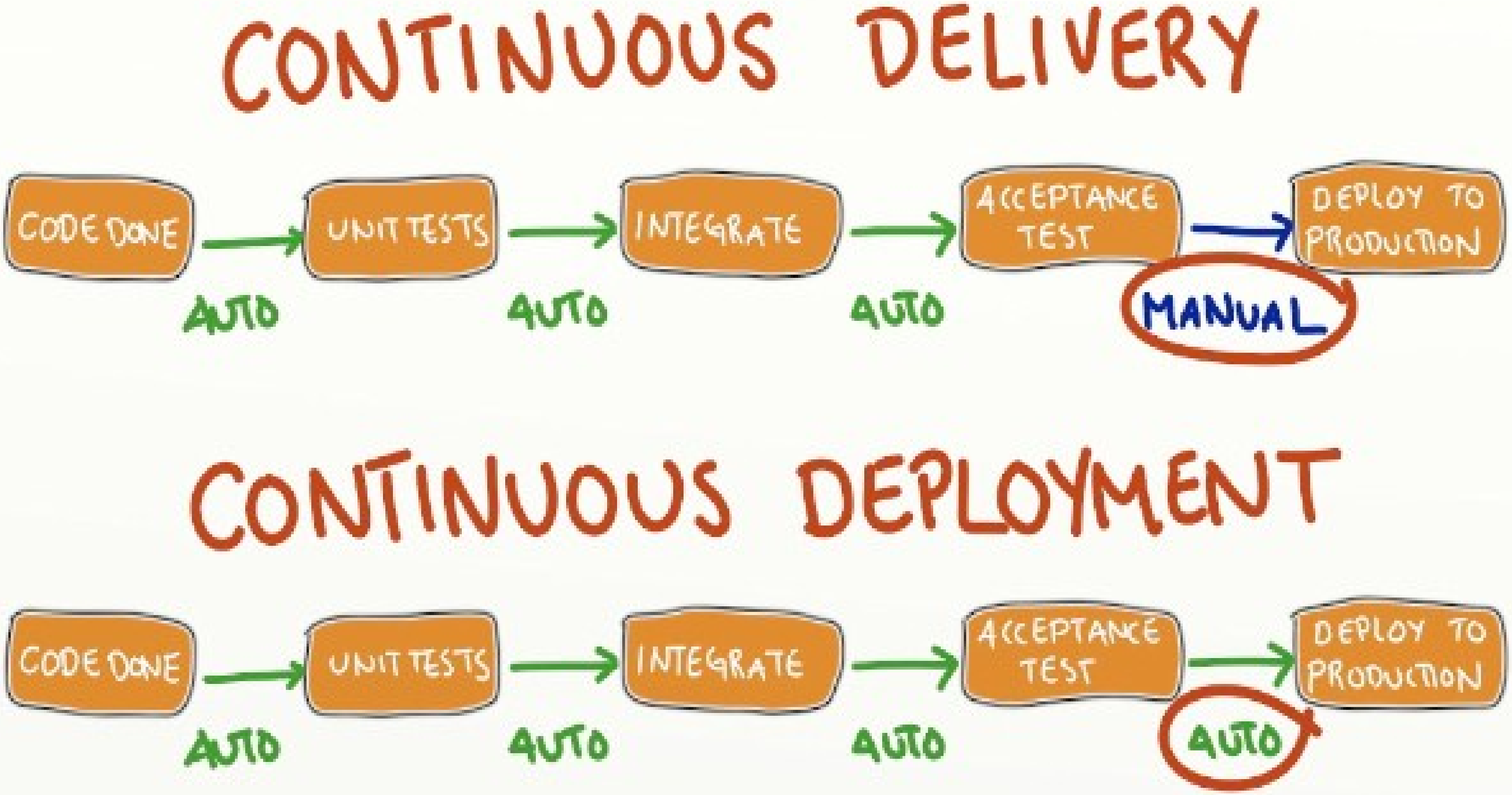
Effective Software Delivery - Partnerships

July, 2015

- **Why?**
  - **Quick response to change**
  - **Improve customer satisfaction**
  - **Gain competitive edge**
- **What?**
  - **Reduce time to market**
  - **Improve software quality**
  - **Foster a culture of craftsmanship**
- **How?**
  - **Continuous delivery / DevOps**
  - **Robust development practices**
  - **Culture of craftsmanship**
  - **Sustainability**

Self-Organization

Continuous Delivery & Deployment



Cultivate in yourself a beginner’s mind

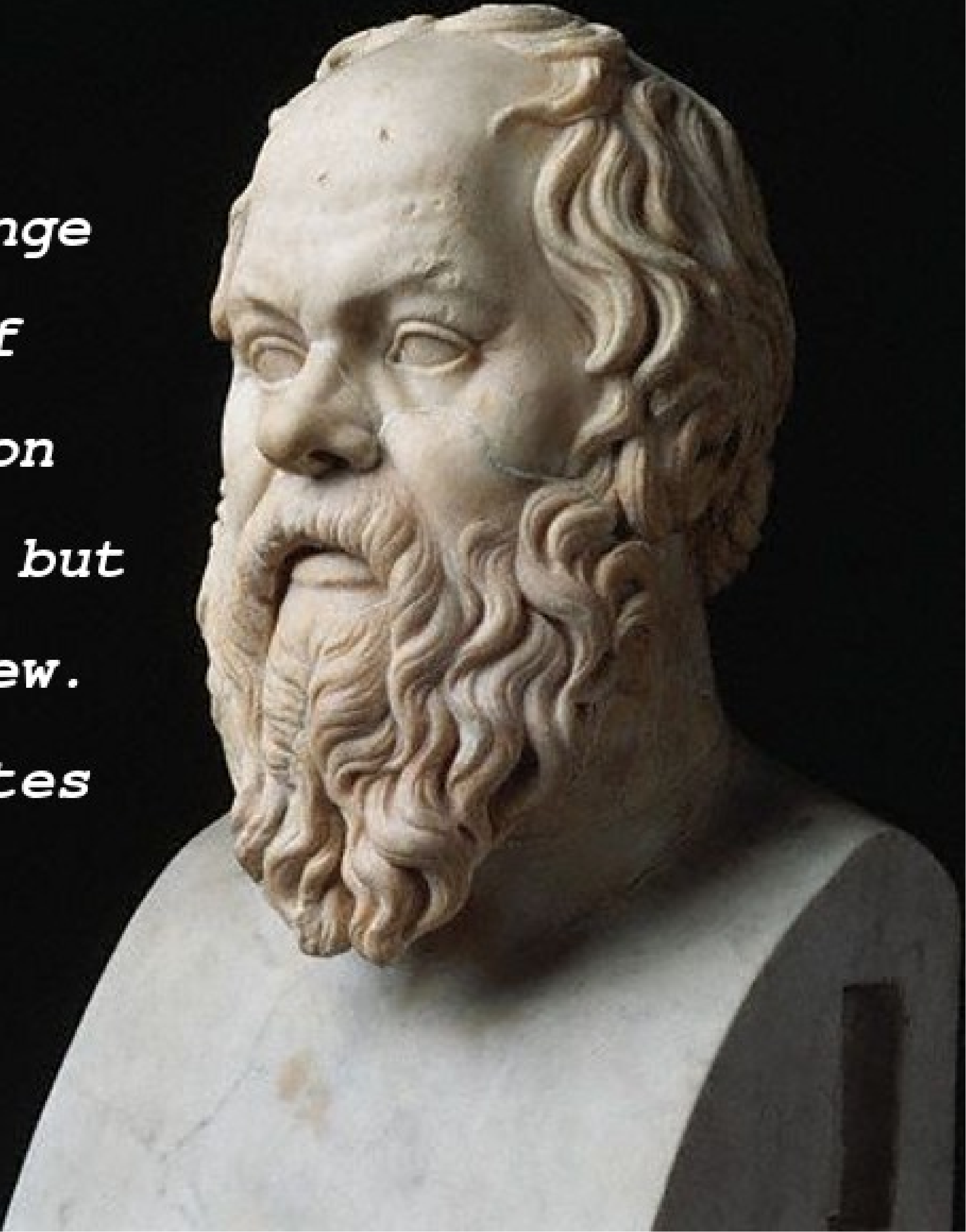
“In the beginner’s mind there are many possibilities, in the expert’s mind there are few.”

- *Shunryu Suzuki*

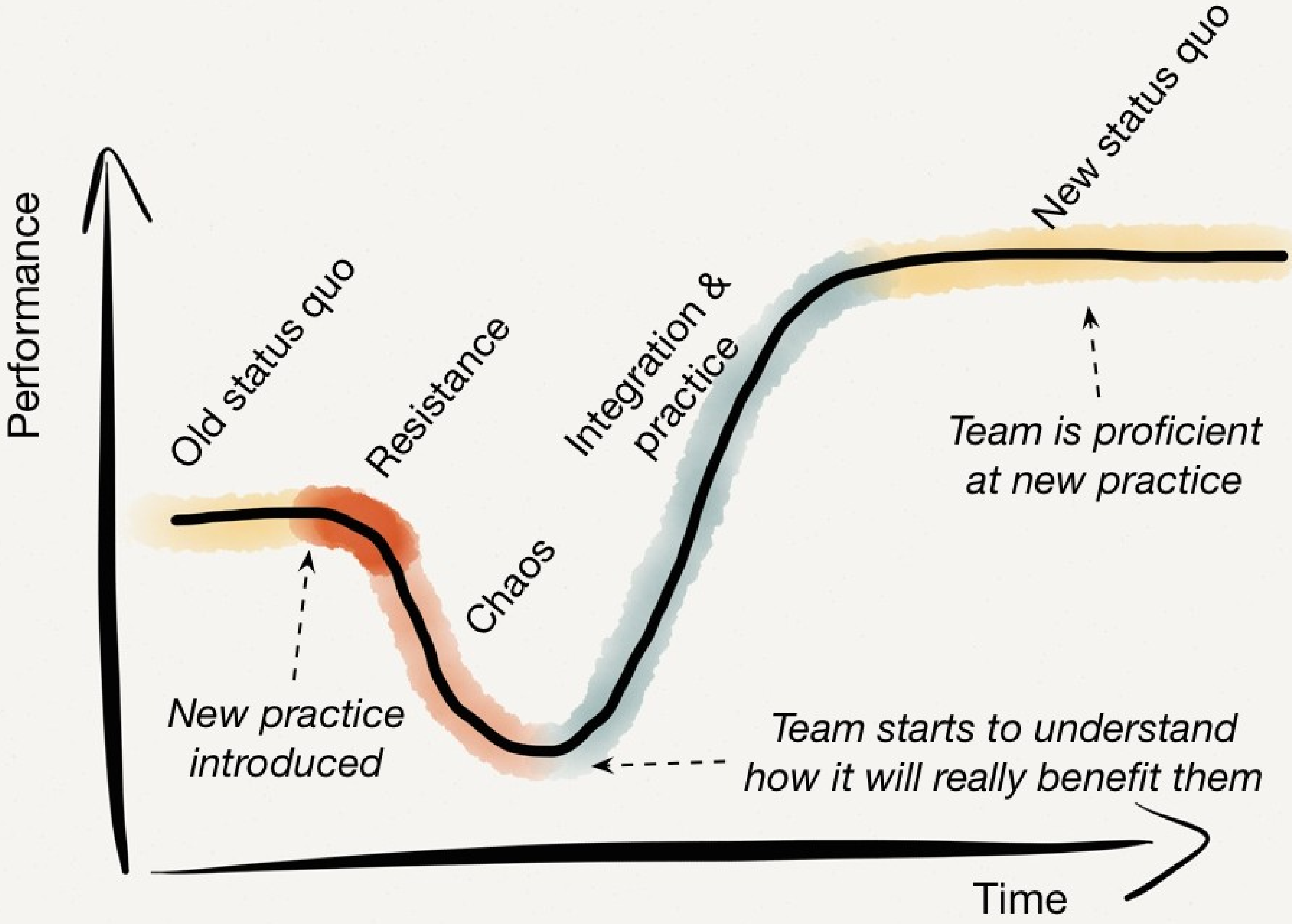
from **Why we can't**	*to* **How can we...**
Component teams	...create feature teams?
After-the-fact testing and hardening take time	...build in quality?
Governance, legal, UX, marketing, security reviews take time	...build in compliance?
Many cross-team and cross-ART dependencies	...realign ARTs with product lines & value streams?
Too many meetings	...communicate efficiently?
The organization just is what it is. “They” won’t let us change anything.	...change the organization

The secret of change is to focus all of your energy, not on fighting the old, but on building the new.

