TestDevLab

Testing in Agile Mobile app development

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Senior QA engineer

About me

- Senior QA engineer and Team lead
- 4,5 years in TestDevLab for various worldwide projects
- Professional Master degree in IT and several certifications in Testing, Test management and Agile/Scrum
- Experience in setting up and managing Testing processes from scratch for Agile teams

Agenda

- Quality issues for projects
- Test Automation
- CI
- Test pipeline
- Monitoring

When I joined the team

- Poorly documented test cases
  1 excel sheet with ~30 test case summaries (no steps)
- Team not aware of most issues in the app
- No defined process to fix bugs
- What is automation?

Key problems for Agile tester

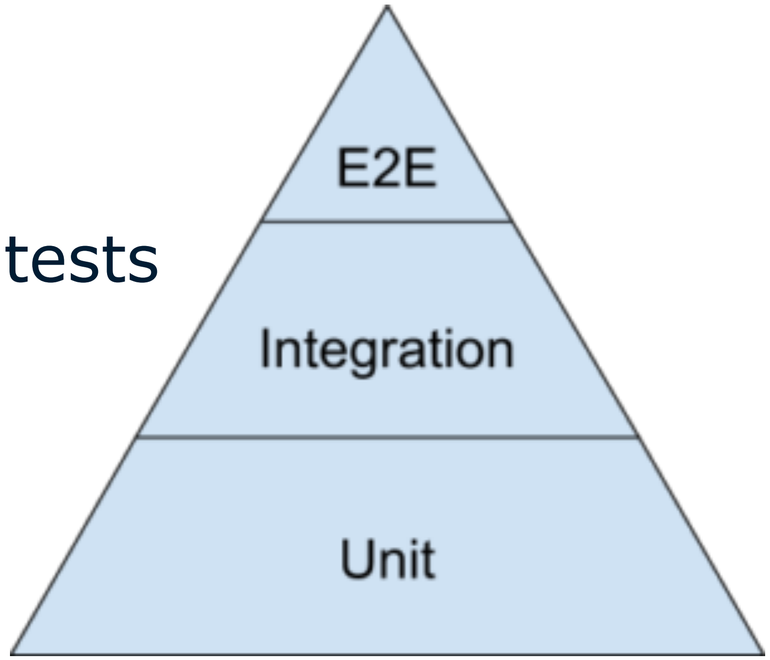
- Poor code or build quality
- Late feedback about app issues
  - Regression tests take a lot of time
  - Communication issues of distributed teams
- No Automation
- Automating too much
- Testing customer bugs

Testing occurs throughout app development.. and even in production

- We can test our process
- Validate development outcomes
- Monitor, track logs, alert

