

LabKey User Conference 2019

LabKey Development Process

October 4, 2019



Agenda

- Overview
- Developing Features
- Releases
- Future Directions

Overview: Managing code changes



- Large product team: 15 developers, 4 testers, 2 PM's
- 619 pull requests in 19.2.0, on track for > 700 in 19.3.0
- Challenging to keep the platform in a shippable state
- Balancing stability and feature delivery

Overview : Transition to Git



- Started using git 6.5 years ago
- Migration from ant to gradle
- Major investment in svn->git migration
- 2019 is the first year we have been able to take advantage of git on a large scale
- Other process improvements : scrum->kanban



- Result has been increased stability on trunk
- Larger refactors/features are more approachable
 - provisioned sample sets
 - immutable table info
 - security improvements (CSRF, HTML encoding)

Developing Features

Feature Lifecycle Overview



- Feature Proposal
- Backlog Grooming
- Spec Writing and Estimation
- Development and Acceptance Testing
- Merging and Branch Protection
- Regression Testing
- Delivery and Ongoing Maintenance

Feature Proposal

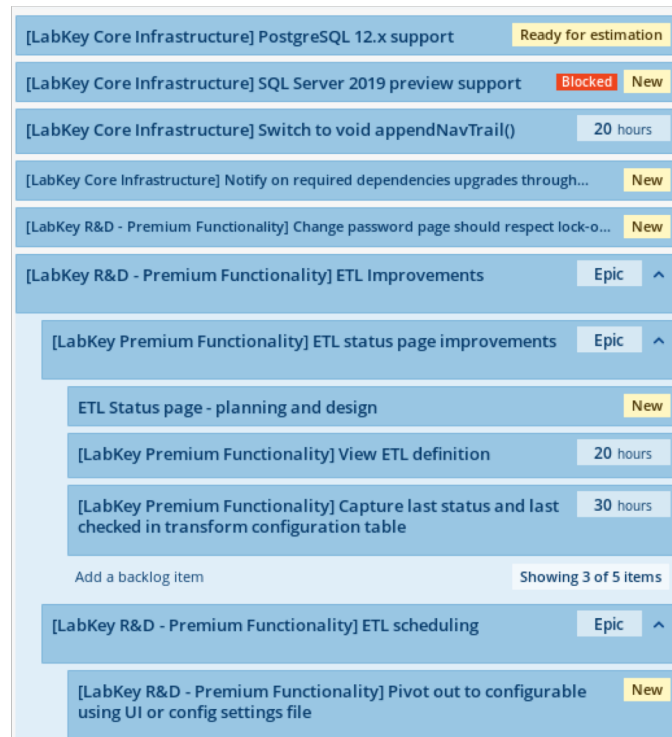


- Define high-level requirements
- Add feature to company backlog
 - Assign to specific team backlog if particular expertise is needed
- Provide initial estimate of effort required
 - Large projects ("Epics") are split up into manageable sub-projects ("Stories")

Backlog Grooming



- Teams meet periodically for backlog "grooming"
 - Update priorities
 - Re-assign
 - Refine estimates
 - Remove obsolete stories



Spec Writing and Estimation

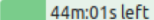


- Feature Specification
 - Requirements
 - Functional Design
 - Implementation Plan
 - Test Plan
- Divide story into small tasks
 - Small tasks are easier to estimate
 - Provides a more reliable progress indicator

Development and Acceptance Testing



- Use Git to develop features in isolation
- Targeted tests run throughout development

Build number	Branch / Status	Changes / Agent	Started	Duration
#26425	tempTableInClauseRollbackFix Tests passed: 293; :server:testAutomation:ci...	4 changes linux-i-02887b...08afe	 44m:01s left	
#26398	tempTableInClauseRollbackFix Tests failed: 1 (1 new), passed: 344	4 changes linux-i-0baa29...12d3b	27 Sep 19 15:21	1h:03m:34s 
#26378	tempTableInClauseRollbackFix Tests passed: 345	15 changes linux-i-0760df...14579	26 Sep 19 19:31	1h:05m:10s 

- Manual Testing to verify new functionality

Pull-request and Branch Protection



- GitHub Pull-request
- Merge new feature into mainline branch!

Issues 37481 and 37810: grid selection with filtering paging #442

labkey-susanh wants to merge 7 commits into develop from fb_gridSelection_37810

Conversation 6 Commits 7 Checks 0 Files changed 3

labkey-susanh commented 6 days ago Member + @ ...

