Agile Automation

What does “Agile” automation mean?

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Who am I?

- Background in Quality Assurance
- Software development using Agile and Lean
- Passionate about process and efficiency improvement
- Worked at:

  - realestate.com.au®
    - Australia lives here
  - seek
  - MYOB®
  - Devtest International
  - Coles Financial Services
What am I talking about today?
Why do we test?

- Make sure the product meets expectations
- To ensure that the system is robust
- To mitigate risk of failure
- Gain confidence in the product

Why do we automate?

- Remove manual repetition
- Speed up the feedback loop
- Enable confidence in the product before releasing
- Enable manual testing to focus on where it is needed
What effect does Agile have?

- What flavour of Agile? Lean? XP? RAD?
- Shorter lifecycle between requirements definition and delivery
- Nature of Agile is ‘adaptive to change’
- Less time for up front framework design and creation
- Less predictability in an evolving environment
- Increased dependency on rapid regression testing
- Reduced dependency on monolithic frameworks
- Team’s group ownership of Quality
Who does the automation?

- QA vs Dev vs Dedicated automation team?
- Build Quality In – no separation of dev and test effort
- The story isn’t ‘Done’ until it is tested accepted
- QA = Quality Assistance
- “Developers own the Acceptance Tests” – Dave Farley

Analyst / Customer

Developer

Tester

Product Owner

Elaboration / Specification

Acceptance Criteria

High Performing AGILE

Automation

Business Analyst

Developer

Tester

Code
Unit Testing
Security
Performance
Automation
Manual Scripted
Exploratory Testing
Requirements
Customer
What should we automate?

I spent the week writing a test script for our product.

And I wrote a test script to test Dilbert's test script.

Your script was almost perfect. Keep up the good work, buddy.
What should we automate?

- How much is enough?
- Is 100% test automation viable?
- Value Based approach
  - Critical Path – Highest Value
- Test at the right level
- Focus on “What” not “How”
- Keep your tests small
  - Quicker to write and run
  - Easier to maintain
  - Easier to identify what the problem is
- Review tests at all levels
  - Make sure they are testing the right thing
When do we automate?

Planning and Writing

- As early in the development process as possible
- TDD has automation written before development
- BDD has automation occurring at the same time as requirements definition
- Don’t separate test effort from dev effort

Execution

- Execute Locally, before every check-in/commit
- Continuous Integration / Deployment means every build
- Parallel execution enables running more tests quicker
How do we automate?

**Pre-requisite**: Make sure the SUT is testable

- Make sure the toolset chosen is Fit for Purpose
- BDD is perfect for some scenarios, not for all
- TDD is perfect for technical people, but not for everyone
- Contract driven development – automated integration testing at a unit test level
- Use stubbing as much as appropriate
How do we automate? (cont..)

- Create Atomic tests – self reliant, can run anywhere, are repeatable
- Test Data management
  - To create or to prepare
- Setup, verification and tear-down through the UI layer is expensive. Other options? e.g.:
  - Direct API access
  - Code/DLL hooks
  - Headless execution
  - Direct DB access (if no other option)
Where should we automate?

- “Production-like” environment

> Decision affected by:

  - Solution Architecture – i.e.: Micro-services vs. Monolithic
  - Difference between Dev and Prod environments
  - Number of different integration points
  - Data Access restrictions
  - Cloud vs Physically hosted

- Environment Management (eg: Who owns a shared staging environment?)

- QA pairing with DevOps – confidence in deployment process

- “Cattle, not Pets”
Closing thoughts

- Automation should be BAU
- Make sure it’s Fit For Purpose
- Don’t lose site of the reason you are automating
- Make sure your automation is focused at the appropriate level
- Make sure the results are visible
- Automation of build/deployment process equally important
- Alerts and Monitoring are also equally important

- Have fun doing it!!
Questions

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