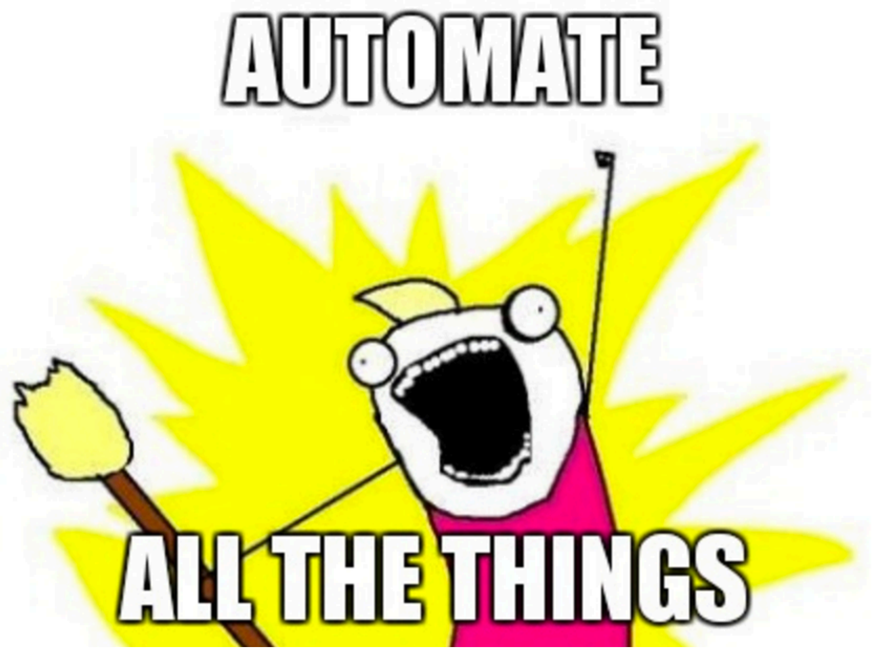
Building your test pipeline

- Start with widest test set and deal responsibilities
- Unit tests can be executed in seconds
- Integration tests considered also as API tests



Acceptance test automation

- 100% Automation coverage?
  - Too many possible scenarios and combinations
  - Frequent changes
  - Hard to maintain
- Proof that nothing is broken



Source: https://www.sqlstad.nl/powershell/easier-installation-for-pssqllib/

Acceptance test automation

- Prioritise and automate critical business scenarios
- Insert test data via API or directly in DB
- Keep tests stable
  - Fix flaky tests immediately or remove them
  - Cyclic execute tests (nightly/hourly)

Device laboratory

- Virtual devices (Simulators/Emulators)

  vs

- Cloud devices

  vs

- Real devices

Maintaining device laboratory

- Run tests under real world conditions
  - Cover top OS versions and device manufacturers
  - Execute simultaneously
- Smart Hub
  - Adjust charging time and capacity
  - Remotely controllable
- No limitation for device usage


Acceptance tests
_Android_Acceptance_Tests
2 builds have failed
#1657
5 hours ago
_Desktop_Acceptance_Tests
48 builds have failed
#1262
6 days ago
_IOS_Acceptance_Tests
#1608
36 minutes ago

CI - Test branches

- Each branch from code repository has corresponding job in CI
  - Once created, it appears in CI system
- Updated with each commit
- Devs can test their code before PR

