

GHC development flow

walking guide for new contributors

Takenobu T.

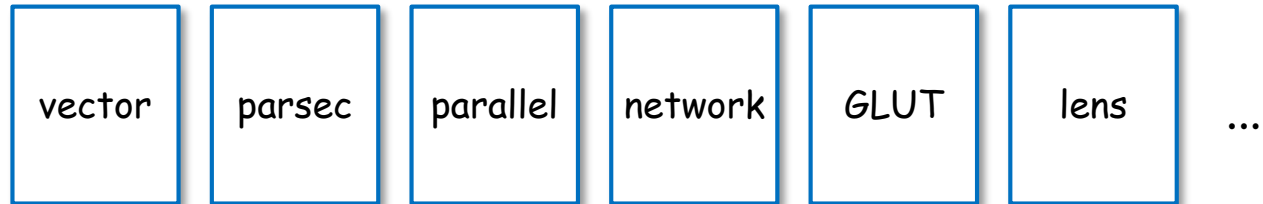
NOTE

- This is not an official document by the ghc development team.
- Please refer to the official documents in detail.
- This information is current as of Nov, 2016.

Overall relationship

Development layers

Haskell packages



GHC compiler
+ Core Libraries

GHC compiler

Compiler + Runtime system

Main ML : [ghc-devs at haskell.org](#) [1]
Steering by [GHC Committee](#) [2]

Haskell Core Libraries

base, array, process,...

Main ML : [libraries at haskell.org](#) [3]
Steering by [Core Libraries Committee](#) [4]

