Abbott		**% Done:**	100%
Category:	Cleaning		**Estimated time:**	3.50 hours
Target version:	CoCoA-5.0.9		**Spent time:**	3.75 hours

Description

The Not operator behaves differently from C4.

In C4 you could write If Not 1 IsIn I Then ...

In C5 this is interpreted as If Not(1) IsIn I Then ...
which gives a run-time error saying that 1 is not a boolean!

Is this a bug?

Related issues:

Related to CoCoA-5 - Support #488: CoCoAManual: Help page for porting old C4 ...	**Closed**	**21 Mar 2014**

History

#1 - 21 Feb 2014 01:29 - John Abbott

- Target version set to CoCoA-5.0.9

I have just grepped through the C5 packages and there are several places where the operator Not is incorrectly applied!

I'm now wondering whether it might not be better to eliminate it as a keyword, and just define a function instead (requiring use of brackets whenever it is called). Such a change would make some uses uglier: If Not(IsInteger(arg))

Since we are using it incorrectly, it does seem like poor design...well, I suppose our minds have been "polluted" by C4 language :-)

If we want to keep a "logical negation" operator, maybe there's a better syntax?

#2 - 21 Feb 2014 12:39 - Anna Maria Bigatti

John Abbott wrote:

> I have just grepped through the C5 packages and there are several places where the operator Not is incorrectly applied!

how embarrassing...

> I'm now wondering whether it might not be better to eliminate it as a keyword, and just define a function instead (requiring use of brackets whenever it is called). Such a change would make some uses uglier: If Not(IsInteger(arg))

uglier but clearer... I like it. I think I tend to write If (Not IsInteger(arg)) anyway.

#3 - 21 Feb 2014 12:57 - John Abbott

I've just noticed a real howler in hilop.cpkg5

```
Define ListOfRingElems(L, R)
  Return Not False IsIn [RingEnv(E) = R | E In L];
EndDefine;
```

The critical line will not produce a run-time error (or warning); it is interpreted as:

```
Define ListOfRingElems(L, R)
  Return True IsIn [RingEnv(E) = R | E In L];
EndDefine;
```

which is very different from the original programmer's intention, I imagine!

#4 - 21 Feb 2014 13:00 - John Abbott

- Priority changed from Normal to Immediate

- % Done changed from 0 to 10

A moment's reflection about the above howler has put me in panic mode; how come anything works in CoCoA-5???

Should there be a new operator IsNotIn? Well, perhaps this should be decided after looking at the current C5 packages

#5 - 21 Feb 2014 14:50 - Anna Maria Bigatti

John Abbott wrote:

> I've just noticed a real howler in hilop.cpkg5
> [...]
> which is very different from the original programmer's intention, I imagine!

Ouch. Anyway that function is not called and should be quickly removed without any further publicity ;-)
Should I do it?

#6 - 21 Feb 2014 16:14 - John Abbott

- % Done changed from 10 to 20

There seems to be no doubt that the current Not operator is problematic: even we, the C5 designers, find it "dangerous". So we should work towards its replacement by a true function (built-in for speed).

Step 1: edit all cpkg5 files so that Not is applied as if it were a function (this should not break any code); also replace Not by not.
Step 2: implement built-in fn called not, and remove the keyword Not (this should not break any code)
Step 3: revise the CoCoA manual

#7 - 21 Feb 2014 16:44 - John Abbott

Stage 1 done. About to check in!

#8 - 21 Feb 2014 18:37 - John Abbott

- % Done changed from 20 to 40

Done stage 2. All C5 tests pass. Checked in.

NB old code for Not operator has only been commented out for now.
I'll delete it shortly (if I remember).

#9 - 24 Feb 2014 17:49 - John Abbott

- % Done changed from 40 to 50

Old code has been deleted (not yet CVSed though). All still works.

ANNA will fix the manual; perhaps separate man page for not,and,or into two pages?

#10 - 05 Mar 2014 17:00 - John Abbott

- Category set to Cleaning

- Status changed from New to Feedback

- Assignee set to John Abbott

- % Done changed from 50 to 90

JAA has revised the manual page for the logical operators.

#11 - 18 Mar 2014 15:28 - John Abbott

- Status changed from Feedback to Closed

- % Done changed from 90 to 100

No problems have arisen in 2 weeks, so I'm closing this issue.

#12 - 21 Mar 2014 10:30 - Anna Maria Bigatti

(a problem has arisen ;-)
added Not, NOT in **BackwardCompatible**

#13 - 02 Apr 2014 18:35 - Anna Maria Bigatti

- Estimated time set to 3.50 h