

Continuous Testing in Agile Software Development

Jeff Nielsen

Digital Focus

<http://www.digitalfocus.com>

My background

SallieMae

Capital One

FannieMae

CSX

VeriSign

America Online

GANNETT

BT

ARBITRON

MCKESSON

FHLBANKS
OFFICE OF FINANCE

- Chief Scientist at **digital focus**
experience agile.
- 19 years in SW development
- Led or coached agile teams at a variety of clients

Teams that adopt agile development often experience tremendous quality gains

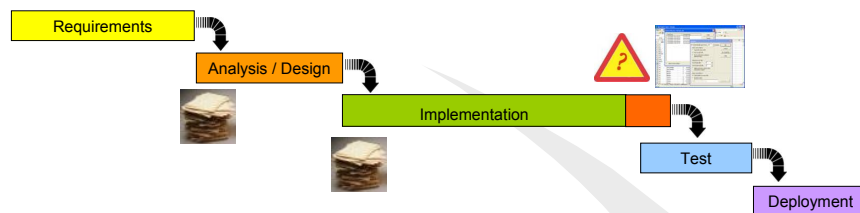


"I'm still not sure how well all of these practices will fit in our environment, but certainly the agile testing approach is head and shoulders above anything we've ever done here before."

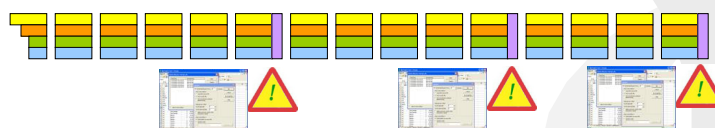
--Director at a Fortune 500 company

Agile rejects the notion of distinct, activity-specific phases to scale a software project

Phase-Based approach



Incremental/Agile approach



Candle dipping illustrates the process of “growing” a product incrementally



With agile, testing is a *continuous* part of the team's day-to-day work

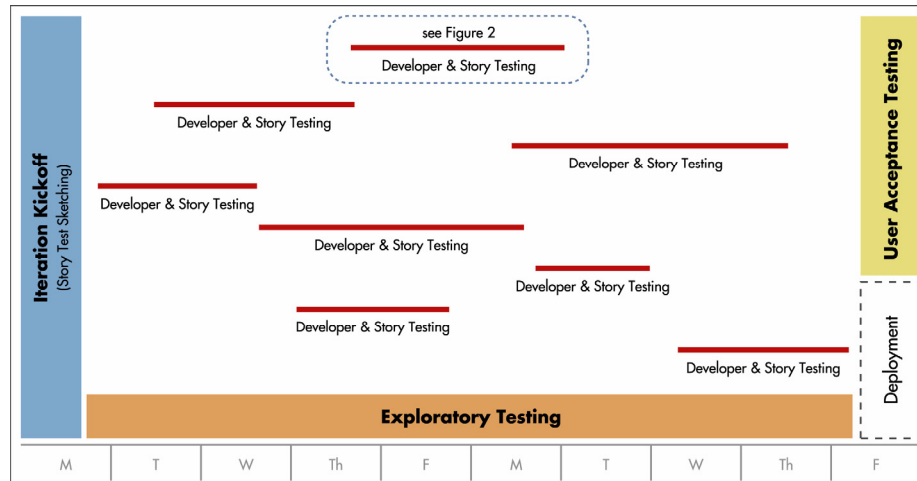
At least four levels:

- ✓ Developer testing
- ✓ Story testing
- ✓ Exploratory testing
- ✓ User acceptance testing

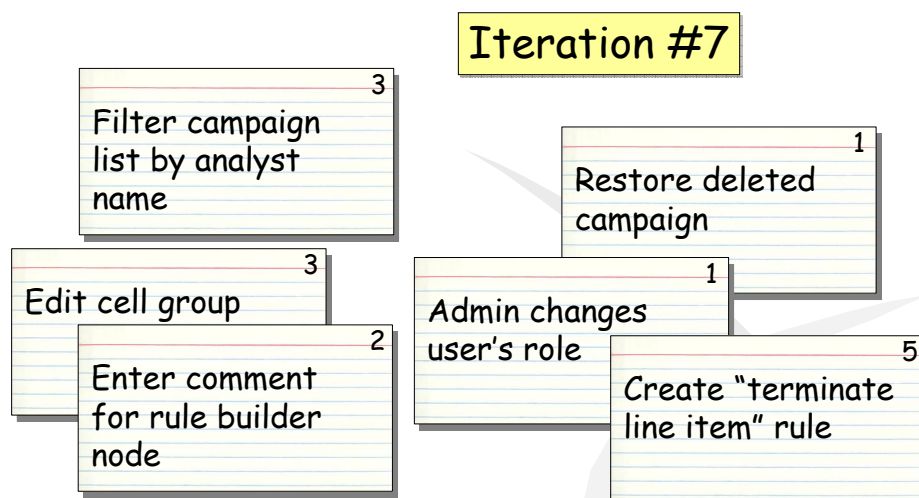
Principles

- Make the whole team responsible for QA
- Keep the system running all of the time
- Automate as much as possible
- Build in redundancy