Jenkins

GitLab

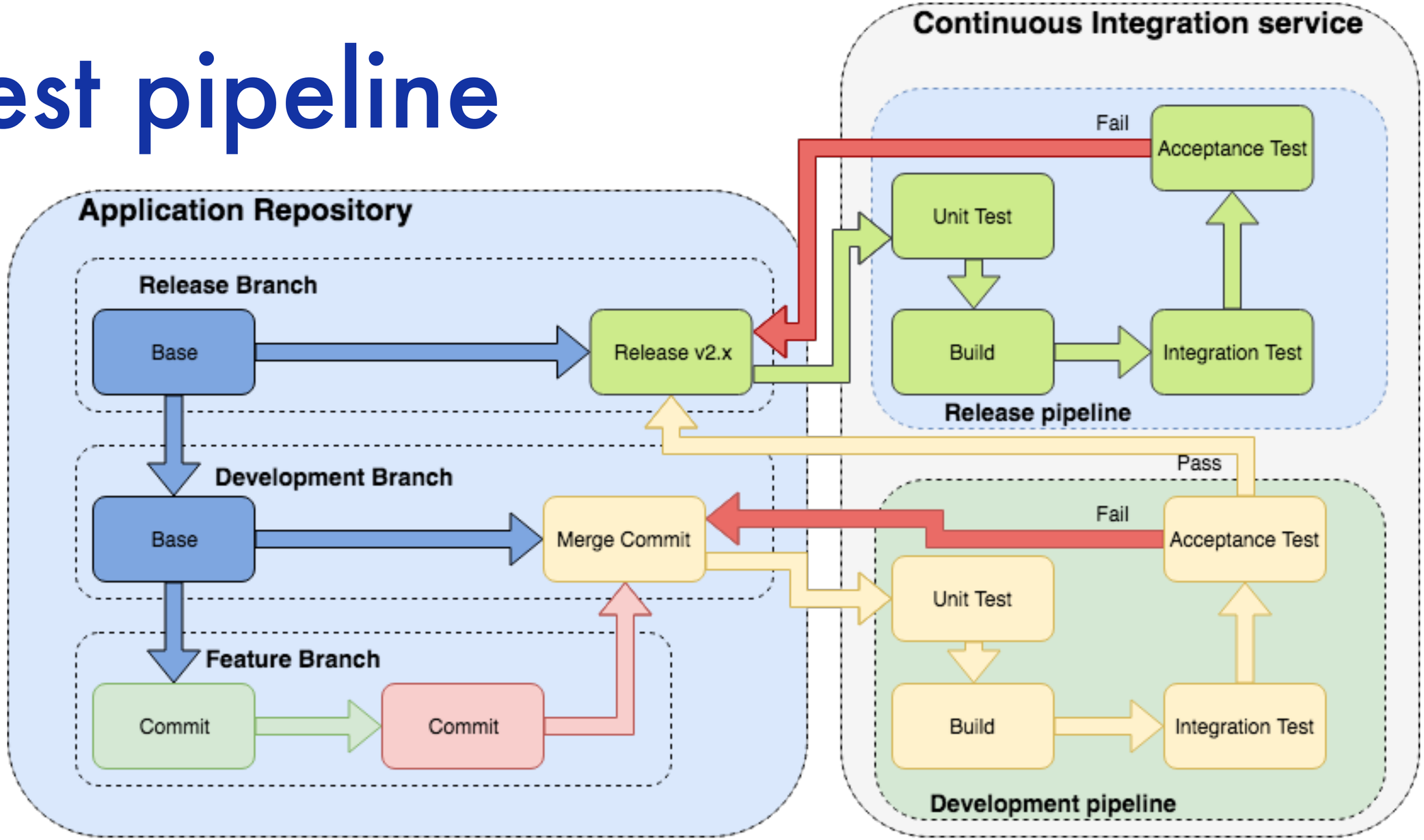
circleci

TeamCity

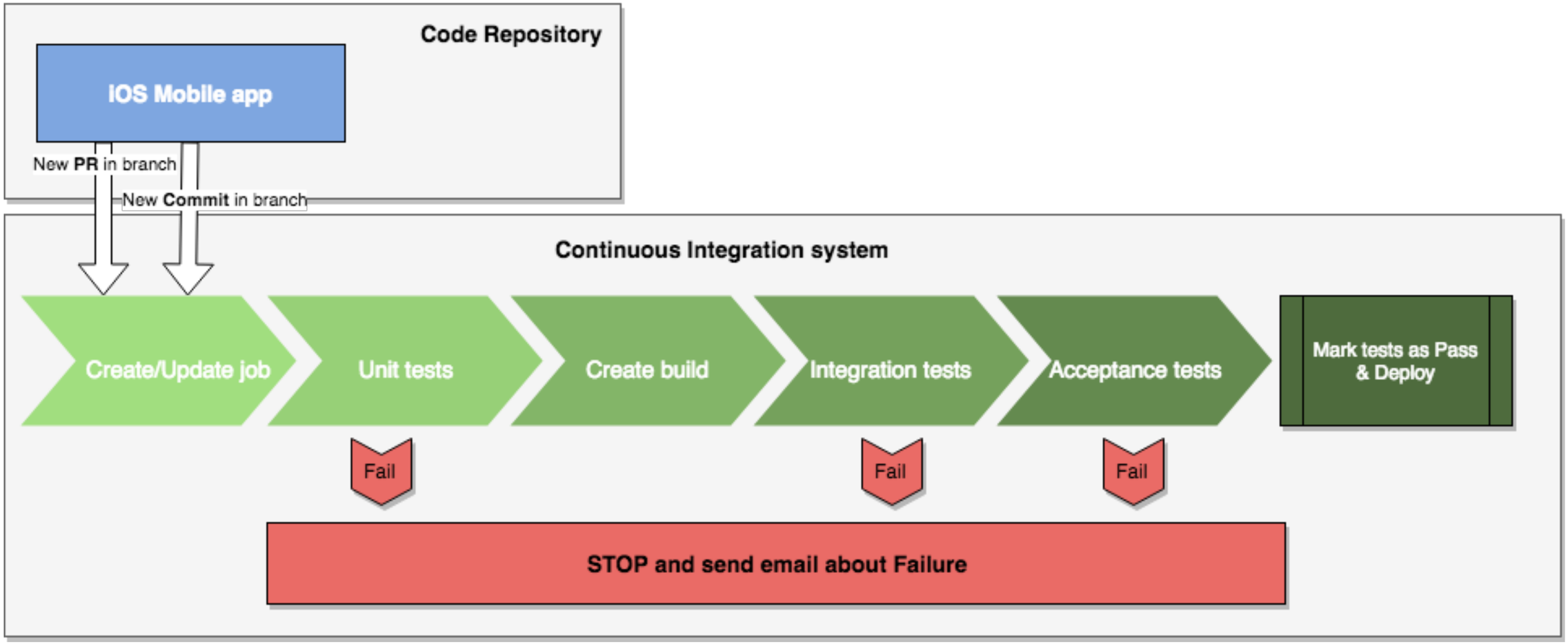
CI - Build triggers

- Master and Development branch with automatic build triggers
- Each PR and commit starts test
- Test results posted in code repository