Haskell Language

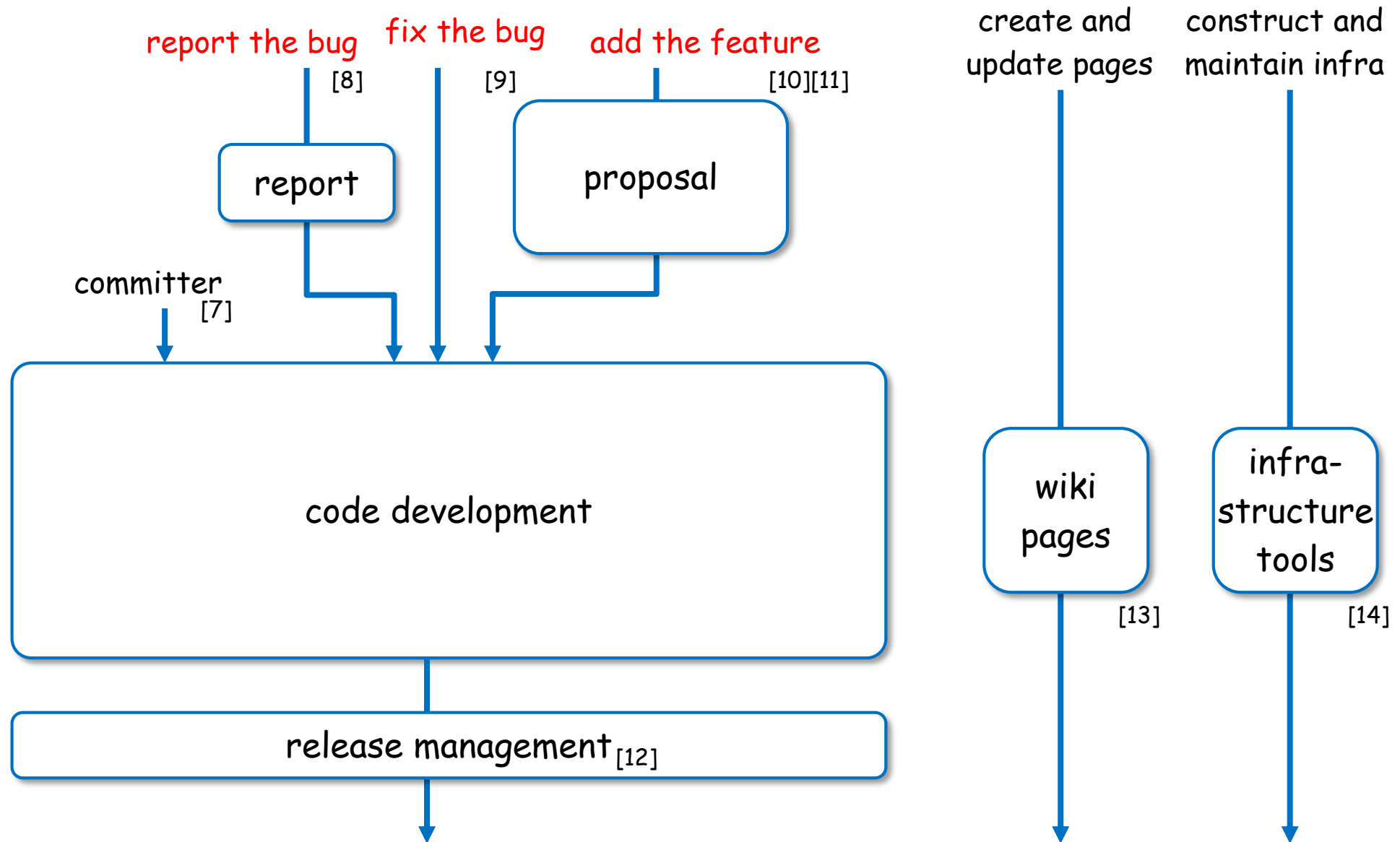
Language Report

Haskell 98, Haskell 2010,
Haskell 2020

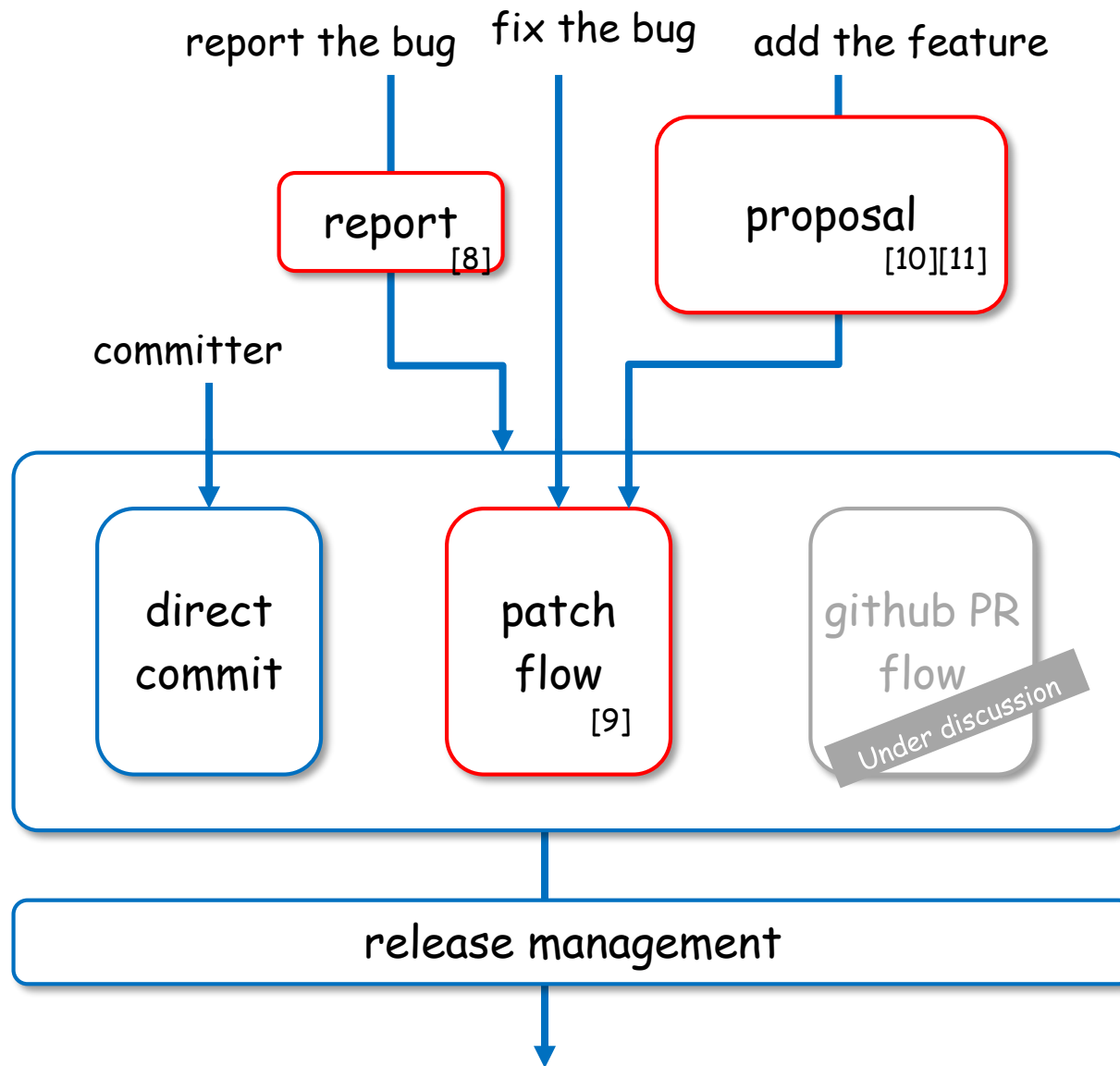
Main ML : [haskell-prime at haskell.org](#) [5]
Steering by [Haskell 2020 Committee](#) [6]