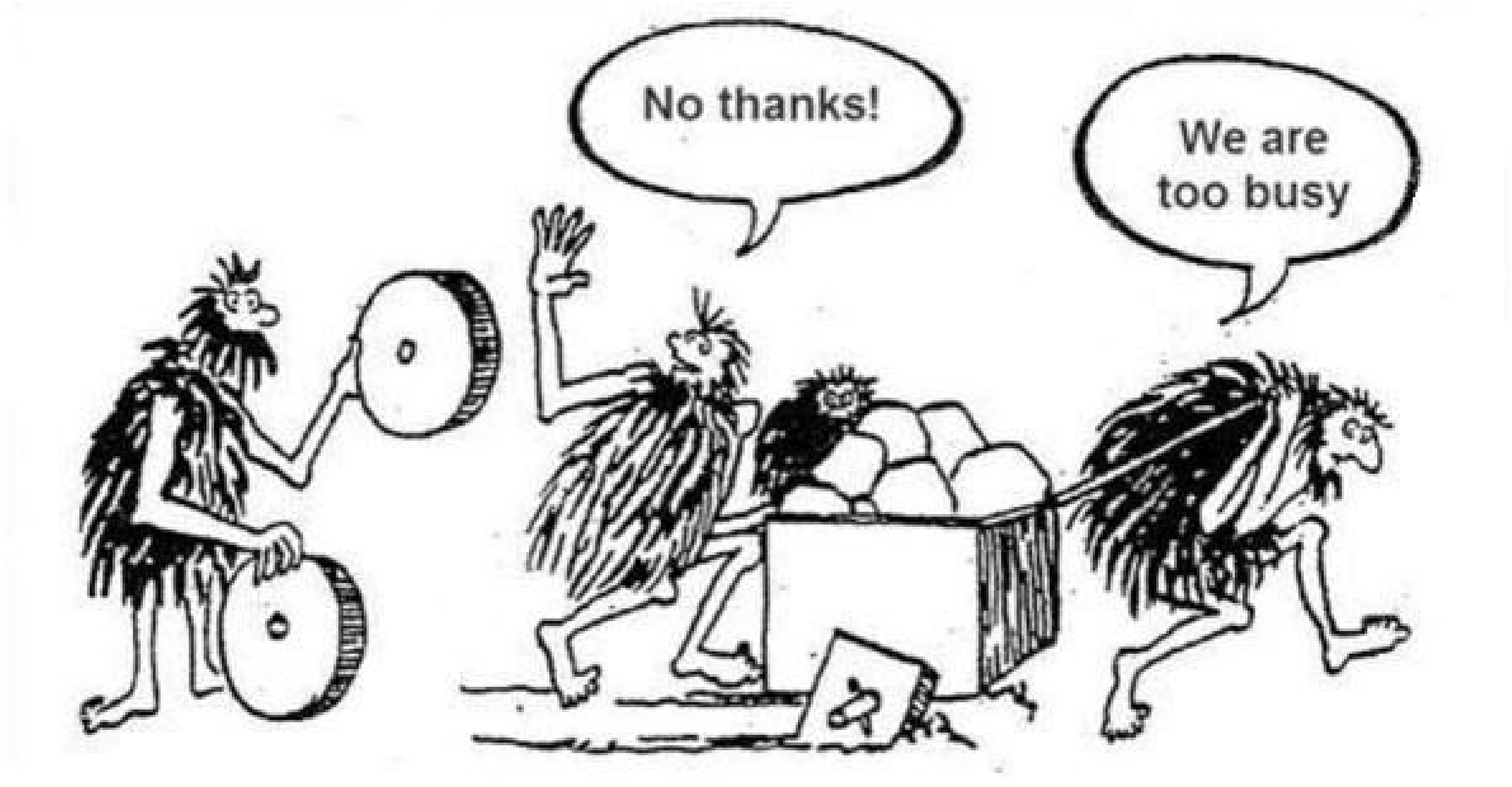
– Socrates

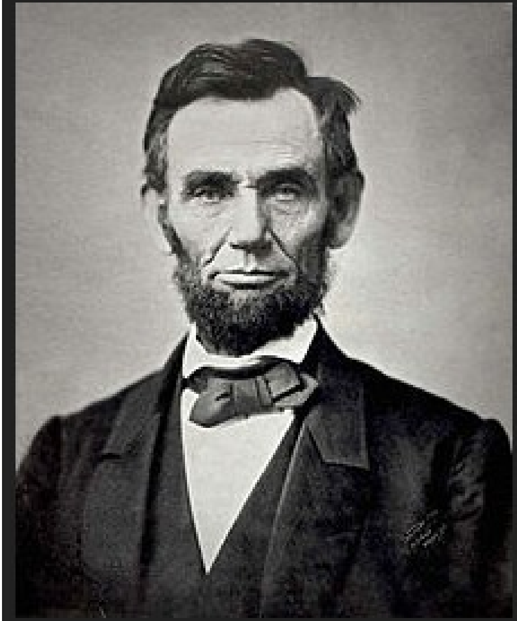


Satir Change Curve



Are you too busy to improve?





Give me six hours to chop down a tree and I will spend the first four sharpening the axe.

(Abraham Lincoln)

Models Help Us Think About Things

All models are wrong, but some models are useful.