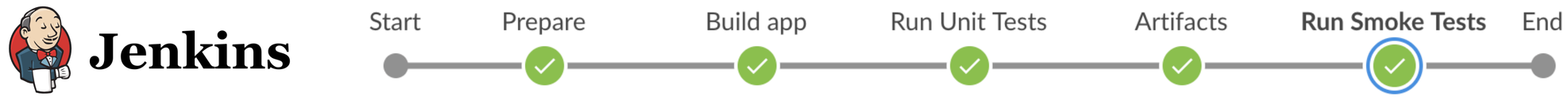
Test pipeline



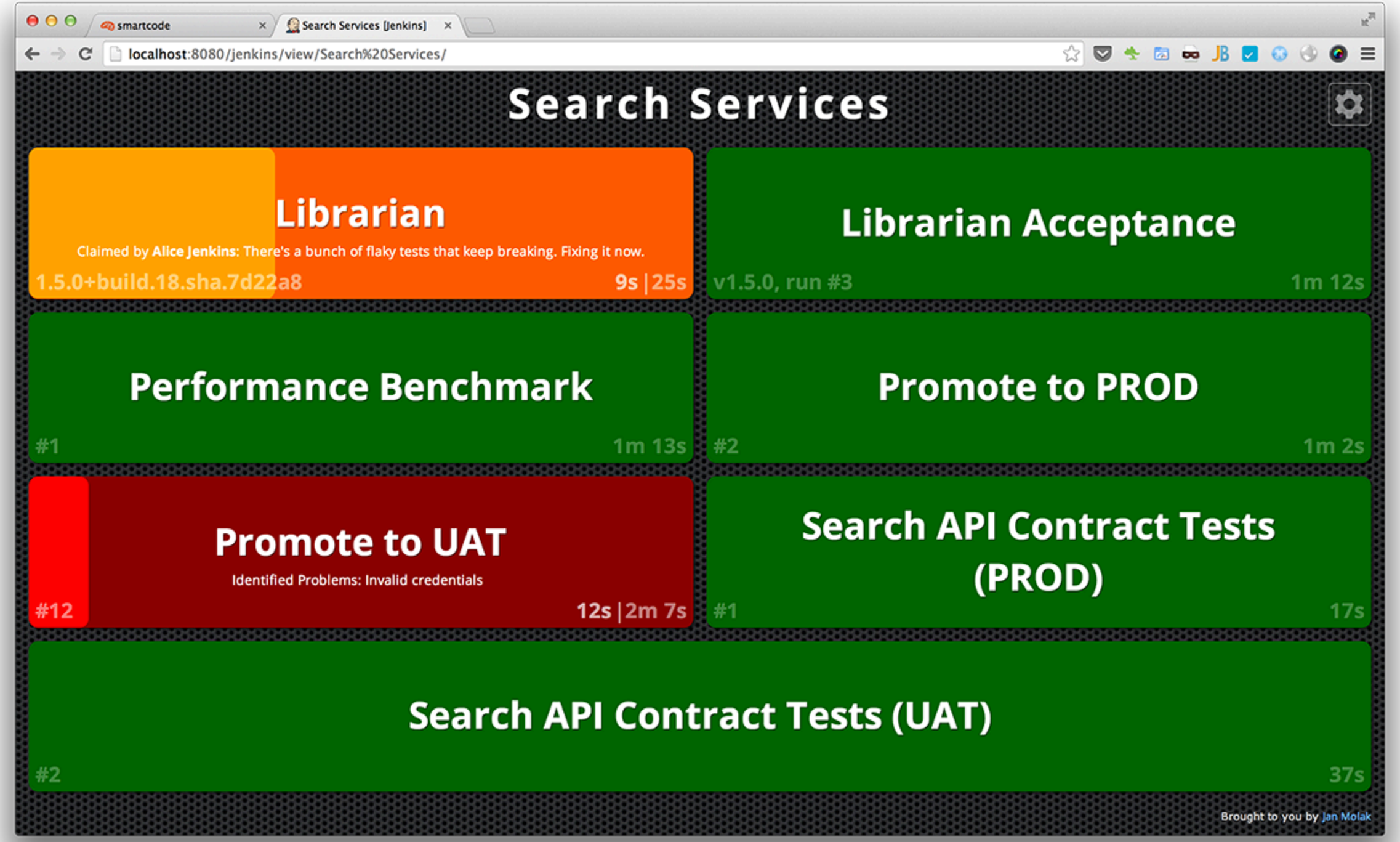
Test pipeline

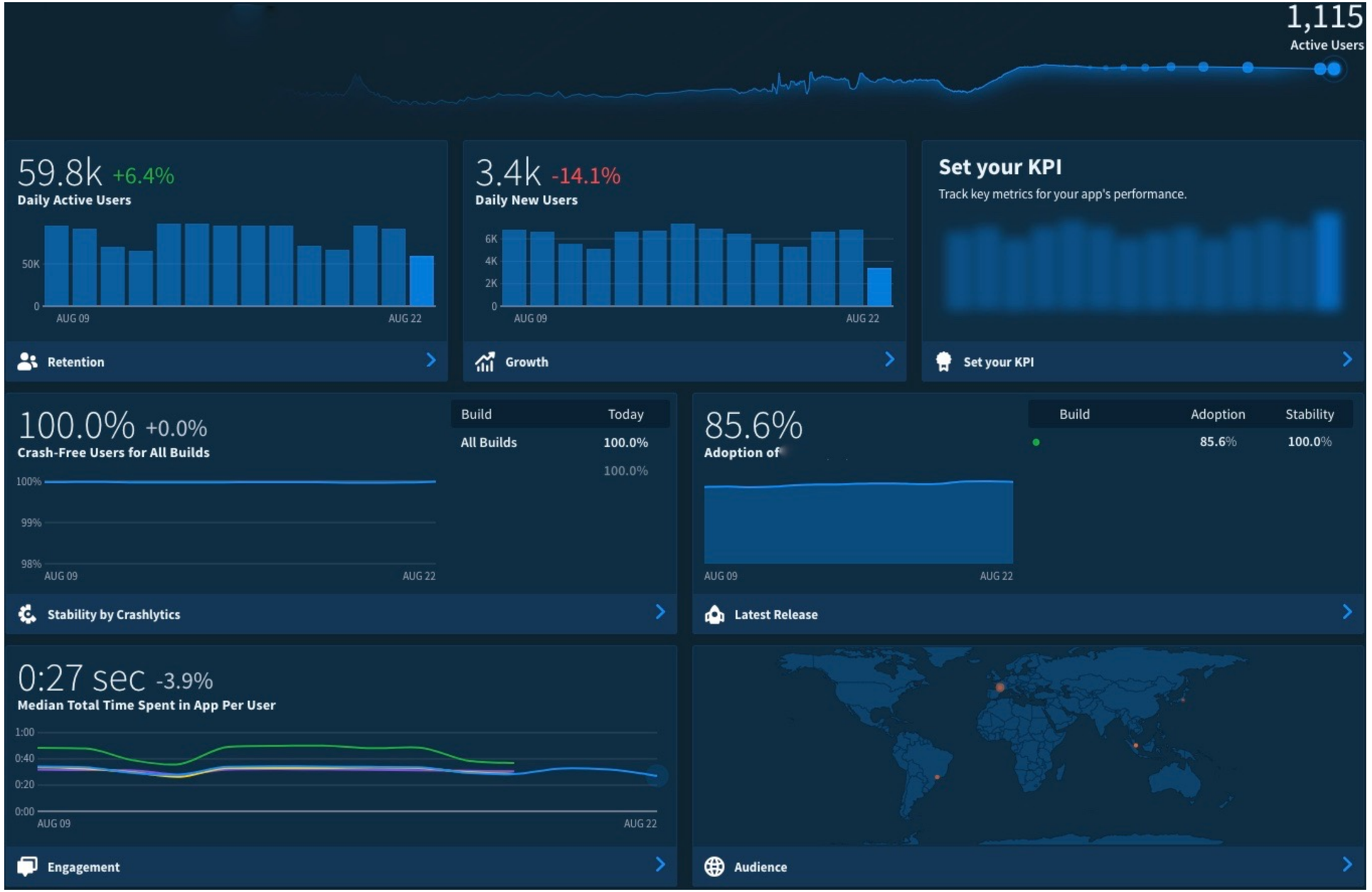


Test pipeline



	Prepare	Build app	Run Unit Tests	Artifacts	Run Smoke Tests
Average stage times: (Average full run time: ~31min 3s)	49s	3min 0s	11min 54s	2min 7s	17min 57s
#14 Aug 16 13:32 No Changes	12s	2min 41s	9min 4s	3min 41s	15min 17s
#13 Aug 16 09:35 No Changes	12s	2min 47s	41ms	34s	20min 37s failed


smartcode
Search Services [Jenkins]
localhost:8080/jenkins/view/Search%20Services/
Search Services
Librarian
Claimed by Alice Jenkins: There's a bunch of flaky tests that keep breaking. Fixing it now.
1.5.0+build.18.sha.7d22a8
9s | 25s
Librarian Acceptance
v1.5.0, run #3
1m 12s
Performance Benchmark
#1
1m 13s
Promote to PROD
#2
1m 2s
Promote to UAT
Identified Problems: Invalid credentials
#12
12s | 2m 7s
Search API Contract Tests (PROD)
#1
17s
Search API Contract Tests (UAT)
#2
37s
Brought to you by Jan Molak


1,115
Active Users
59.8k +6.4%
Daily Active Users
50K
0
AUG 09
AUG 22
Retention
3.4k -14.1%
Daily New Users
6K
4K
2K
0
AUG 09
AUG 22
Growth
Set your KPI
Track key metrics for your app's performance.
Set your KPI
100.0% +0.0%
Crash-Free Users for All Builds
100%
99%
98%
AUG 09
AUG 22
Build
Today
All Builds
100.0%
100.0%
Stability by Crashlytics
85.6%
Adoption of
AUG 09
AUG 22
Build
Adoption
Stability
85.6%
100.0%
Latest Release
0:27 sec -3.9%
Median Total Time Spent in App Per User
1:00
0:40
0:20
0:00
AUG 09
AUG 22
Engagement
Audience

Conclusion

- Communication is key and everyone is responsible for quality
- QA is quality coach in agile teams
- Have proper set of tests at each level
- Be careful of acceptance tests automation
- Invest in testing - reduce release time & improve quality

Thanks!

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