GHC compiler development flow

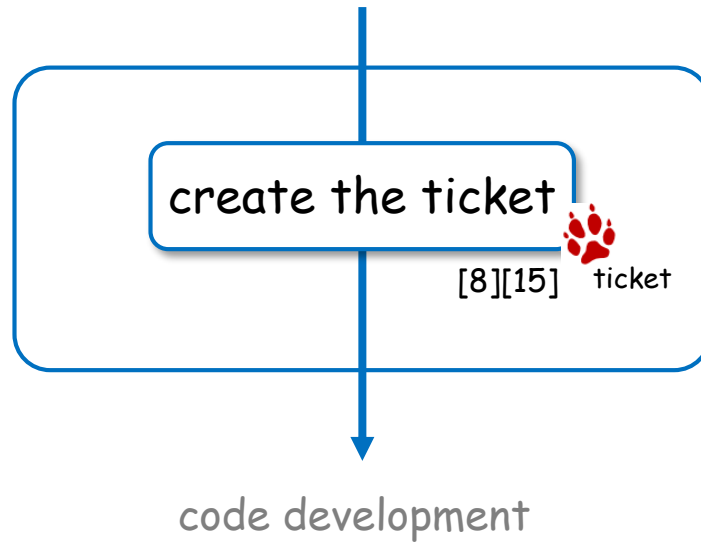
GHC compiler development flow (overview)