– George Box

Agile

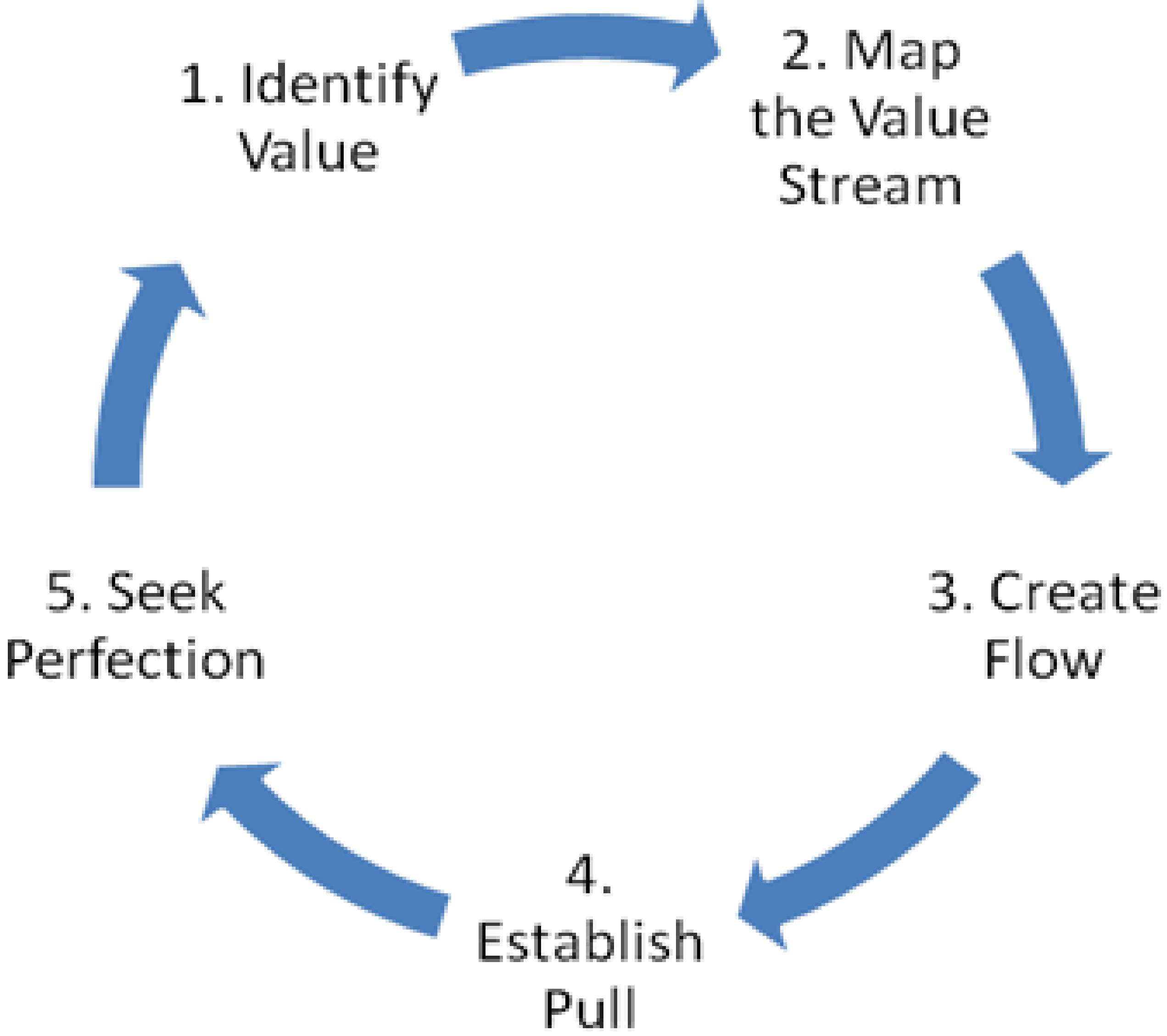
http://agilemanifesto.org

http://www.halfarsedagilemanifesto.org/

Systems Thinking

https://www.youtube.com/watch?v=uaGEjrADGPA

Lean



1. Identify Value

2. Map the Value Stream

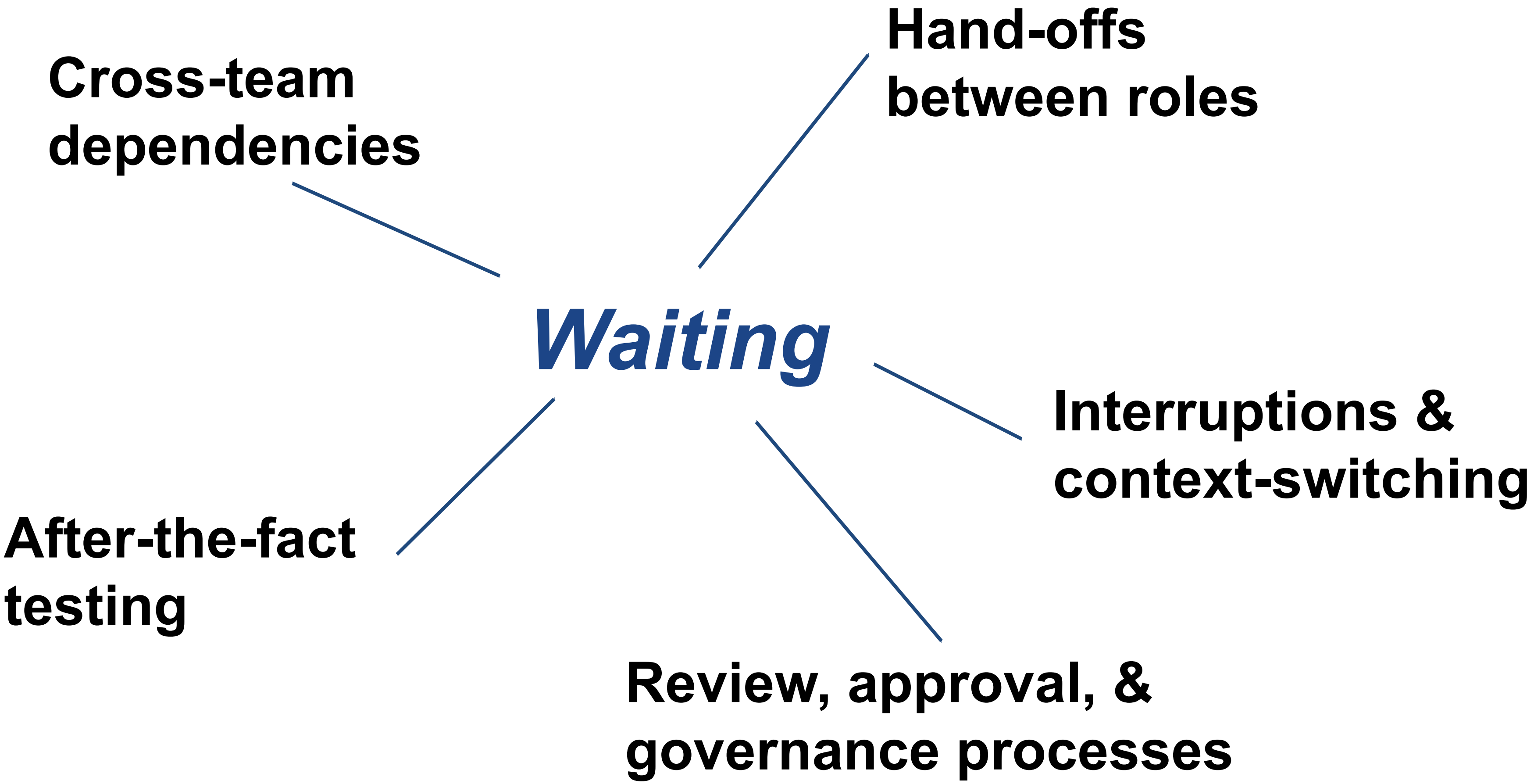
3. Create Flow

4. Establish Pull

5. Seek Perfection

Utilization vs. Throughput

Time Lost to Waiting



Cross-team dependencies

Hand-offs between roles

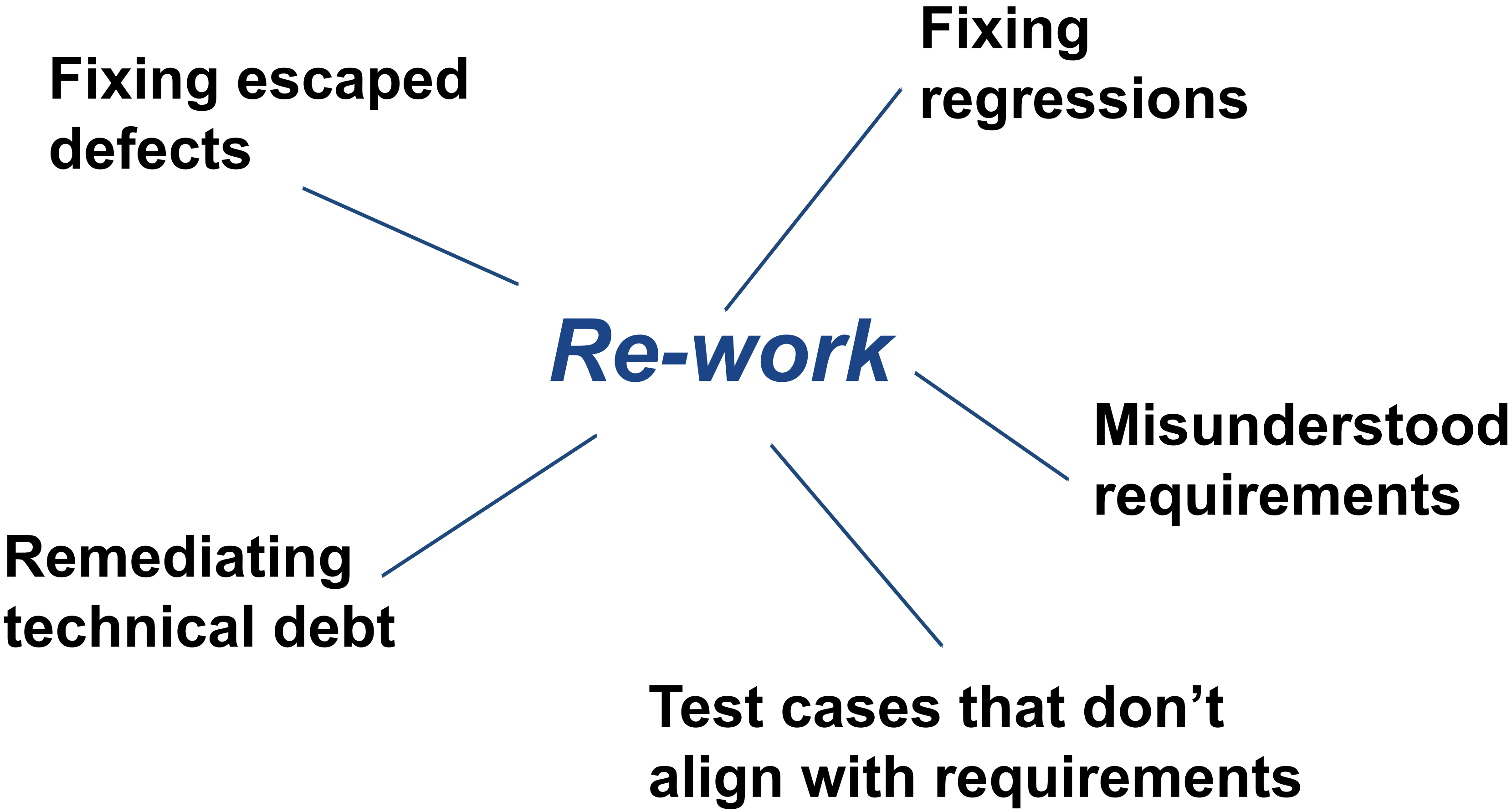
Waiting

Interruptions & context-switching

After-the-fact testing

Review, approval, & governance processes

Time Lost to Re-Work



Re-work

Fixing escaped defects

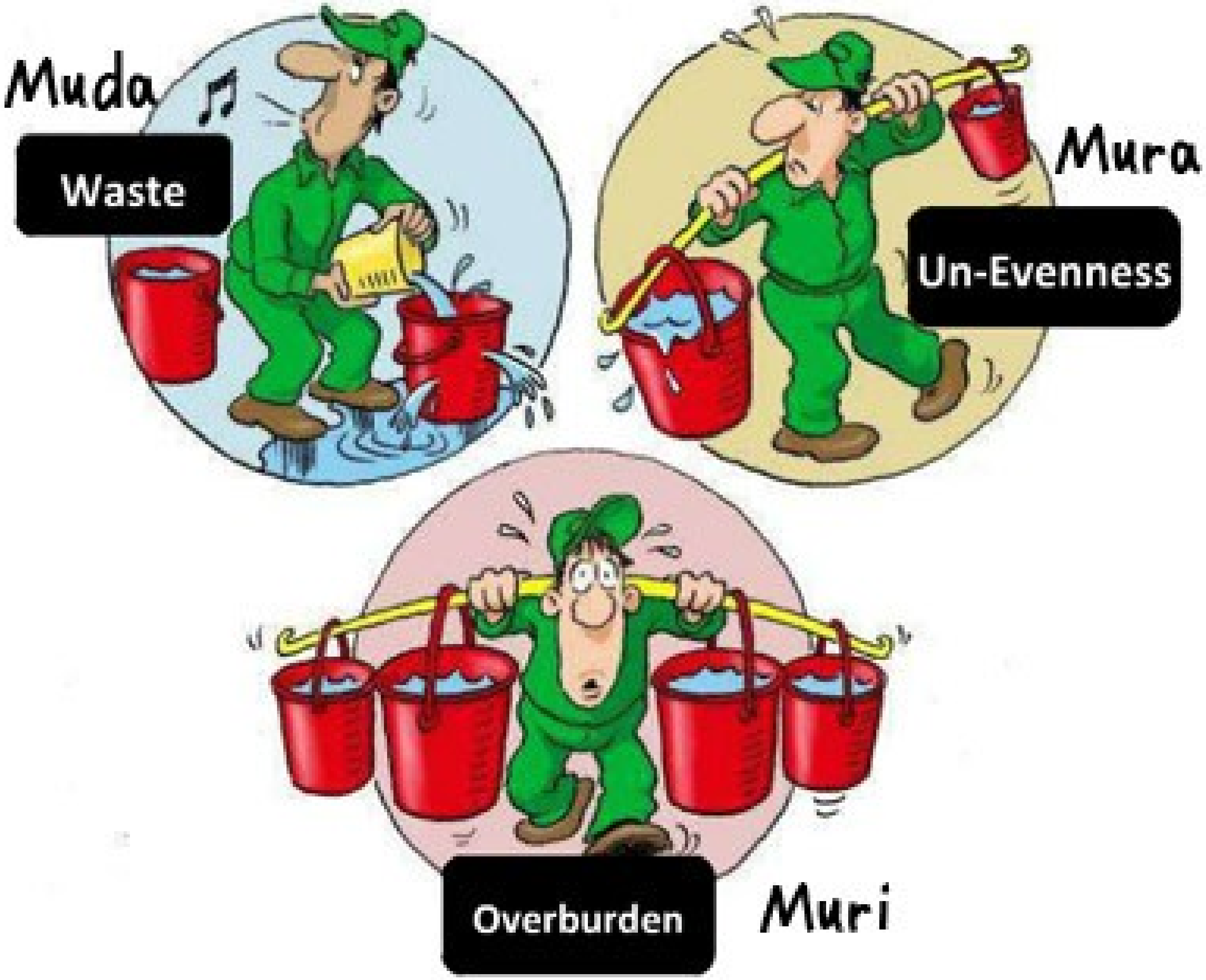
Fixing regressions

Misunderstood requirements

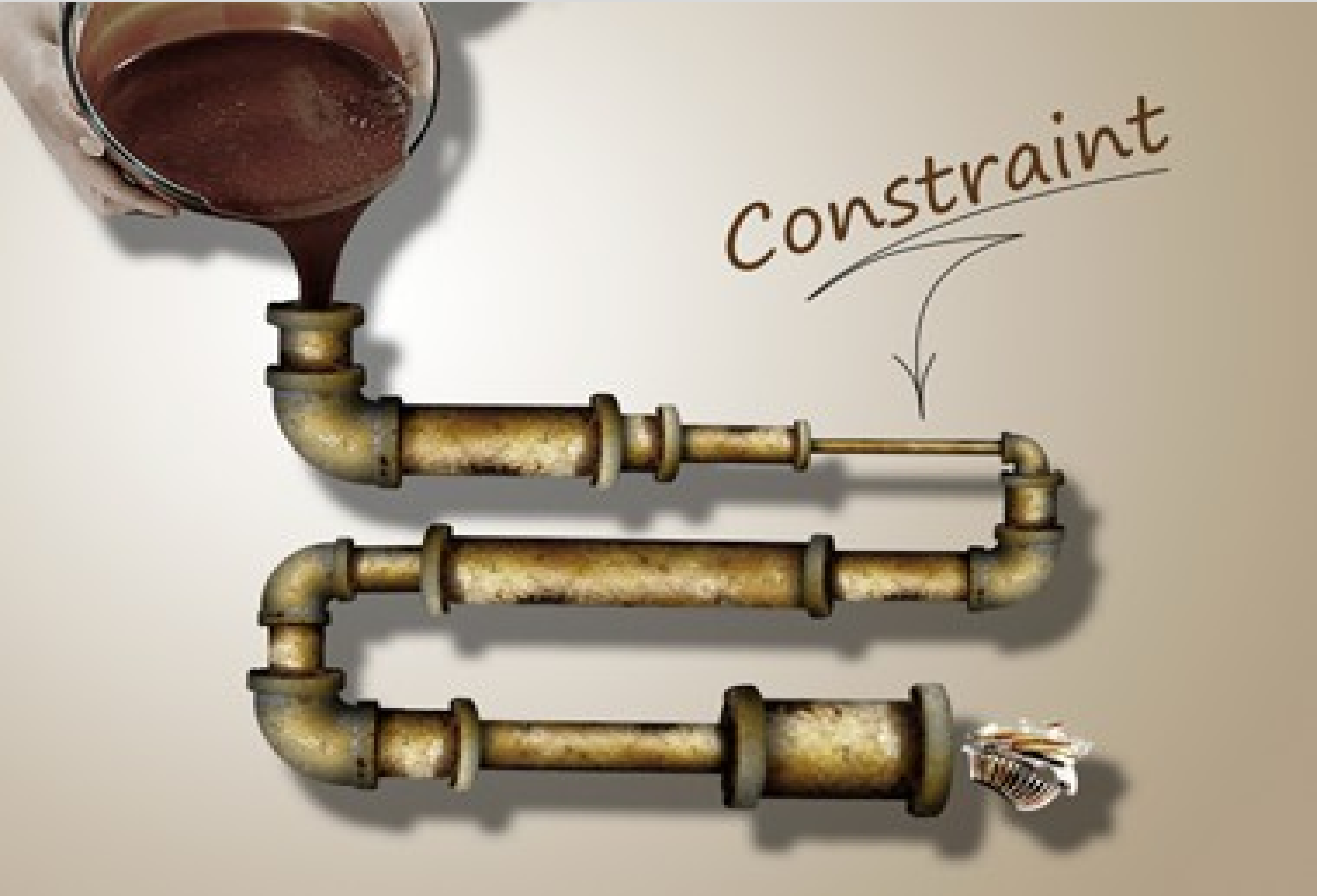
Test cases that don't align with requirements

Remediating technical debt

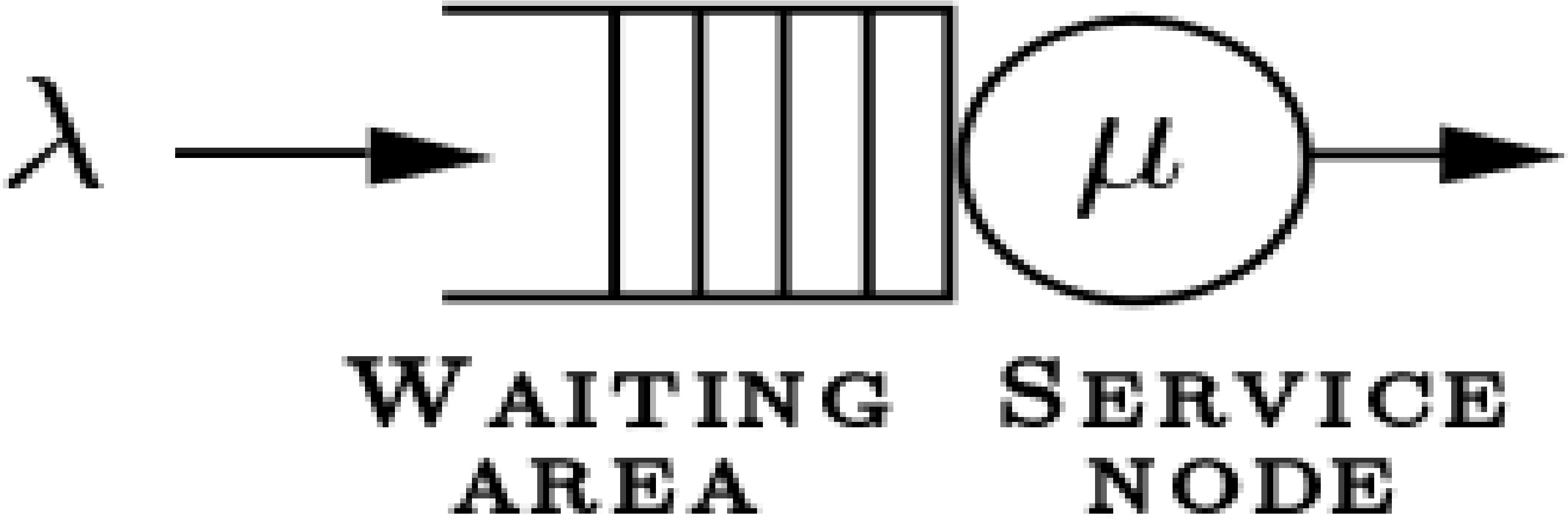
Muda – Mura – Muri



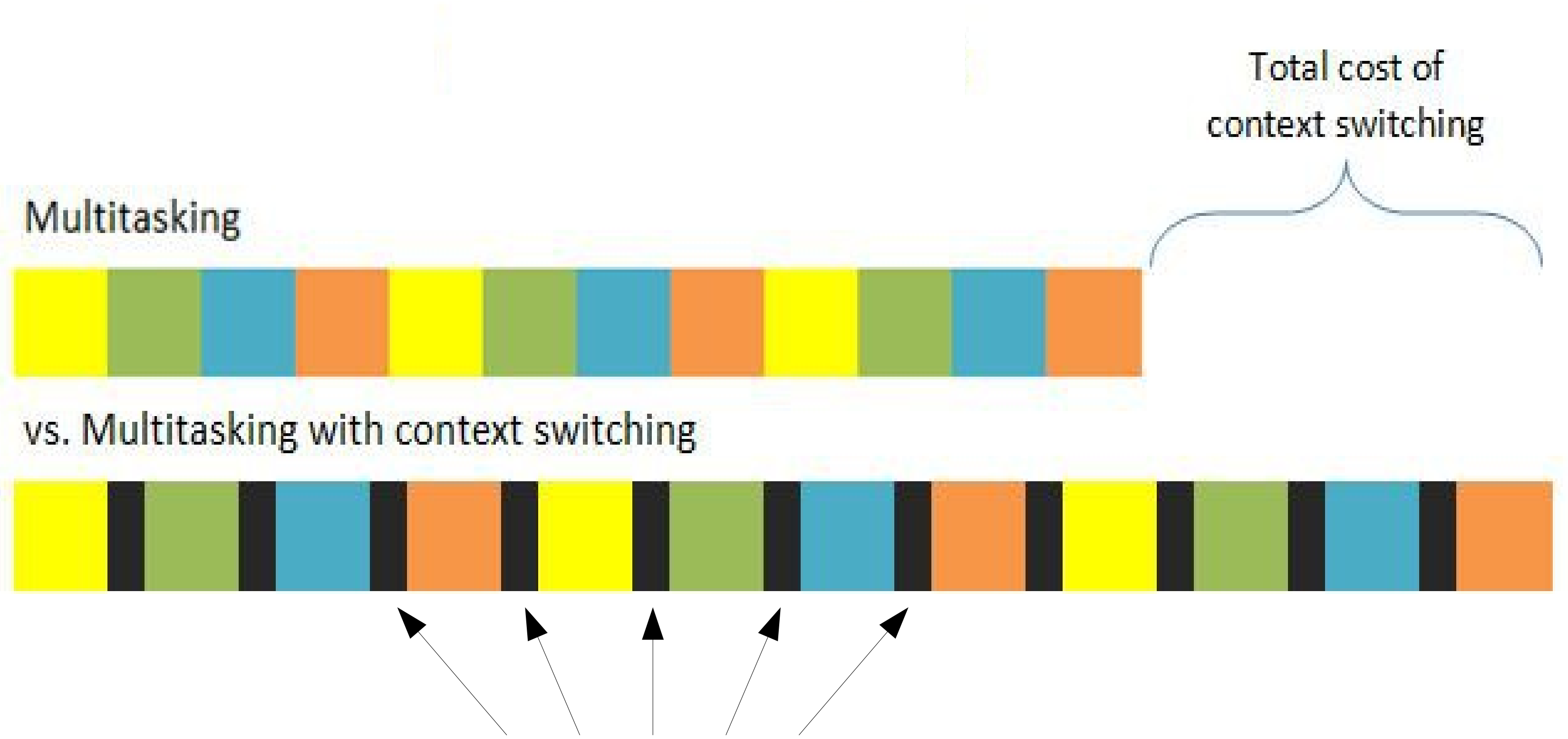
Theory of Constraints



M/M/1 Queue



Context Switching Overhead



Total cost of context switching
Multitasking
vs. Multitasking with context switching

This can be between 10 and 30 minutes

Illustration from
http://www.bryanbraun.com/2012/06/25/multitasking-and-context-switching

Manager's Schedule, Maker's Schedule

“For someone on the maker's schedule, having a meeting is like throwing an exception. It doesn't merely cause you to switch from one task to another; it changes the mode in which you work.”