Adds option for getting selected items and clearing selected items when looking at a filtered view.

labkey-susanh added 4 commits 7 days ago

- Enhance clearAll and getSelected to work with a queryView as well 038db4f
- For ge b09925b
- Merge d1e61d5
- Merge a1a46c1

All checks have failed 1 errored check

build (TeamCity) — Finished TeamCity Build LabKe... Details

labkey-susanh requested a review from cnathe 6 days ago

Merge branch 'develop' into fb_gridSelection_37810 829f304

cnathe requested changes 2 days ago View changes

```
query/src/org/labkey/query/controllers/QueryController.java
5096 - return new DataRegionSelection.SelectionResponse(0);
5195 + if (form.getQueryName() == null)
5196 + {
5197 +     DataRegionSelection.clearAll(getViewContext(), form.getKe
```

cnathe 2 days ago Member + @ ...

What is an example of a case that would go into this if statement, i.e. a call to SelectNone where queryName is null?

Regression Testing



- Extensive regression testing is performed nightly on mainline branch
 - Fix regressions caused by new feature
- Automated tests are written to cover new feature

Delivery and Ongoing Maintenance



- Regression tests are in place and will verify functionality throughout the life of the feature
- Ready for inclusion in the next LabKey release!

Releasing Software

Releases



- Mechanism to deliver functionality to clients and community
- Historical types
 - Major : every 4 months
 - Sprint : monthly from trunk
 - Hotfix : as needed to fix high-priority issues
 - Modules branch : client module-specific changes

Releases



- Artifact naming standard was problematic
- Difficult to determine the changes contained in an installer build
- Adopted elements of semantic versioning
 - incorporation of a patch number
 - `<major>.<minor>.<patch>`



Adoption of semantic versioning for our build artifacts

	Before	After
Alpha/Sprint	19.1	19.1Alpha2
Release candidate	19.1	19.1Beta
Major release	19.1	19.1.0
Maintenance/patch	19.1	19.1.1



Maintenance releases

- 6 scheduled per major release cycle
- Allows deployment of fixes/features to our clients
- Improves our ability to track changes in releases

Releases



LabKey Releases

			Design	Delete All Rows	
☐	Name	Base Branch			
☐	19.3.0	develop			
☐	19.2 Beta	develop			
☐	19.2 Alpha 3	develop			
☐	19.2 Alpha 2	develop			
☐	19.2 Alpha 1	develop			
☐	19.2.4	release19.2-SNAPSHOT			
☐	19.2.3	release19.2-SNAPSHOT			
☐	19.2.2	release19.2-SNAPSHOT			
☐	19.2.1	release19.2-SNAPSHOT			
☐	19.2.0	develop			
☐	19.1 Beta	develop			
☐	19.1 Alpha 3	develop			

Repository	Base Ref Name	Updated At	Author	Title
biologics	release19.2-SNAPSHOT	2019-08-09	labkey-tchad	Update test for new search behavior
biologics	release19.2-SNAPSHOT	2019-08-05	labkey-kevink	Issue 38097: ~q filter slow for large lookup target
biologics	release19.2-SNAPSHOT	2019-08-01	labkey-tchad	Allow test data to be loaded on server running in production mode
cdisc_ODM	release19.2-SNAPSHOT	2019-08-12	labkey-klum	Dynamically compute visit ranges
cloud	release19.2-SNAPSHOT	2019-08-12	labkey-jeckels	Issue 38230: Caching of BlobStores in CloudManager causes the
commonAssays	release19.2-SNAPSHOT	2019-08-09	labkey-kevink	Issue 38209: reduce queries when linking FCS files to samples
commonAssays	release19.2-SNAPSHOT	2019-08-01	labkey-kevink	Issue 37043: Filtered lookup not working within the assay upload
harvest	release19.2-SNAPSHOT	2019-08-13	labkey-klum	fix github pull request to include module containers
mobileAppStudy	release19.2-SNAPSHOT	2019-08-14	labkey-ians	5892: OAuth response forwarding
nci	release19.2-SNAPSHOT	2019-08-09	labkey-klum	Fb conditional branching (#53)
nlp	release19.2-SNAPSHOT	2019-08-13	labkey-klum	work around for yuicompressor issue
nlp	release19.2-SNAPSHOT	2019-08-09	labkey-klum	Fb conditional branching (#133)
platform	release19.2-SNAPSHOT	2019-08-14	labkey-klum	QC state scoping fixes for test and product. Dropdown was not t
platform	release19.2-SNAPSHOT	2019-08-14	ilikepies101	Issue 38218: Print preview bugfix into 19.2
platform	release19.2-SNAPSHOT	2019-08-13	labkey-jeckels	Issue 38233: Only show pivot columns in PTM reporting for sam
platform	release19.2-SNAPSHOT	2019-08-13	labkey-matthewb	Fb button cleanup
premium	release19.2-SNAPSHOT	2019-08-14	labkey-tchad	Issue 38177: Assay QC states not scoped correctly
premium	release19.2-SNAPSHOT	2019-08-12	labkey-klum	Assay QC states not scoped correctly

Future Directions



- Wrap up git migration
- Improved support for building against binaries
- Migrate to new javascript API
- Improved tooling to manage enlisting and branching

Questions?