GHC compiler code development flow



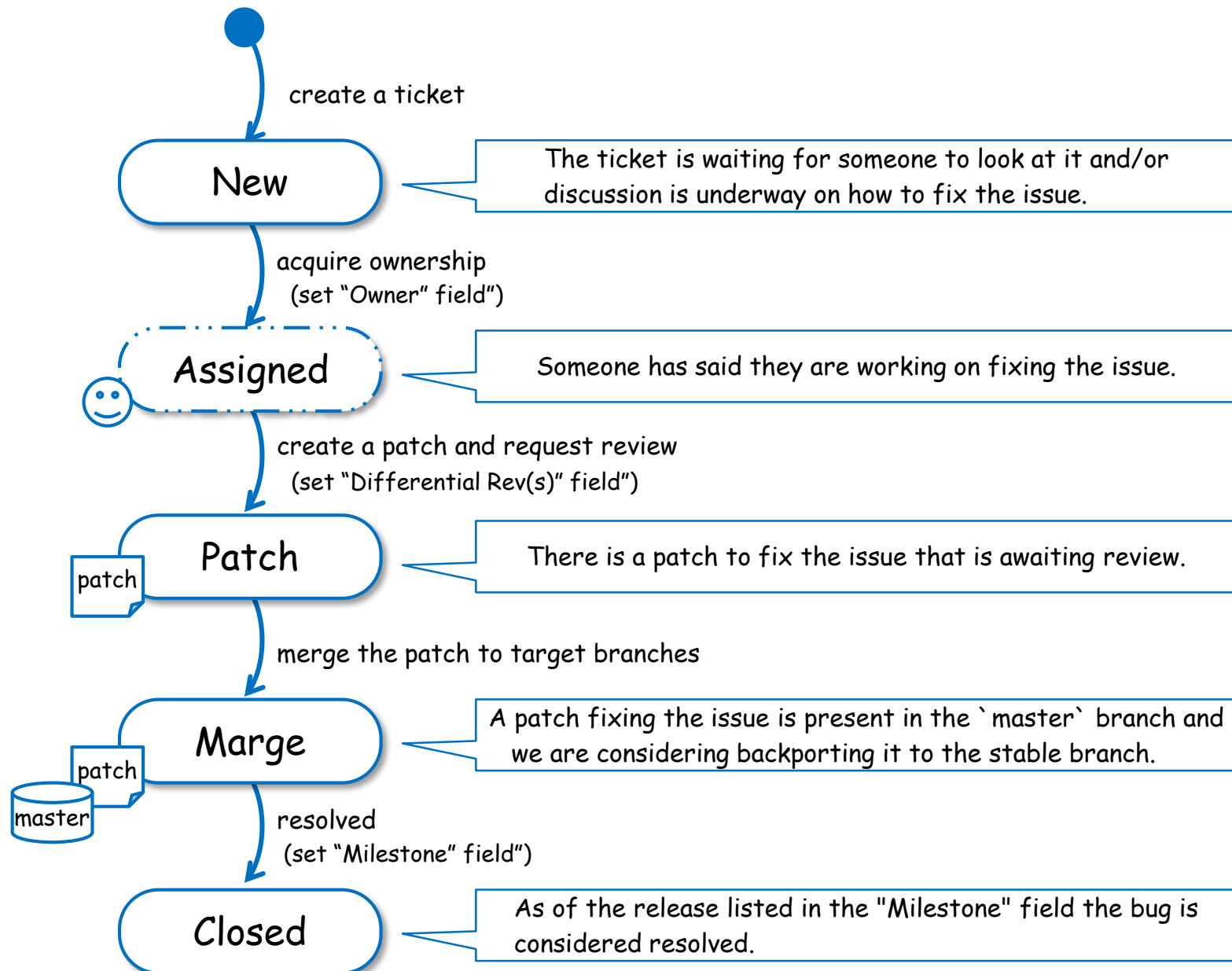
Report flow



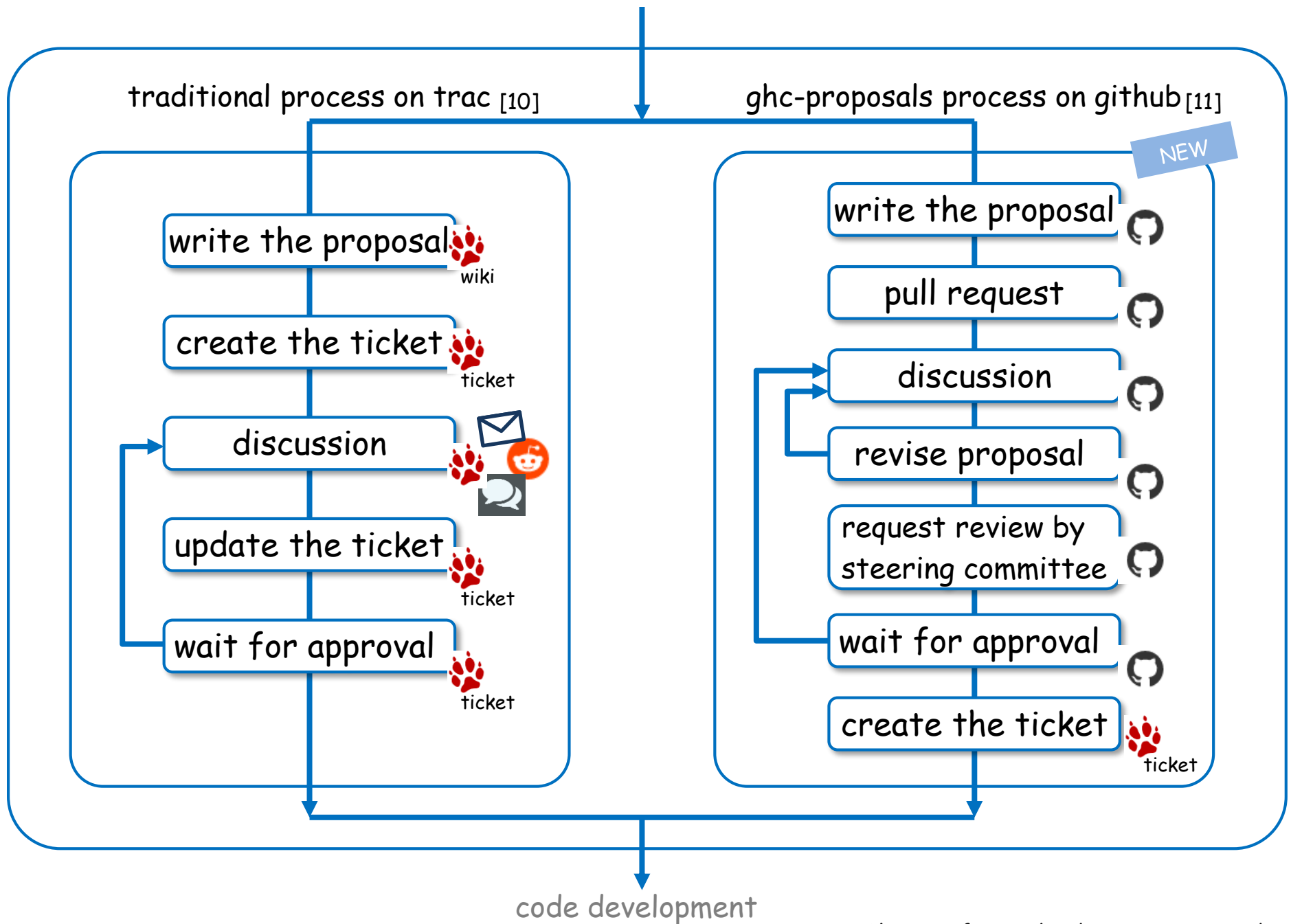
[1]

Please consult ghc-devs ML if you worry.