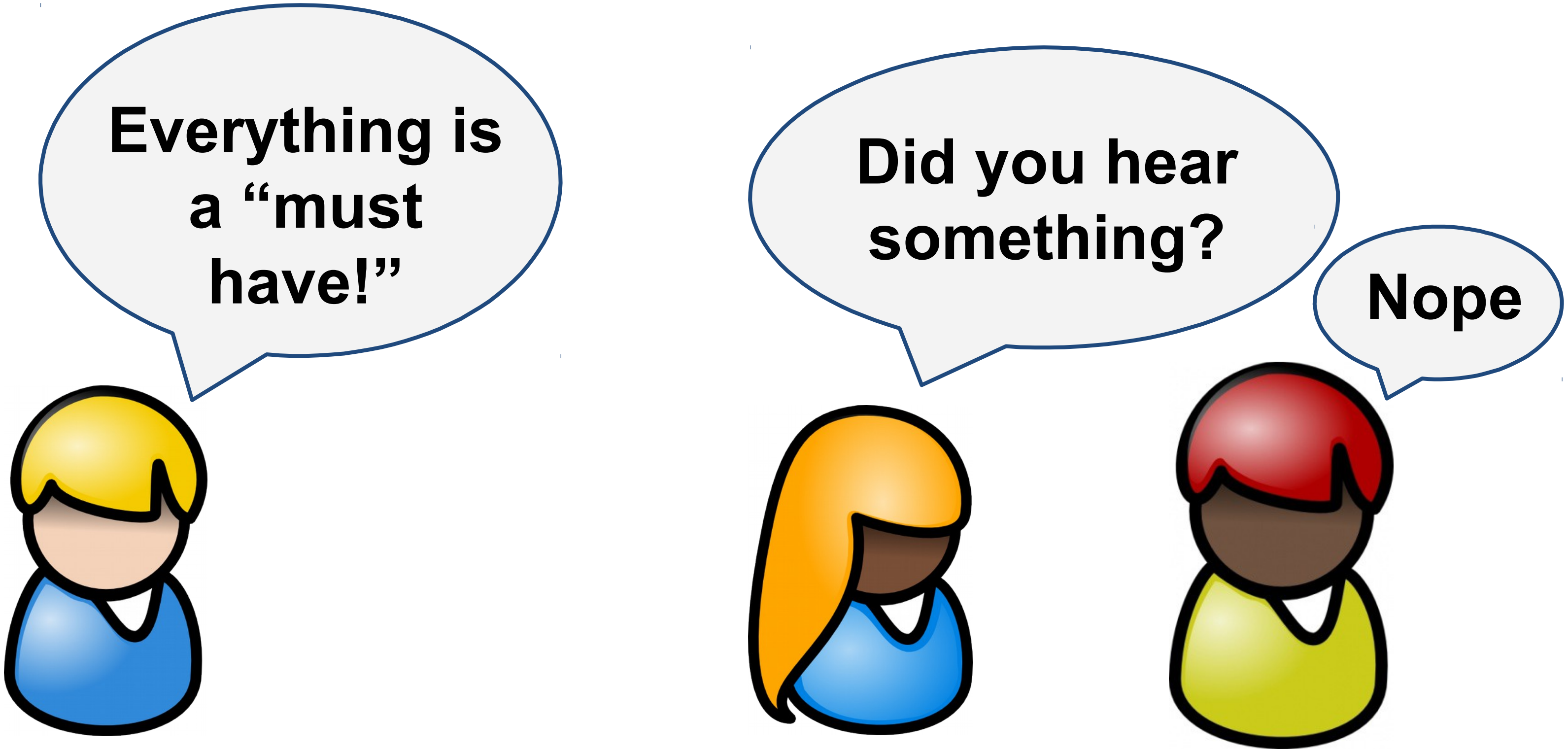
- Paul Graham

Some Other Stuff...

- Last Responsible Moment
- Limiting Work-in-Process

Borat Prioritization

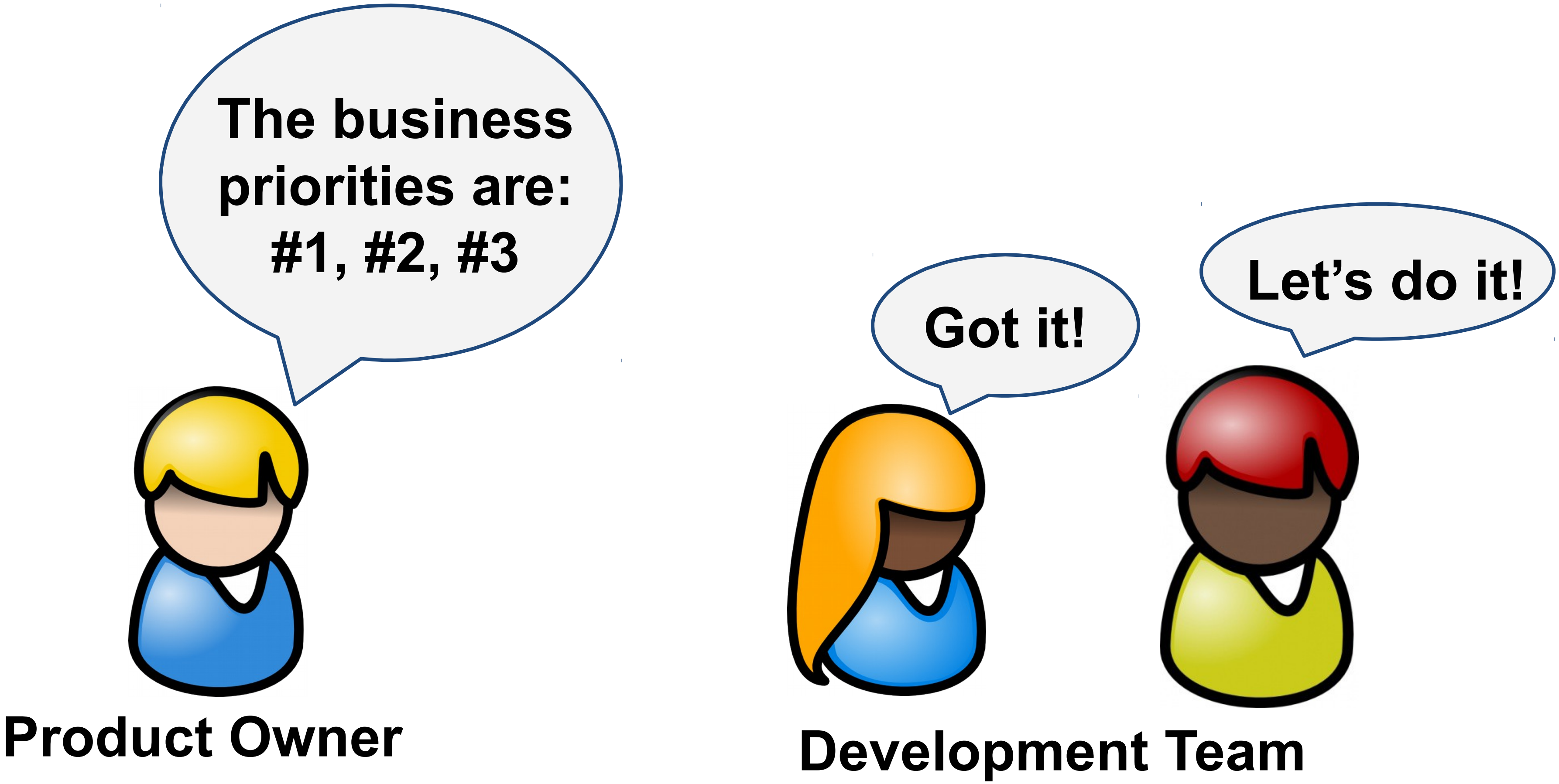
Not!



