Documentation and Example Codes

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Outline

- Users Guide Improvements
- Issue Tracking
- Quickstart
- Documentation Hierarchy
- Other Documentation Improvements
- Example Code Improvements
Users Guide Improvements
Users Guide Improvements

Background:
- Chapel 1.13 started including sections for a new users guide
- each subsequent release has included additional sections

This Effort:
- added new sections for:
  - promotion
  - constants (‘const’ and ‘param’)
  - type aliases
  - ‘config’ declarations
  - ‘const’, ‘var’, ‘type’, ‘param’

Next Steps:
- continue expanding coverage
Issue Tracking
Issue Tracking: Background

- Chapel’s supported bug-reports/tracking in several ways:
  - chapel-bugs@lists.sourceforge.net
  - JIRA
    - read-only for non-core developers
  - Bugzilla
    - Cray customers
  - STATUS.devel / future tests in repository

- The options for reporting bugs were lacking
  - Typical users could only report bugs via mailing list
    - Required transcription over to JIRA
  - More advanced users could open a PR for a future test
  - Cray users could use Bugzilla if they preferred
    - Required transcription over to JIRA when appropriate
Issue Tracking: This Effort

- Enabled GitHub Issues for the chapel-lang/chapel repo

- GitHub offers many advantages as an issue-tracker:
  - Integration with existing GitHub repository
    - Cross-referencing Issues / PR
    - Tagging GitHub IDs
  - Low barrier of entry
    - GitHub has a large user-base already familiar with Issues
  - High visibility
    - Easily discovered from the chapel-lang/chapel repository
  - Batteries included
    - Very little setup overhead necessary
    - Has almost all the features we need out of the box

- Started migrating JIRA issues and STATUS.devel
Issue Tracking: Impact

● Increased transparency
  ● More discussions are happening in public via Issues
    ● Increasing the involvement of non-core developers in discussions
  ● Issues are also tracking tasks, illuminating future plans for the project

● Better archiving
  ● GitHub search has been a vast improvement for our team
    ● Compared to JIRA and the mailing list archives
  ● Finding duplicates and cross-referencing them is much easier

● ‘easy’ labels provide starting point for new contributors
  ● this year’s Google Summer of Code applicants have used these
Issue Tracking: Status and Next Steps

**Status:** Active and well-received by team and community

- Most developers are finding it more productive
- Total JIRA issues: **297**
  - Started March, 2015
- Total GitHub issues: **260**
  - Started December, 2016

**Next Steps:** Improve processes surrounding issue-tracking

- Migrate remaining public issues from JIRA and STATUS.devel file
- Possibly discontinue using JIRA in favor of private GitHub Issues
- Set up a long-term strategy for detecting new user-issues
- Continue to tune process
  - Milestones
  - Labels
  - Associating futures with issues
Quickstart
Quickstart

**Background:** QUICKSTART.rst was a top-level document
- Contained many sphinx cross-references that looked odd on GitHub
- Complicated docs-build, since we included it in the html-docs
  - ‘make docs’ resulted in copying the file into the docs-directory
  - Relative file paths lost context in the docs-directory version

**This Effort:** QUICKSTART.rst moved into the doc-directory
- The top-level README points to the online URL (preferred)
- The doc-level README points to restructured text file path

**Impact:** Improved QUICKSTART.rst and simplified docs build
- Users are now consistently pointed to the preferred online version
  - Users are never pointed to the GitHub-rendered version
- QUICKSTART.rst does not get moved or copied in ‘make docs’
Documentation Hierarchy
Documentation Hierarchy

Background: Documentation hierarchy was asymmetric

● In release, HTML documentation did not mirror text-documentation

```
  doc/
  ├── *.rst
  │   └── platforms/
  │       └── technotes/
  │           └── html/
```

● Also, developer and user views of documentation hierarchy differed

   ● GitHub / developer:

```
  doc/
  └── release/  // things intended for the release
     └── foo.rst
  └── developer/  // things not intended for the release
     └── .../  // etc.
```

   ● Release / user:

```
  doc/
  └── foo.rst  // release contents moved to top-level
```
Documentation Hierarchy

**This Effort:** Documentation hierarchy is now symmetric

- HTML documentation mirrors text-documentation
- Developer view is now consistent with user view

```
doc/
    └── README.rst
    └── rst/
        └── foo.rst
    └── html/
        └── foo.html
```

**Impact:** Documentation is more organized and consistent
Other Documentation Improvements
Other Documentation Improvements

● **Online documentation**
  ● bugs.rst now refers users to GitHub Issues
  ● Improved Docker README information
  ● Reorganized and categorized platform-specific documentation
  ● Unified references to download.html rather than install.html
  ● Improved some entries in “Quick Reference” document

● **Library documentation**
  ● Documented ‘dim()’ and ‘dims()’ on arrays
  ● Fixed ‘string.strip()’ documentation
  ● Updated documentation w.r.t. memory management of files/channels
  ● Added indication that IO module is used by default
Example Code Improvements
Example Code Improvements

- **learnChapelInYMinutes**
  - Added examples, fixed an incorrect one
  - Various comment, style, and formatting improvements

- **Updated example codes to:**
  - Use new ‘RandomStream()’ initializer
  - Use ‘deinit()’ rather than destructors
  - Reflect better const-checking
  - Reflect that ‘Barrier’ is now a record

- **Makefiles**
  - Fixed parallel build of examples directory
  - Fixed FFTW build target
  - Added missing Makefile to examples/patterns directory
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