Various ticket states of trac [15]

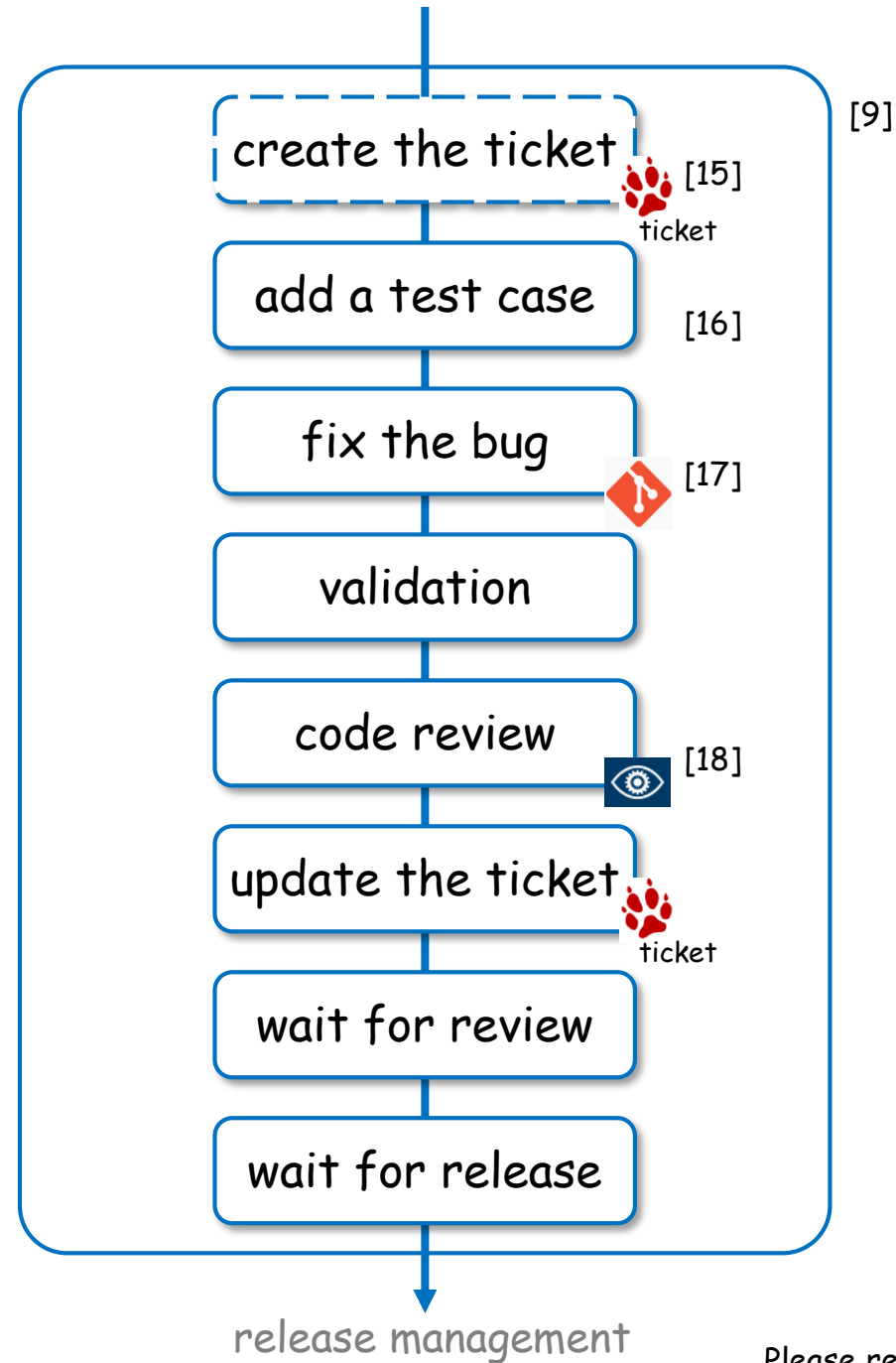


Proposal flow



Please refer to the documentation in details.