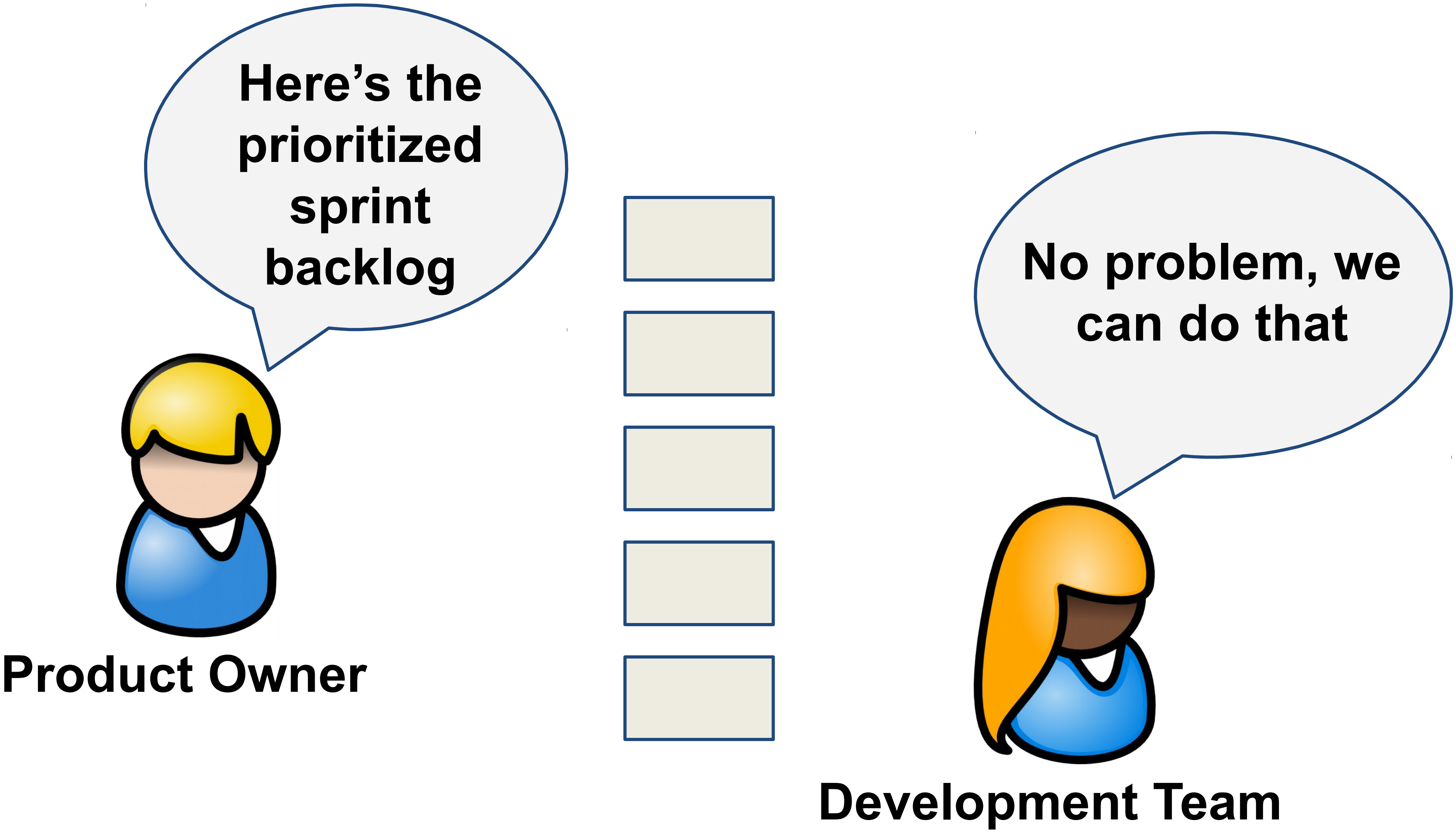
Product Owner

Development Team

Prioritization



Scrum - Planned Work



Here's the prioritized sprint backlog

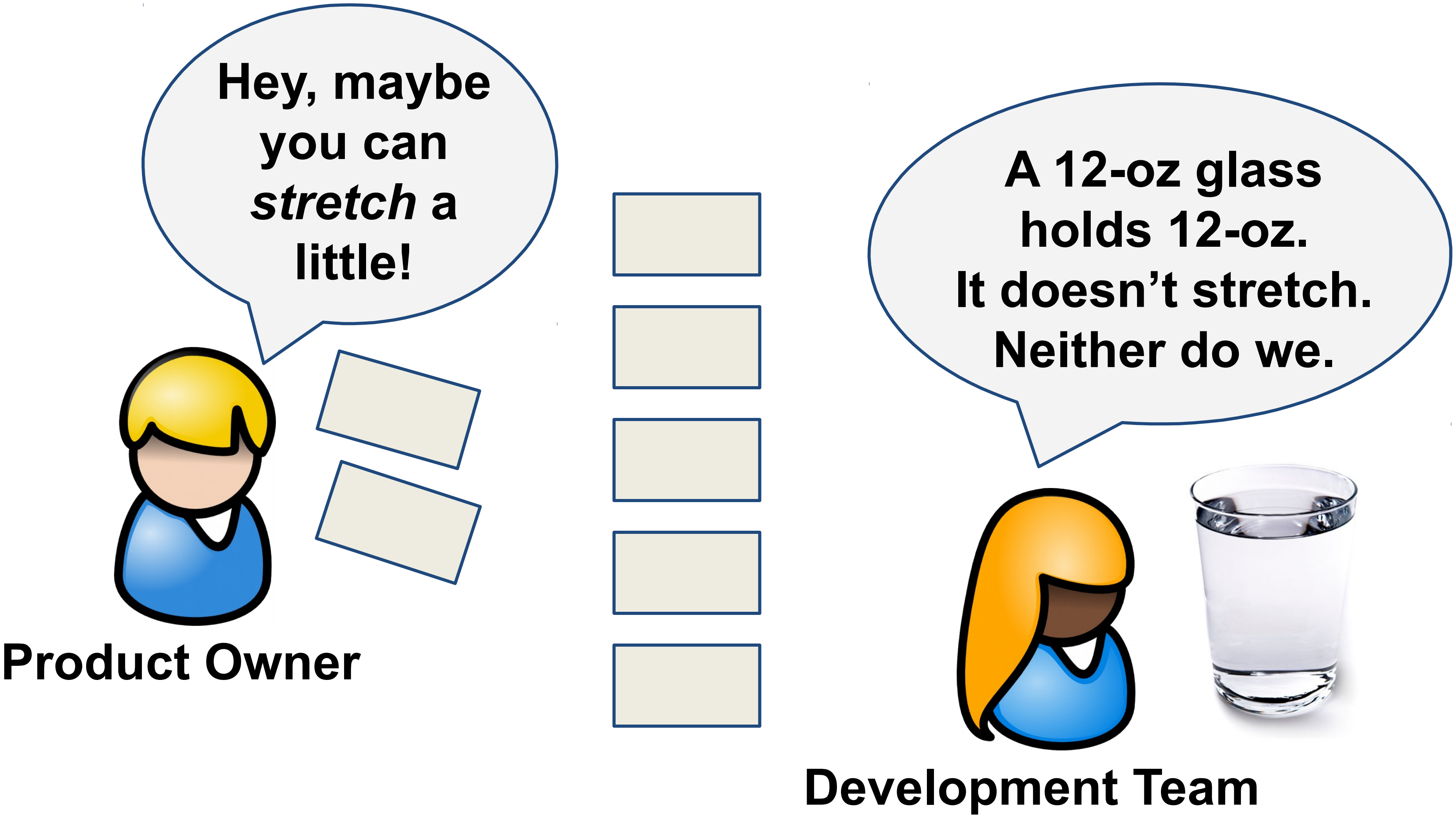
Product Owner

No problem, we can do that

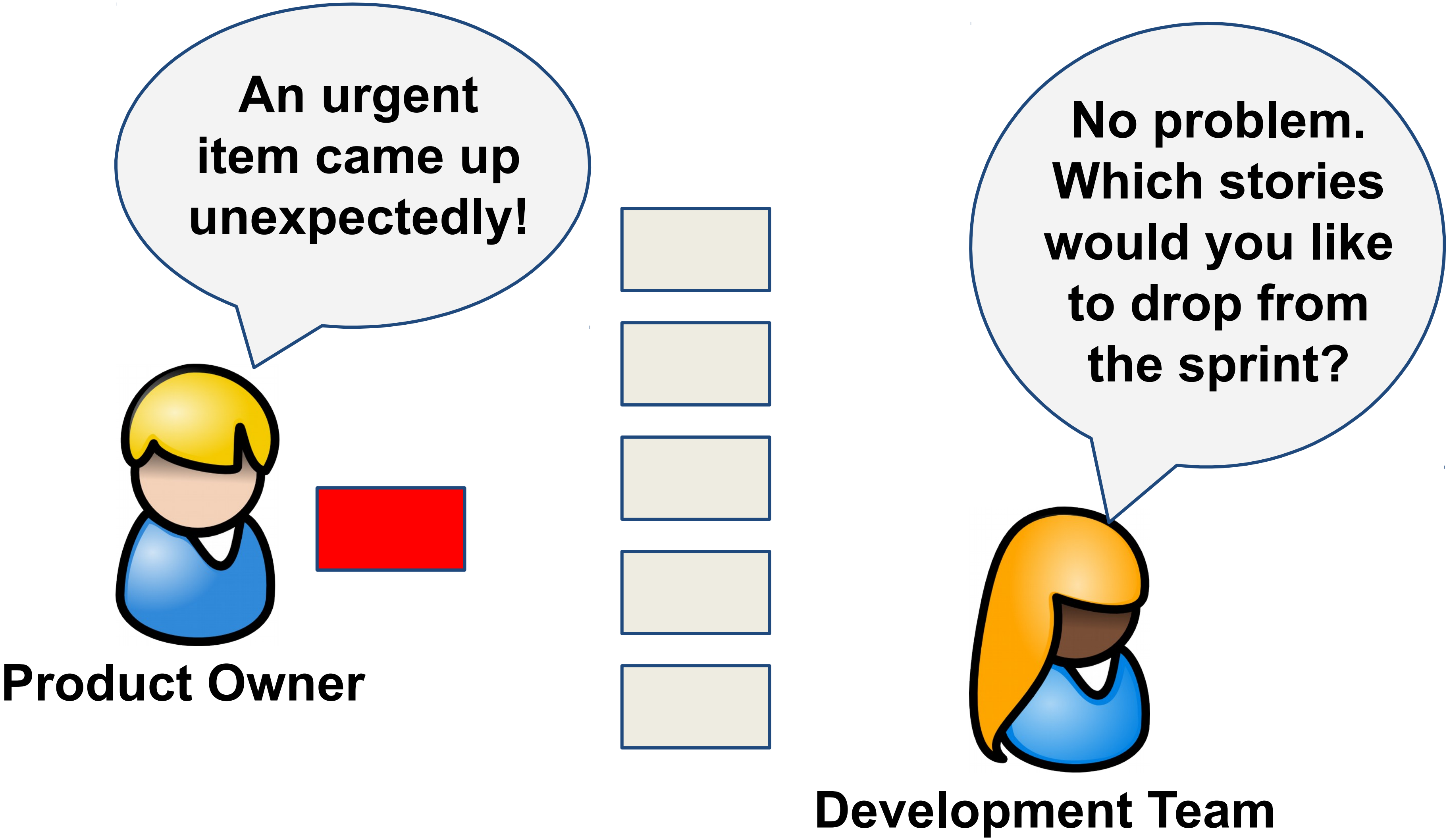
Development Team

Borat Scrum - Stretch Goals

Not!


Hey, maybe you can *stretch* a little!
A 12-oz glass holds 12-oz. It doesn’t stretch. Neither do we.
Product Owner
Development Team

Scrum - Unplanned Work



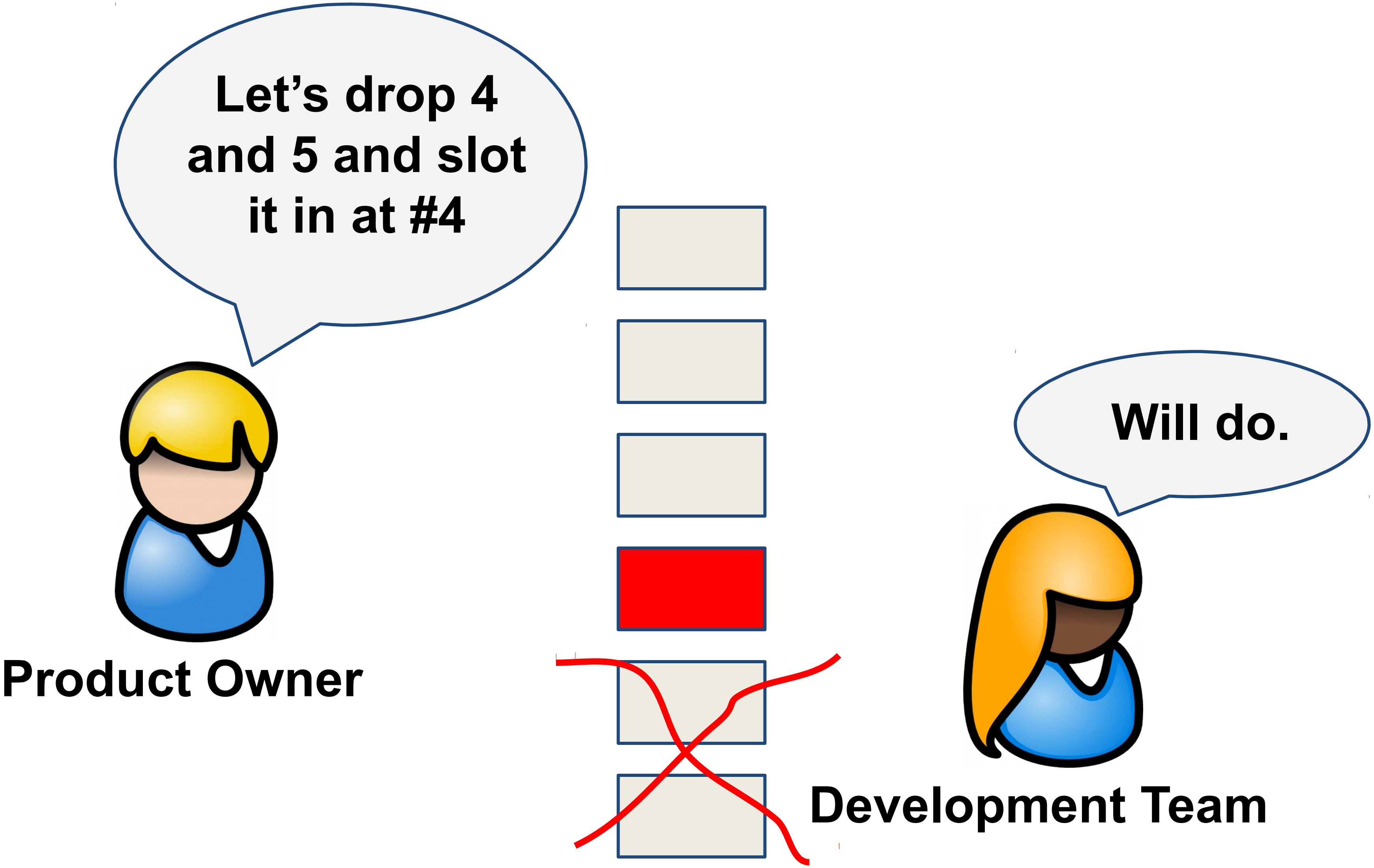
An urgent item came up unexpectedly!

No problem. Which stories would you like to drop from the sprint?

Product Owner

Development Team

Scrum - Unplanned Work



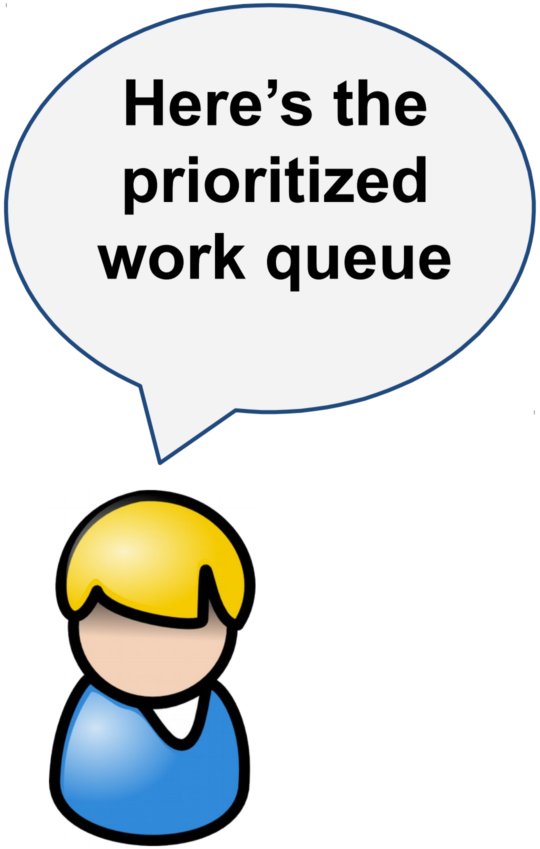
Let’s drop 4 and 5 and slot it in at #4

Will do.

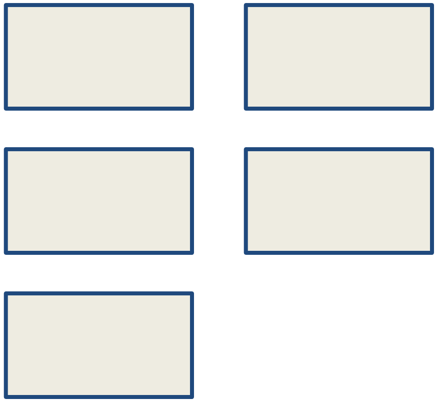
Product Owner

Development Team

Kanban - Planned Work



Product Owner



Standard Work (2)

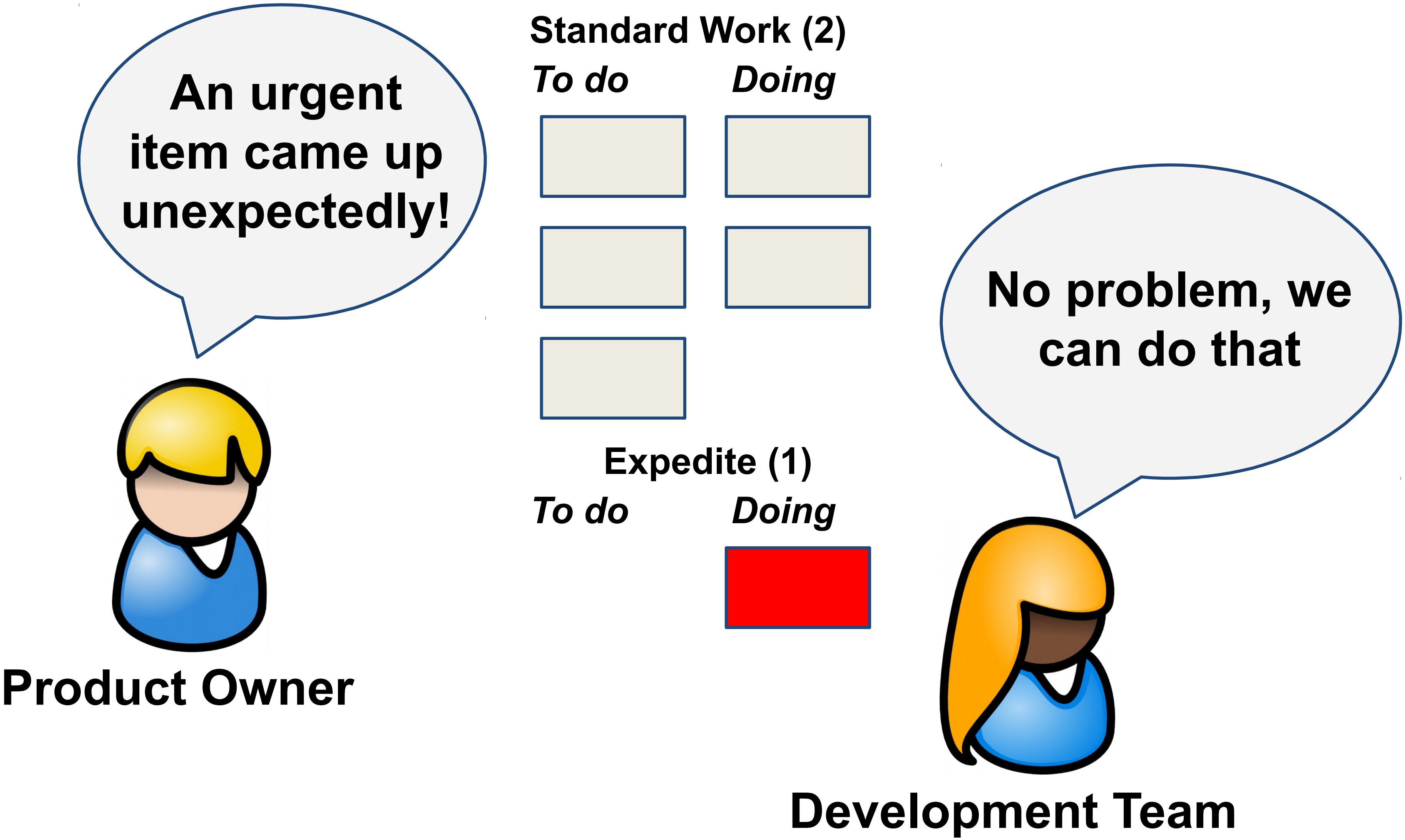
To do *Doing*

Expedite (1)

To do *Doing*

Development Team

Kanban - Unplanned Work



An urgent item came up unexpectedly!

