# CoCoALib - Feature #562

# Subrings

20 May 2014 09:55 - John Abbott

Status:	New	Start date:	20 May 2014	
Priority:	Normal	Due date:		
Assignee:		% Done:	0%	
Category:	Safety	Estimated time:	40.00 hours	
Target version:	CoCoALib-1.0	Spent time:	0.25 hour	
Description				
The notion of subrings looks promising. Investigate & implement (if appropriate).				
Related issues:				
Related to CoCoALib - Feature #113: Introduce PartialHom			In Progress	23 Mar 2012
Related to CoCoA-5 - Bug #100: BringIn should map only the indets in its arg			New	07 Mar 2012
Related to CoCoALib - Feature #658: Indets actually in a poly (or vector or m			Closed	22 Jan 2015
Related to CoCoALib - Feature #1468: Adjoin indets to a poly ring			In Progress	25 Jun 2020

#### History

### #1 - 09 Jul 2014 17:53 - John Abbott

- Target version changed from CoCoALib-0.99534 Seoul14 to CoCoALib-1.0

## #2 - 29 Sep 2020 13:12 - John Abbott

- Related to Feature #1468: Adjoin indets to a poly ring added

#### #3 - 29 Sep 2020 13:19 - John Abbott

Which sorts of subring would we like to represent?

- (A) in a polyring a subring generated by a subset of the indets
- (B) in a polyring the subring whose coeffs lie in a subring of the coeffring
- (C) combine (A) and (B)?
- (D) (for modular reduction) in QQ the subring of p-adic integers (i.e. p does not divide the denom)
- other ideas?

My idea is that a subring could be used as the domain of a ringhom; this means that it should be quick/easy to detect if a ringelem is in the subring.

Presumably we would need ome way to represent these subrings, and also a list of permitted operations on them. The operations I foresee are: using them to specify the domain of a ringhom, and probably extracting the "big ring" from the subring.