Patch flow



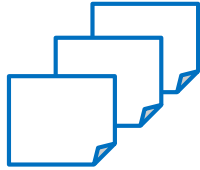
Please refer to the documentation in details.

Document development flow

Various documents

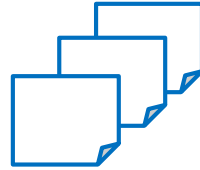
Haskell

Haskell wiki



wiki.haskell.org

Hackage documents

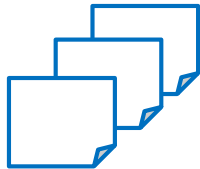


hackage.haskell.org

...

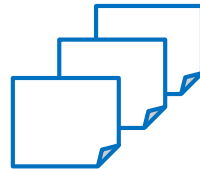
GHC

Trac wiki (GHC wiki)



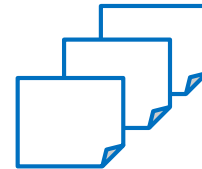
ghc.haskell.org/trac/ghc/wiki
[13]

The GHC users guide



[downloads.haskell.org/~ghc/
latest/docs/html/users_guide](http://downloads.haskell.org/~ghc/latest/docs/html/users_guide)
[28]

Core Libraries documents

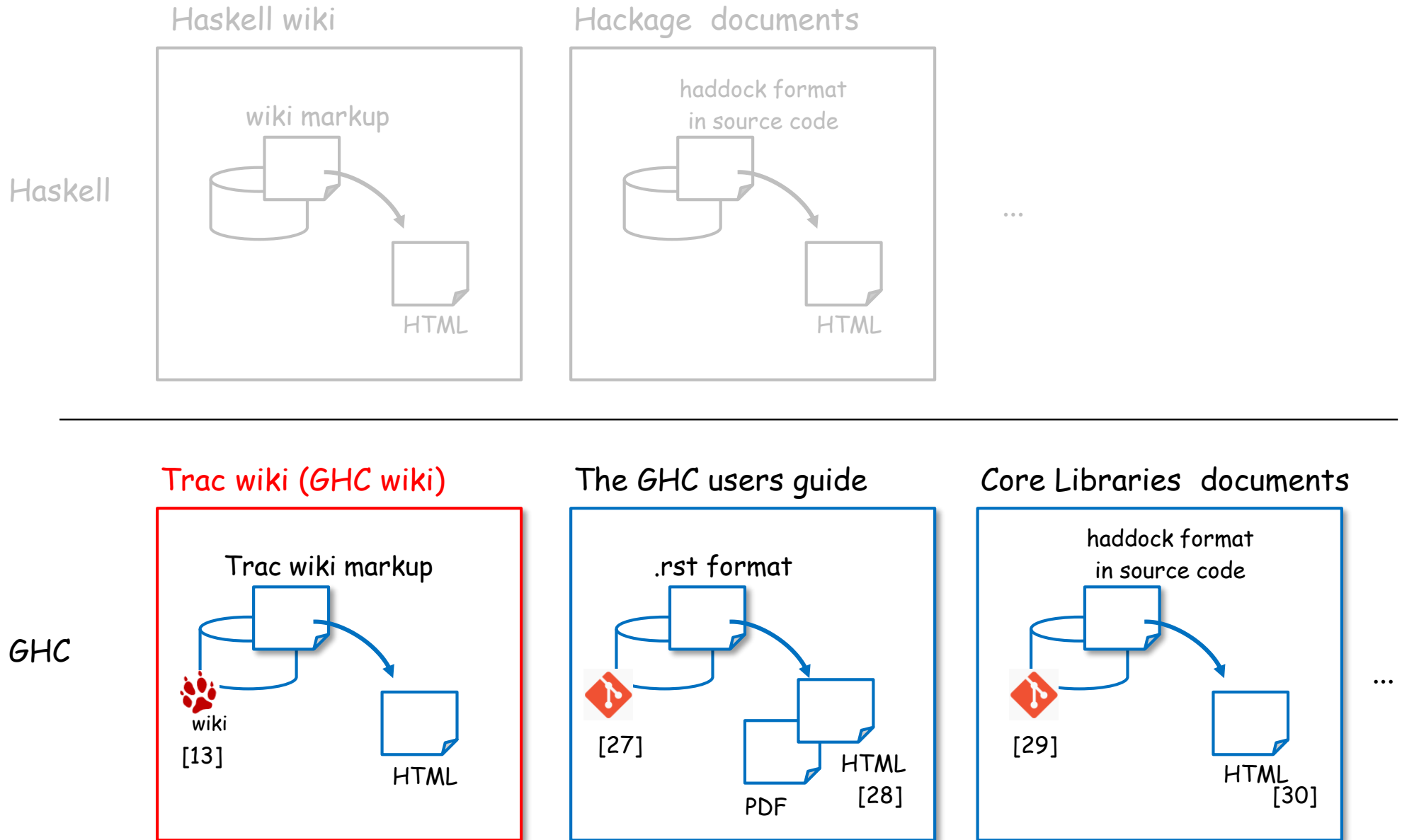


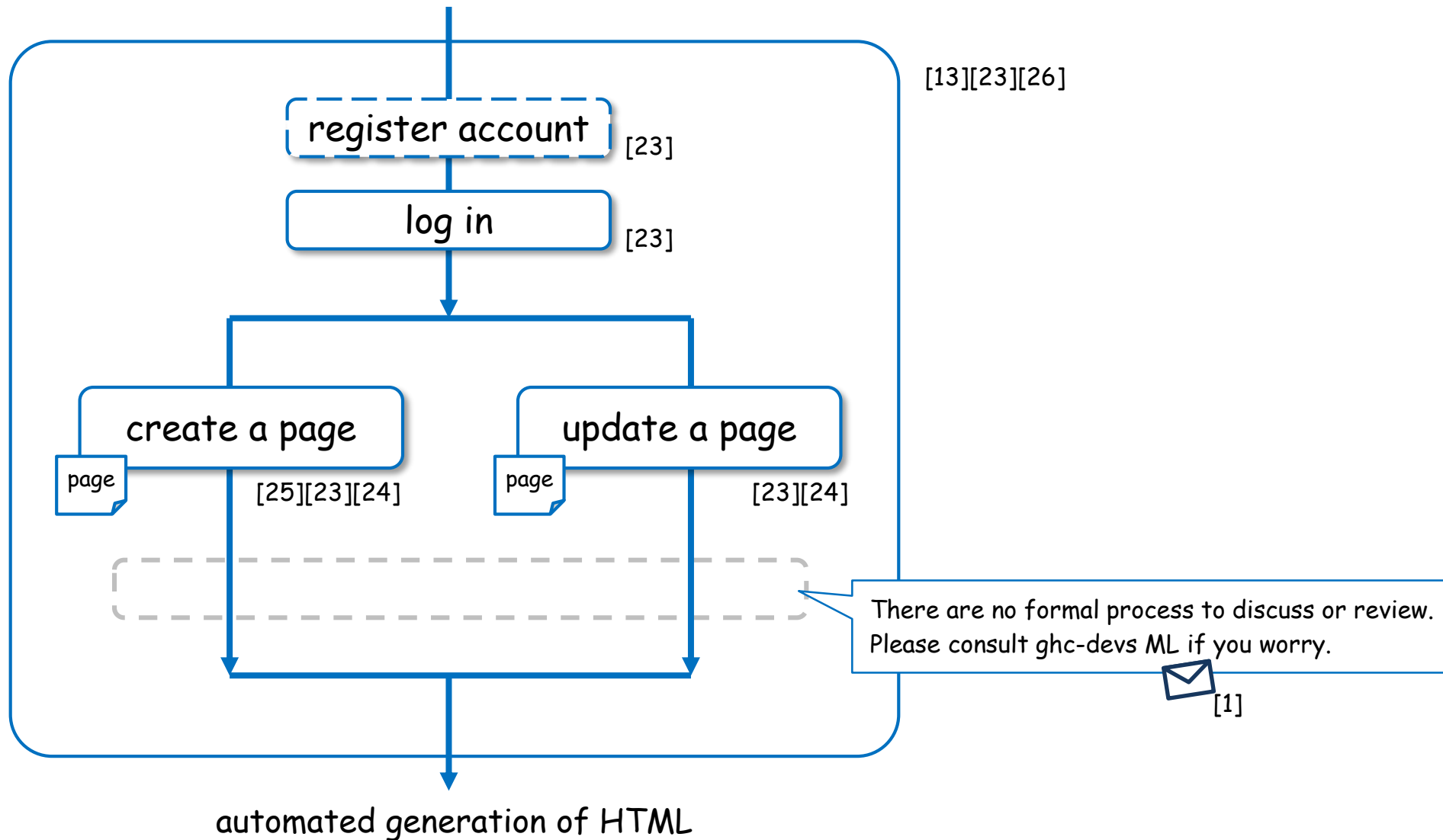
[downloads.haskell.org/~ghc/
latest/docs/html/libraries](http://downloads.haskell.org/~ghc/latest/docs/html/libraries)
[30]