Standard Work (2)

To do *Doing*

Expedite (1)

To do *Doing*

No problem, we can do that

Product Owner

Development Team

Transparency

https://www.youtube.com/watch?v=NkQ58I53mjk

Scrum Guide

http://scrumguides.org/scrum-guide.html

Bad Sprint Review

https://www.youtube.com/watch?v=Q6jMgmPIxmk

SAFe Overview

`http://scaledagileframework.com/`

Cross-Team & Cross-ART Dependencies

Team Structure & Logistics

- Collaborative work spaces
- Distributed teams
- Dispersed teams
- Feature teams
- Component teams
- Cross functional teams
- Dedicated teams
- Stable teams
- Full-stack developer

Communication

Active Listening

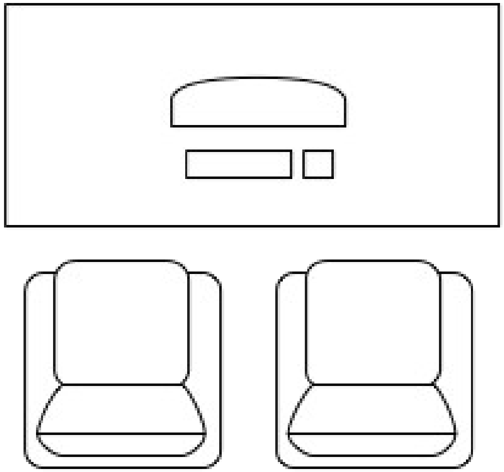
https://www.youtube.com/watch?v=aP55nA8fQ9I

https://www.youtube.com/watch?v=4VOubVB4CTU

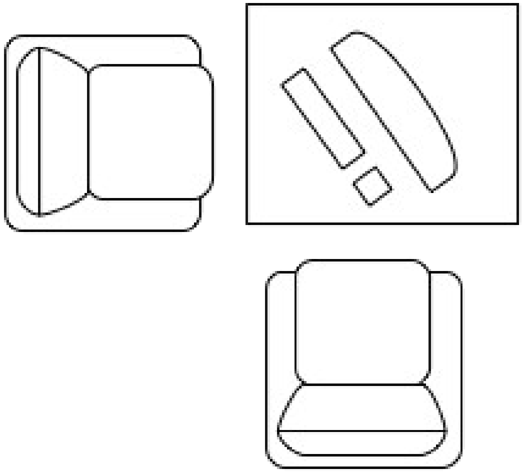
Powerful Questions

Huh?

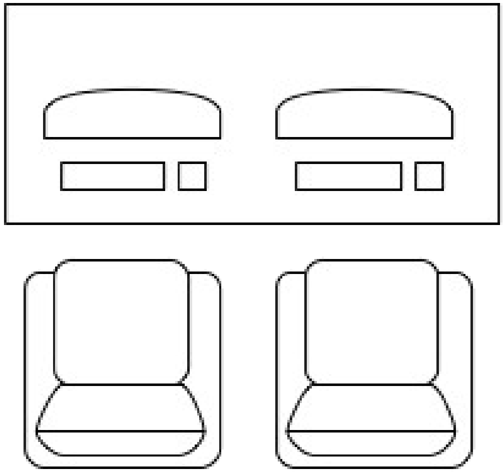
Pairing



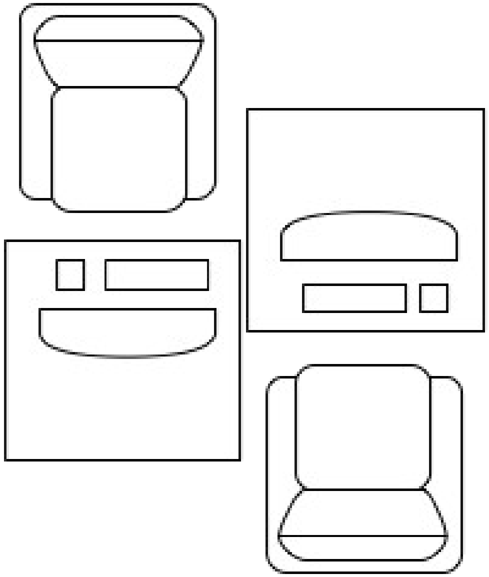
A) One set of keyboard, monitor and mouse, shared by both. Sitting side by side.



B) One set of keyboard, monitor and mouse, shared by both. Sitting angled to each other.



C) Each has a keyboard, monitor and mouse, connected to the same machine. Sitting side by side.



D) Each has a keyboard, monitor and mouse, connected to the same machine. Sitting across from each other.

Mob Programming

A Whole Team Approach

Illustration © 2012 - Andrea Zuill

mobprogramming.org **Twitter: @WoodyZuill**

www.MobProgramming.org

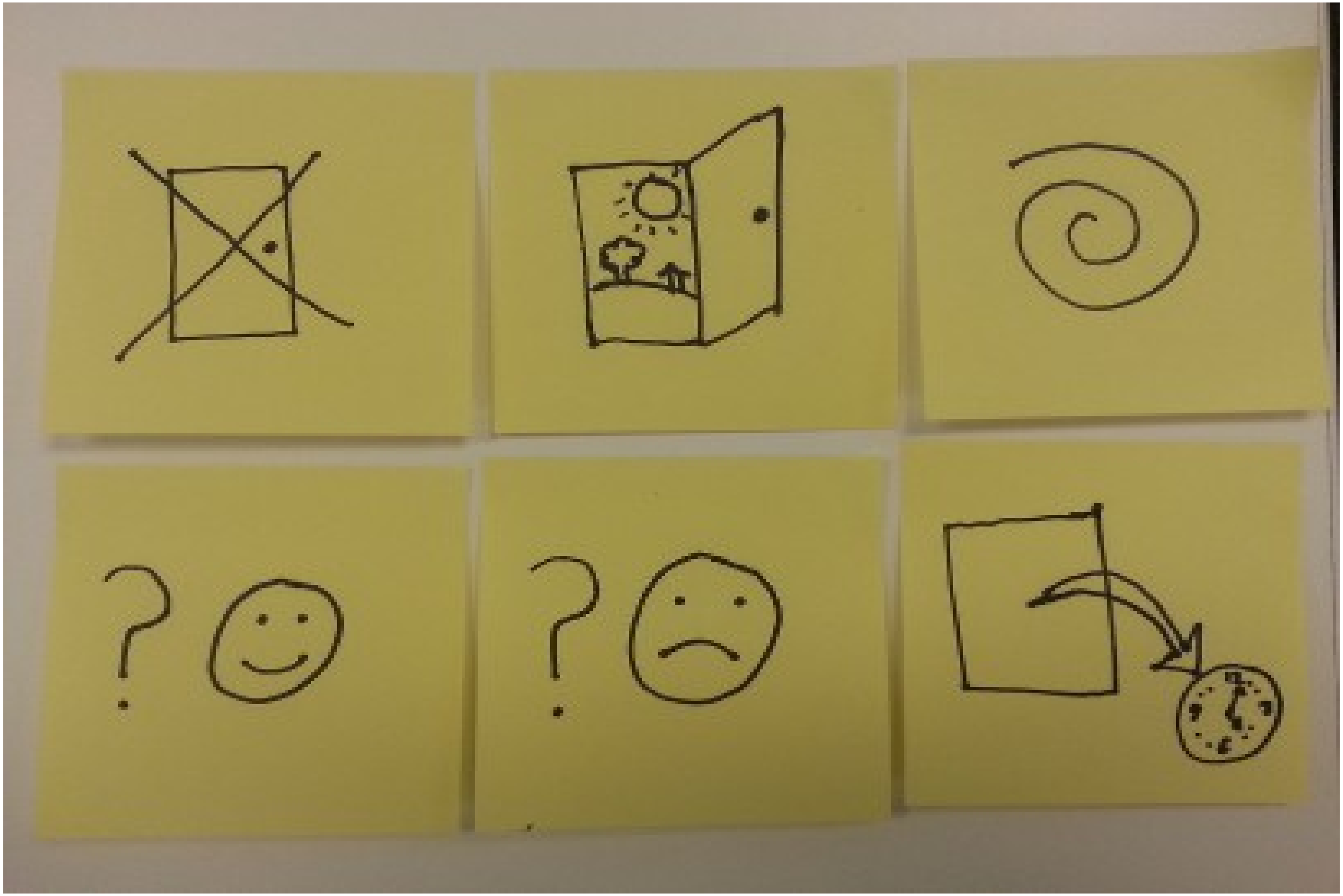
9:00 AM

15 minute rotations

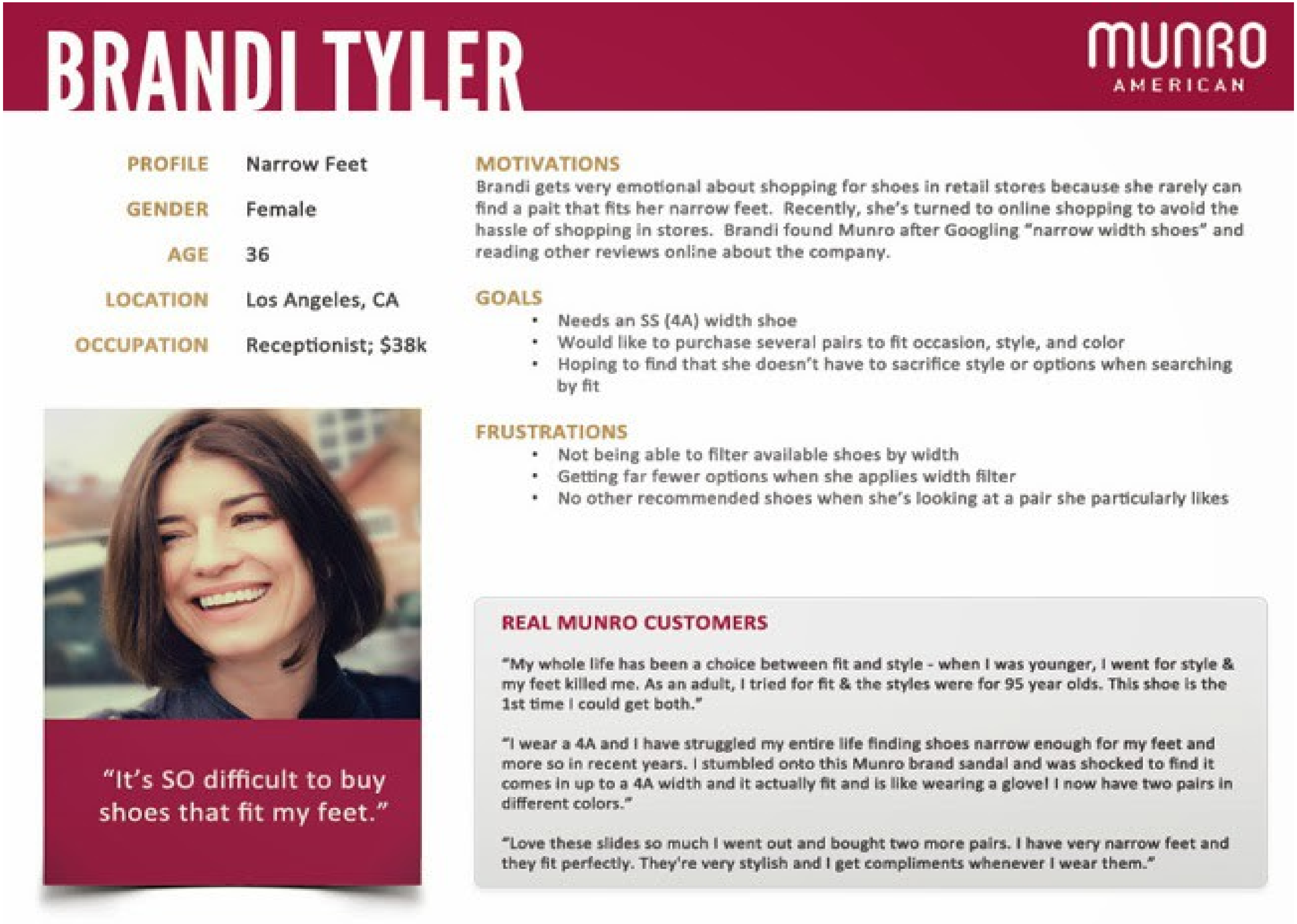
What's in a User Story?

- What is needed? (General)
- Who needs it?
- What’s the value to them?
- How can we tell when it’s done?
- Pointers to more-detailed documentation (if needed)

Placeholder for a Conversation



Personas



BRANDI TYLER

MUNRO AMERICAN

PROFILE	Narrow Feet
GENDER	Female
AGE	36
LOCATION	Los Angeles, CA
OCCUPATION	Receptionist; $38k

“It’s SO difficult to buy shoes that fit my feet.”

MOTIVATIONS

Brandi gets very emotional about shopping for shoes in retail stores because she rarely can find a pait that fits her narrow feet. Recently, she’s turned to online shopping to avoid the hassle of shopping in stores. Brandi found Munro after Googling “narrow width shoes” and reading other reviews online about the company.

