CoCoALib - Design #1608

Domain of definition of NextPrime (and PrevPrime)

16 Sep 2021 22:03 - John Abbott

Status:	Closed	**Start date:**	16 Sep 2021
Priority:	Normal	**Due date:**	
Assignee:	John Abbott	**% Done:**	100%
Category:	Tidying	**Estimated time:**	1.01 hour
Target version:	CoCoALib-0.99800	**Spent time:**	1.00 hour

Description

Not so important: what is the domain of defn of NextPrime and that of PrevPrime?

I tried to compute NextPrime(0) but obtained an error saying the arg must be (strictly) positive.
Also PrevPrime(2) in CoCoA-5 gave an unhelpful/misleading error message (ArgTooBig).

Decide defn, and improve error mesgs.

History

#1 - 20 Sep 2021 13:24 - John Abbott

- Description updated

- Status changed from New to In Progress

- Assignee set to John Abbott

- % Done changed from 0 to 10

I am now inclined to allow 0 as arg to NextPrime; perhaps this is related to my preference to consider 0 as a "natural number".

I have doubts about PrevPrime returning 0 when given 2 (or 1 or 0) as input. Surely an error would be more appropriate?

I wonder why I wrote the code the way I did...? (Documentation? Pah!)

#2 - 20 Sep 2021 14:08 - John Abbott

- Status changed from In Progress to Feedback

- % Done changed from 10 to 90

I have spoken to Anna who agrees to change the behaviour:

- both fns throw BadArg (or similar) if given (strictly) negative args
- PrevPrime throws OutOfRange if arg is 0 <= n <= 2.
- NextPrime returns 0 if no next small prime exists
- Similar mods to NextProbPrime and PrevProbPrime.

Modified doc. Modified test-NumTheory1.C.

#3 - 20 Oct 2021 22:09 - John Abbott

- Status changed from Feedback to Closed

- % Done changed from 90 to 100

- Estimated time set to 1.01 h