Testing activities happen every day of the iteration



User stories are the unit of planning and execution



The iteration kickoff gets everyone aligned on what to test

Campaign Authoring Tool - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://localhost:7001/airacomet/filterCampaignByUser.do?filter=

Airacomet Home

Logoff

Campaigns

Filter By: All

Name	Description	LOB	Lead Analyst	Status	Last Update
Delete All Users	Will it do it for Chen also?	ADMIN	Chen Chen	In Development	03/07/2007 6:39 PM
Matt Second Campaign	Another one for Matt	LOB 2000 Description	Matt Cervarich	In Development	03/07/2007 6:37 PM
Special Campaign	This one takes the cake	LOB 2000 Description	T.S. Ravishankar	In Development	03/07/2007 6:38 PM
Wally Favorite	What he wants to do	LOB 5000 Description	Wally Weham	In Development	03/07/2007 6:37 PM
TestSaveBroadband	Broadband Test Save Reengagement	LOB 6000 Description	Matt Cervarich	In QA	12/01/2004 12:12 PM
NewTestCampaign	New Test Campaign	New Lob	Wally Weham	In QA	12/01/2004 12:12 PM

Create Campaign | View Audit Logs | Delete Campaign

Developer testing provides the first line of defense.

Java - CampaignServiceTest.java - Eclipse SDK

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

JUnit

Finished after 13.235 seconds

Runs: 1859/1859 Errors: 0 Failures: 0

Failures Hierarchy

com.projects.airacomet.eclipse-build<Test>

com.aol.airacomet.business.audit.AuditHelperTest

com.aol.airacomet.business.audit.AuditServiceTest

com.aol.airacomet.business.campaign.CampaignServiceTest

testAddCampaignSetsDates

testSaveCampaignSetsOneDate

testCreateFindActiveCampaignsQuery

testFilteringActiveCampaignsForAdminUser

testFilteringActiveCampaignsForRegularAnalyst

testFilteringCampaignsWithNullUser

testFilteringAndSortingTogether

testFilteringWithNoResults

testFilteringByRestrictedUser

com.aol.airacomet.business.campaigntestcase.CampaignTestCaseEx

com.aol.airacomet.business.campaigntestcase.CampaignTestCaseSe

```
import junit.framework.TestCase;

import com.aol.airacomet.business.audit.MockAuditServ
import com.aol.airacomet.domain.Campaign;
import com.aol.airacomet.integration.hibernate.Hiberr
import com.aol.airacomet.integration.hibernate.MockHi
import com.digitalfocus.util.DateHelper;

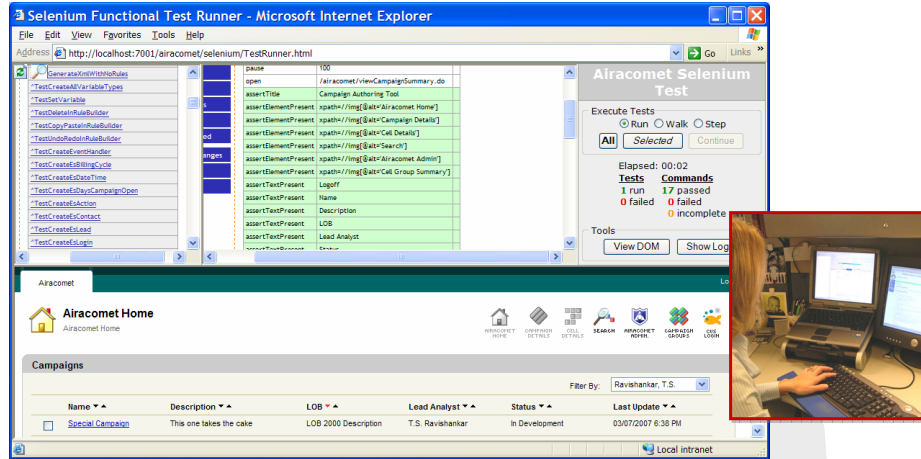
public class CampaignServiceTest extends TestCase {

    private CampaignService service;

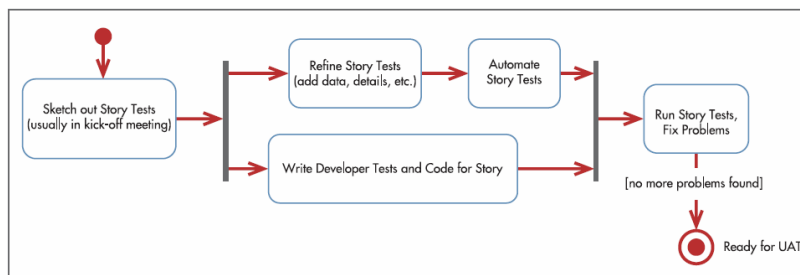
    public void setUp() {
        HibernateFacade hibernate = new MockHibernate
        service = new CampaignServiceImpl(hibernate)
        protected Date now() {
            return DateHelper.constructDateAndTin
        }
    }

    ((CampaignServiceImpl) service).setAuditServi
}
```