GOALS

- Needs an SS (4A) width shoe
- Would like to purchase several pairs to fit occasion, style, and color
- Hoping to find that she doesn’t have to sacrifice style or options when searching by fit

FRUSTRATIONS

- Not being able to filter available shoes by width
- Getting far fewer options when she applies width filter
- No other recommended shoes when she’s looking at a pair she particularly likes

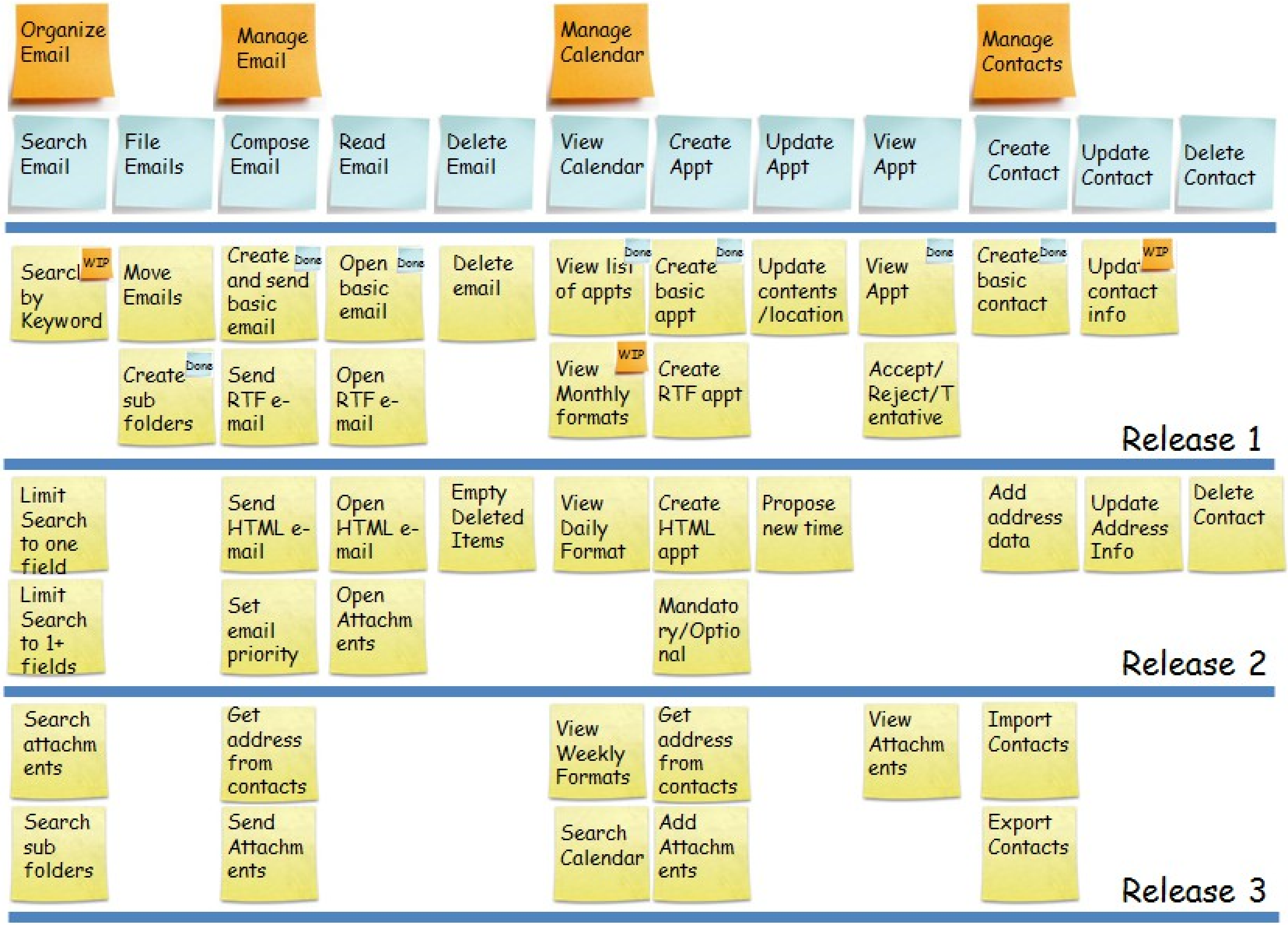
REAL MUNRO CUSTOMERS

“My whole life has been a choice between fit and style - when I was younger, I went for style & my feet killed me. As an adult, I tried for fit & the styles were for 95 year olds. This shoe is the 1st time I could get both.”

“I wear a 4A and I have struggled my entire life finding shoes narrow enough for my feet and more so in recent years. I stumbled onto this Munro brand sandal and was shocked to find it comes in up to a 4A width and it actually fit and is like wearing a glove! I now have two pairs in different colors.”

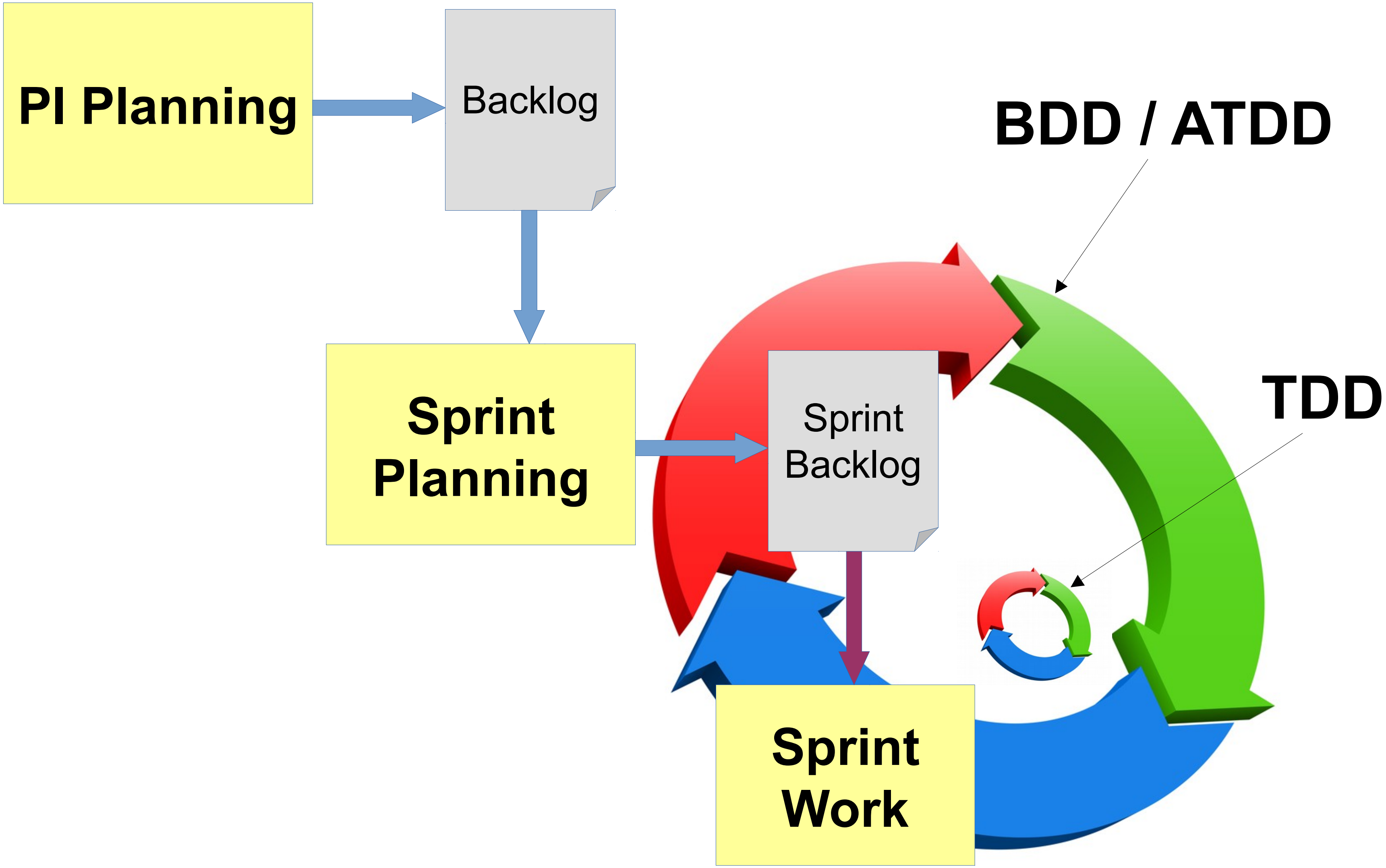
“Love these slides so much I went out and bought two more pairs. I have very narrow feet and they fit perfectly. They're very stylish and I get compliments whenever I wear them.”

Story / Feature Mapping

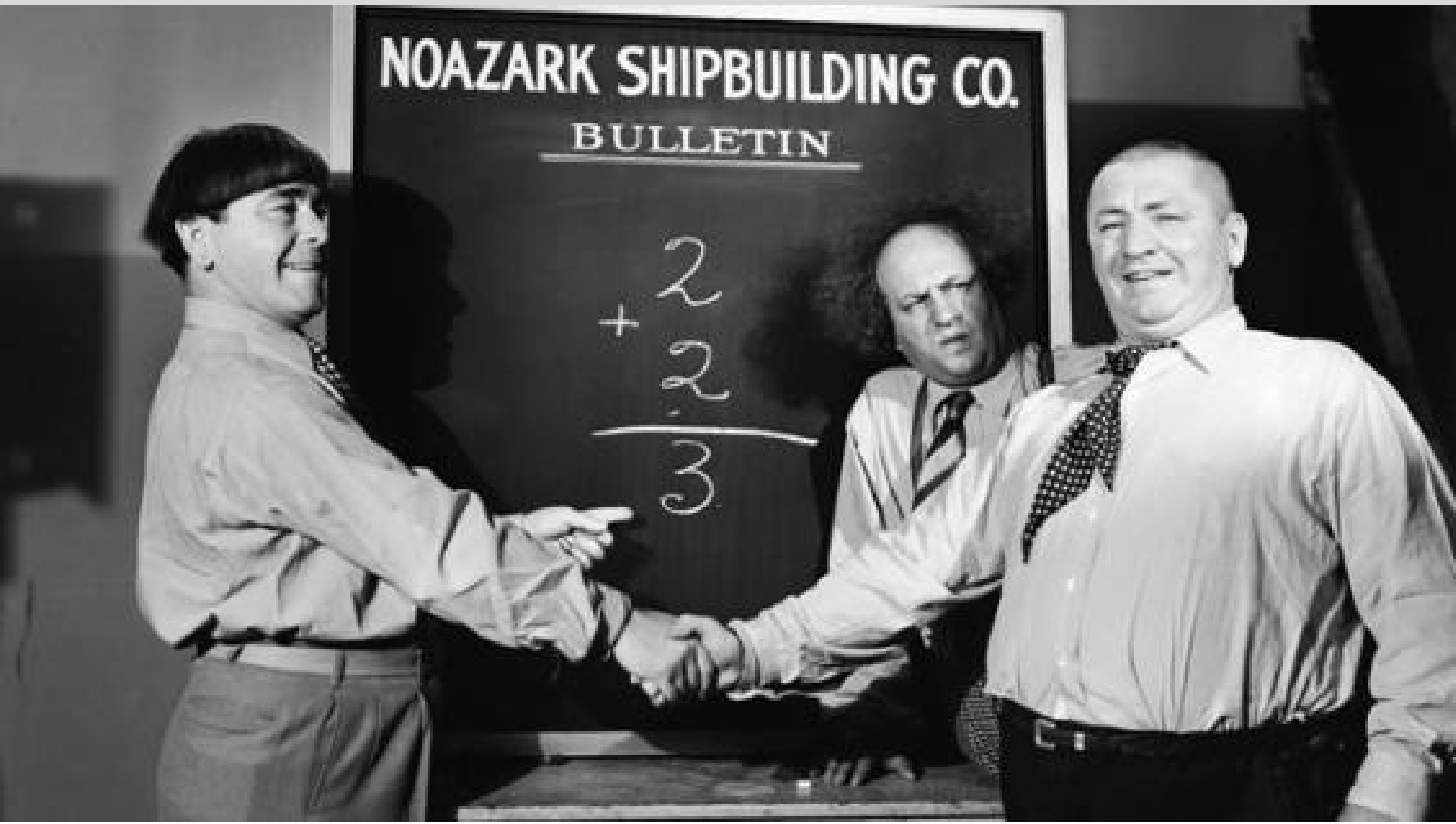


Organize Email		Manage Email			Manage Calendar				Manage Contacts			
Search Email	File Emails	Compose Email	Read Email	Delete Email	View Calendar	Create Appt	Update Appt	View Appt	Create Contact	Update Contact	Delete Contact	
Search by Keyword WIP	Move Emails	Create and send basic email Done	Open basic email Done	Delete email	View list of appts Done	Create basic appt Done	Update contents /location	View Appt Done	Create basic contact Done	Update contact info WIP		
	Create sub folders Done	Send RTF e-mail	Open RTF e-mail		View Monthly formats WIP	Create RTF appt		Accept/Reject/Tentative				Release 1
Limit Search to one field		Send HTML e-mail	Open HTML e-mail	Empty Deleted Items	View Daily Format	Create HTML appt	Propose new time		Add address data	Update Address Info	Delete Contact	
Limit Search to 1+ fields		Set email priority	Open Attachments			Mandatory/Optional						Release 2
Search attachments		Get address from contacts			View Weekly Formats	Get address from contacts		View Attachments	Import Contacts			
Search sub folders		Send Attachments			Search Calendar	Add Attachments			Export Contacts			Release 3