...

about *GHC*'s implementation
* how *GHC* works
* how to modify it

Document development of GHC





Infrastructure tools

Tool relation

communication

discussion

ghc-devs ML



[1]

information

Trac (wiki)



[13]

wiki

issue tracking,
discussion and PR

Github



[11]

issue tracking
and discussion

Trac (ticket)



[15]

ticket

code review

Phabricator



[18]

phabricator cli

Arcanist



[18]

automated build

Harbormaster



[19]

code management

code repository

Git



[17]

performance regression

Perf

[22]

automated build

Travis



[20]

various builds

GHC builder

[21]

References

References

- [1] ghc-devs -- GHC development discussion
<https://mail.haskell.org/mailman/listinfo/ghc-devs>
- [2] Call for Nominations: GHC Steering Committee
<https://ghc.haskell.org/trac/ghc/blog/steering-committee-cfn>
- [3] Libraries -- Discussion about libraries for Haskell
<https://mail.haskell.org/cgi-bin/mailman/listinfo/libraries>
- [4] Core Libraries Committee
https://wiki.haskell.org/Core_Libraries_Committee
- [5] Haskell-prime -- Haskell' - A Haskell Standard Revision - discussion list
<https://mail.haskell.org/cgi-bin/mailman/listinfo/haskell-prime>
- [6] Welcome to Haskell'
<https://prime.haskell.org>
- [7] The Glasgow Haskell Team
<https://ghc.haskell.org/trac/ghc/wiki/TeamGHC>
- [8] Reporting bugs in GHC
<https://ghc.haskell.org/trac/ghc/wiki/ReportABug>
- [9] How to contribute a patch to GHC
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions/FixingBugs>
- [10] How to contribute a new feature to GHC
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions/AddingFeatures>

References

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<https://github.com/ghc-proposals/ghc-proposals>
- [12] Release management and branches
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions/Releases>
- [13] Welcome to the GHC Developer Wiki
<https://ghc.haskell.org/trac/ghc/wiki>
- [14] Developer's Infrastructure
<https://ghc.haskell.org/trac/ghc/wiki/Infrastructure>
- [15] The Bug Tracker
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions/BugTracker>
- [16] Adding new test cases
<https://ghc.haskell.org/trac/ghc/wiki/Building/RunningTests/Adding>
- [17] Using git with GHC
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions/Git>
- [18] Using Phabricator for GHC development
<https://ghc.haskell.org/trac/ghc/wiki/Phabricator>
- [19] Harbormaster: continuous integration & patch building for GHC
<https://ghc.haskell.org/trac/ghc/wiki/Phabricator/Harbormaster>
- [20] Travis
<https://ghc.haskell.org/trac/ghc/wiki/Travis>

References

- [21] The *GHC* Builder
<https://ghc.haskell.org/trac/ghc/wiki/Builder>
- [22] perf
<https://perf.haskell.org/ghc>

References

- [23] Notes on Trac Wiki formatting
<https://ghc.haskell.org/trac/ghc/wiki/TracWikiMisc>
- [24] WikiFormatting
<https://ghc.haskell.org/trac/ghc/wiki/WikiFormatting>
- [25] Steps to Add a New Wiki Page
<https://ghc.haskell.org/trac/ghc/wiki/WikiNewPage>
- [26] The Trac Wiki System
<https://ghc.haskell.org/trac/ghc/wiki/TracWiki>
- [27] source:ghc/docs/users_guide
https://ghc.haskell.org/trac/ghc/browser/ghc/docs/users_guide
- [28] Glasgow Haskell Compiler Users Guide
https://downloads.haskell.org/~ghc/latest/docs/html/users_guide
- [29] source:ghc/libraries
<https://ghc.haskell.org/trac/ghc/browser/ghc/libraries>
- [30] Haskell Hierarchical Libraries
<https://downloads.haskell.org/~ghc/latest/docs/html/libraries>

References

See also

- [31] Working on GHC
<https://ghc.haskell.org/trac/ghc/wiki/WorkingConventions>
- [32] Resources for newcomers to GHC
<https://ghc.haskell.org/trac/ghc/wiki/Newcomers>
- [33] Haskell :: Reddit
<https://www.reddit.com/r/haskell>
- [34] IRC Channels
<https://www.haskell.org/irc>
<http://ircbrowse.net/ghc>