Story testing tests the functionality from the users' point of view



Developers and testers work together to “close out” a story



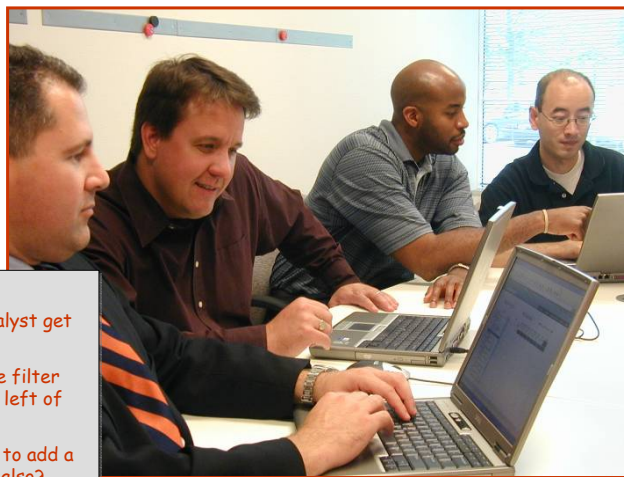
Exploratory testing finds the defects at the system's "edges"

What if we

- Change the sort, then change the filter?
- Filter by an analyst, navigate somewhere else, then return to the campaign summary page?
- Filter by analyst, then click "Create Campaign"
- Delete the last campaign for an analyst?
- Dramatically increase the font size using Firefox?

Exploratory Testing									
T	W	Th	F	S	T	W	Th	F	S

User acceptance testing allows for course corrections

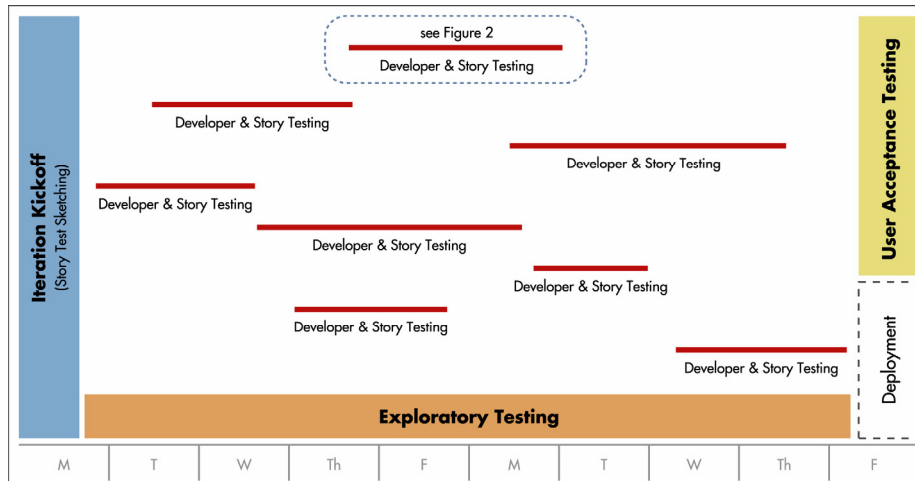


FEEDBACK

- How does an analyst get on the list?
- Can we move the filter dropdown to the left of the screen?
- How much work to add a filter by status, also?



Continuous attention to quality in small increments makes all the difference



Focus on producing a *steady flow* of defect-free functionality