General Work Flow



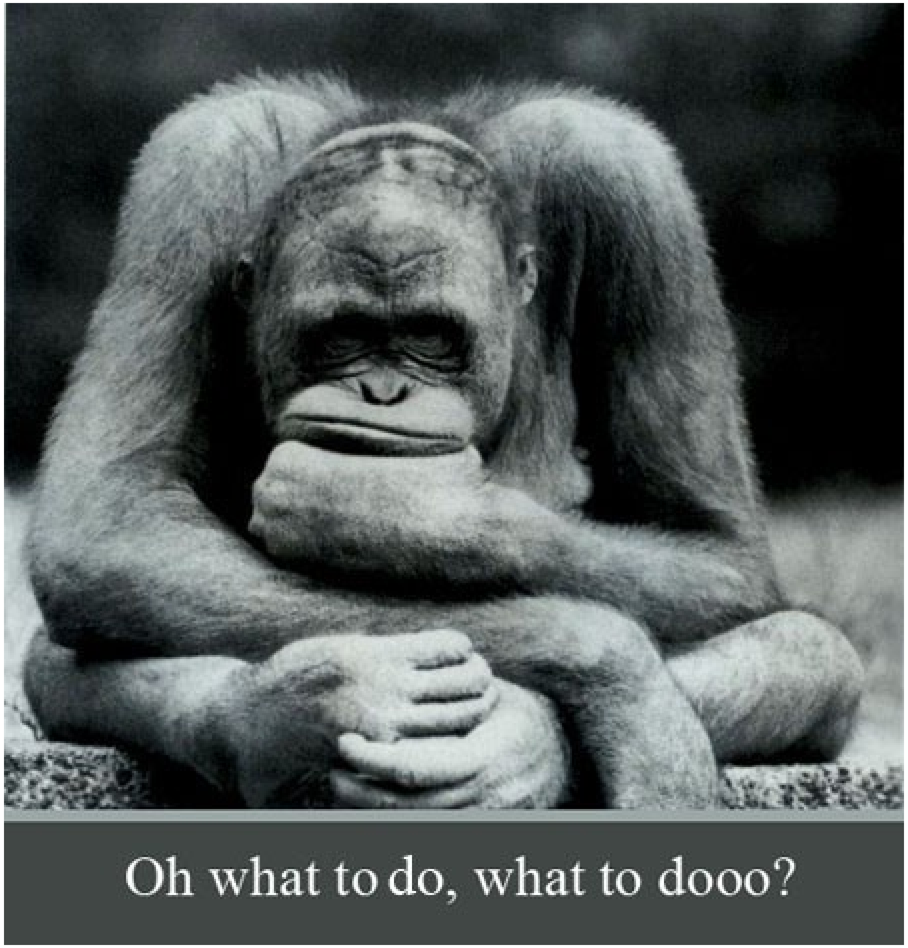
The Three Amigos



Ensure common & accurate understanding

Definition of Ready & Done

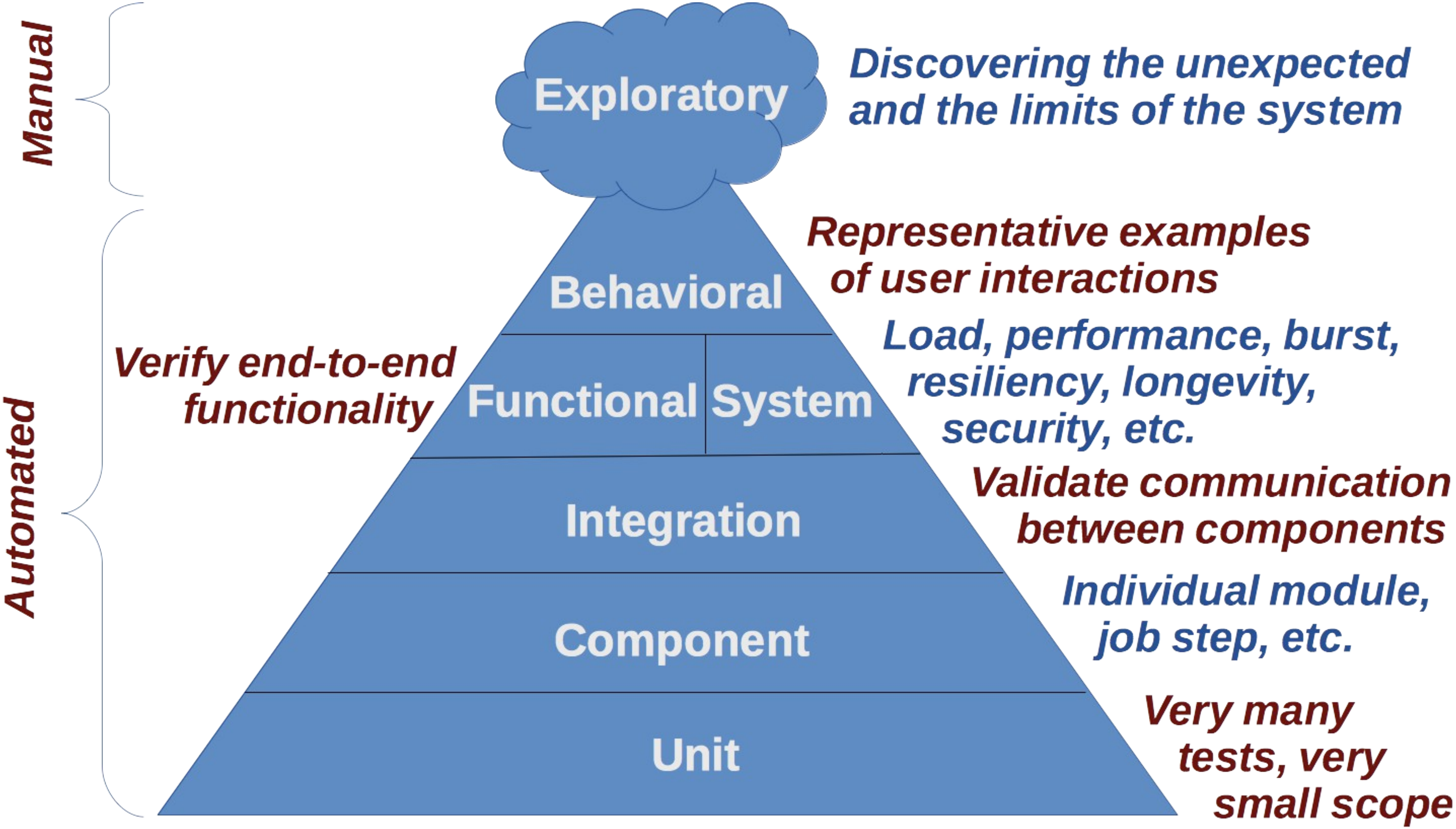
Team needs to know when to stop.



Oh what to do, what to dooo?

If it isn’t clear, then don’t start.

Testing Pyramid (General)


Manual
Exploratory
Discovering the unexpected and the limits of the system
Automated
Behavioral
Representative examples of user interactions
Verify end-to-end functionality
Functional
System
Load, performance, burst, resiliency, longevity, security, etc.
Integration
Validate communication between components
Component
Individual module, job step, etc.
Unit
Very many tests, very small scope

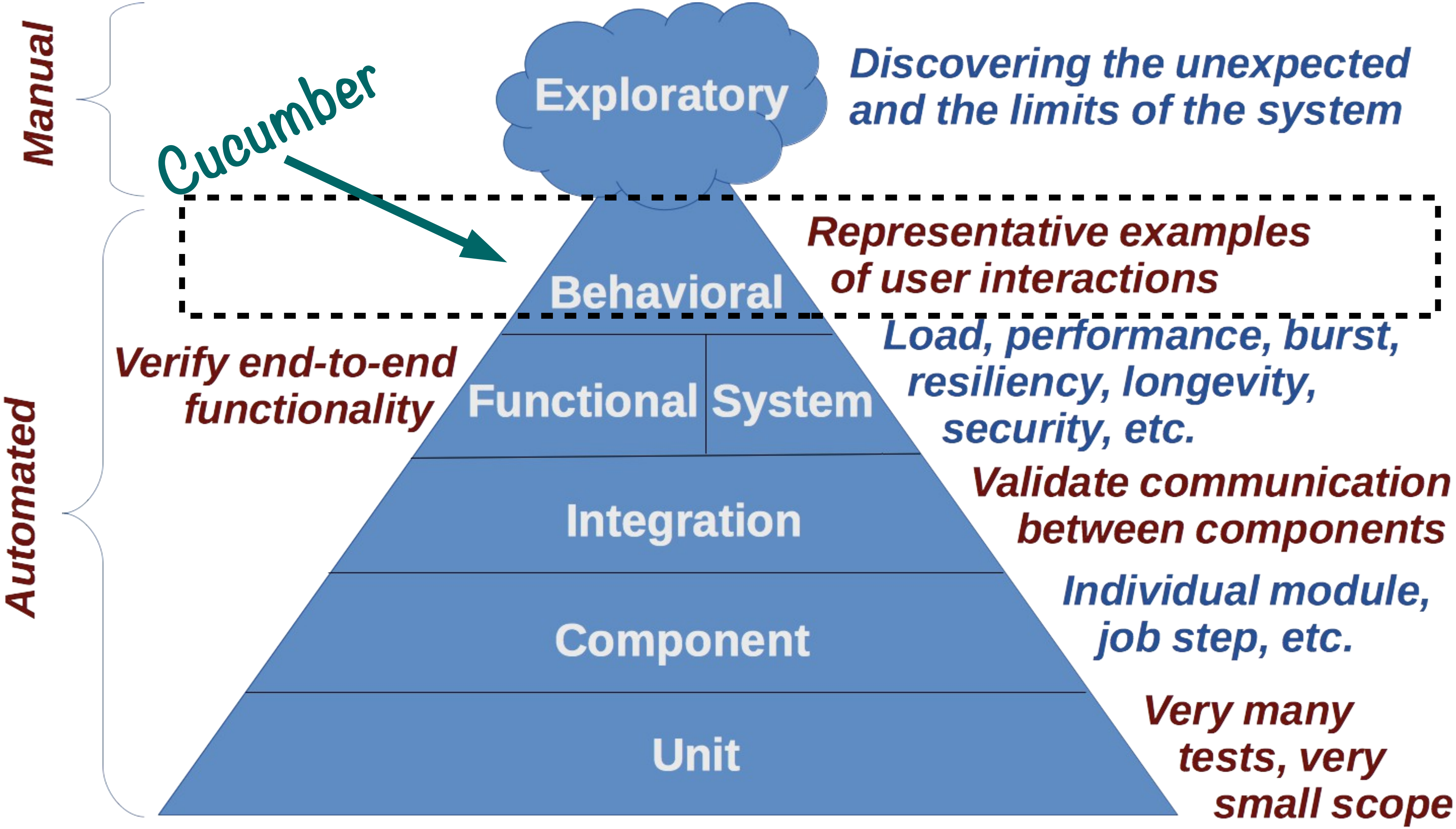
Summary: How To Get Things Done

- Know your capacity
- Set your utilization at 70% (not 100%)
- Understand business priorities
- Understand relative value
- Do the most valuable things first
- Do one thing (or very few) at a time
- Don’t start until you know what “done” looks like
- When blocked, remove the block

(don’t start something new)

- Keep people with rare skills available to help others
- Learn from all outcomes
- Apply good technical practices rigorously

Testing/Checking Pyramid



Discovering the unexpected and the limits of the system

Representative examples of user interactions

Verify end-to-end functionality

Load, performance, burst, resiliency, longevity, security, etc.

Validate communication between components

Individual module, job step, etc.

Very many tests, very small scope

Structure of a Test Case

- Set up preconditions
- Exercise the code under test
- Check the results

Gherkin or GWT: A Language for Tests

- Given: Set up preconditions
- When: Exercise the code under test
- Then: Check the results

Domain Specific Language

A language specialized for a given “domain”

Example	*Domain*
GML (GameMaker)	**Learning to program**
XML	**Structuring data**
Math notation	**Mathematics**
JUnit	**Unit testing (Java)**
R	**Data analysis**
J	**Array processing**
Gherkin	**Requirements elaboration**

Gherkin Language

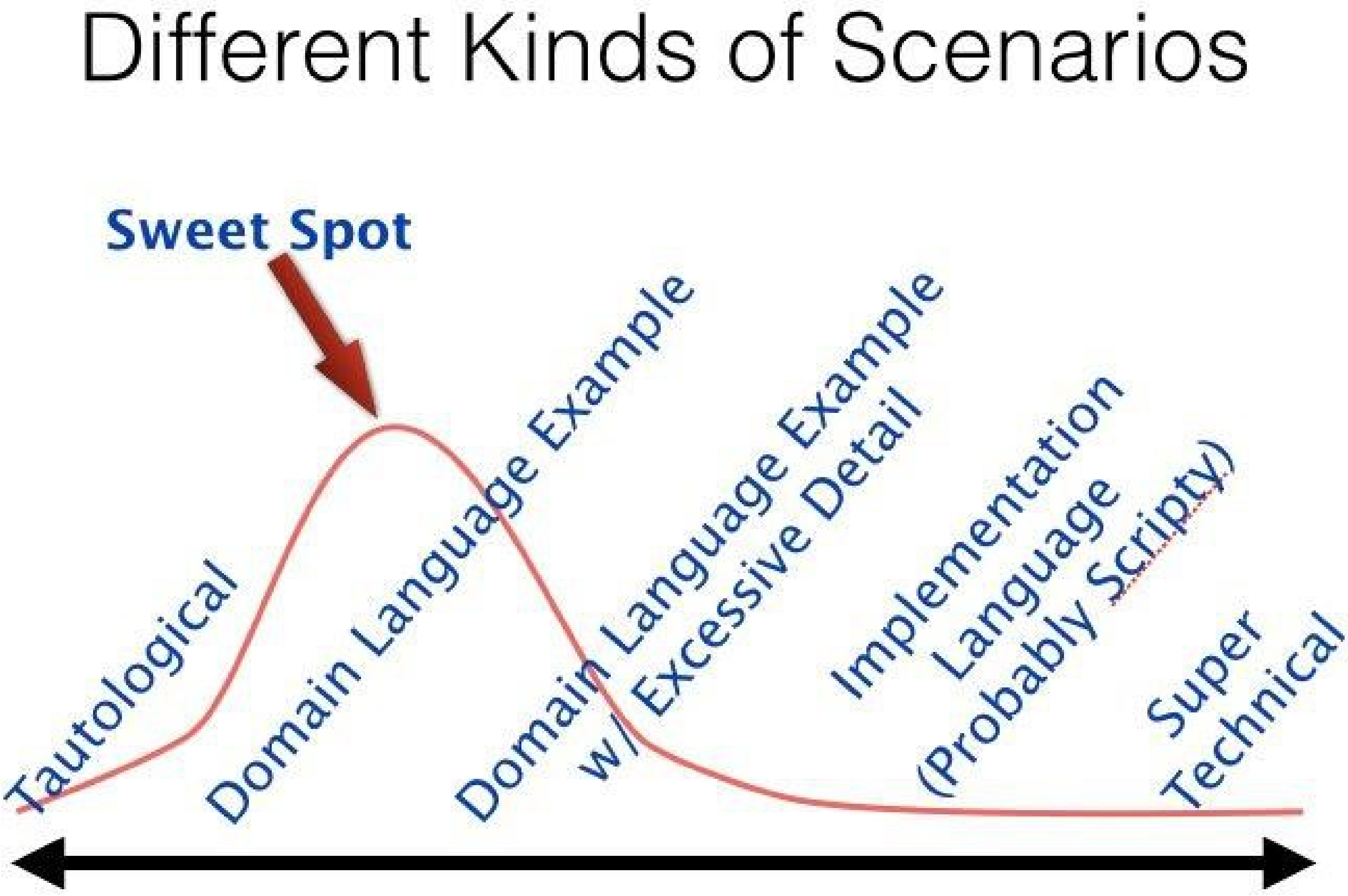
Feature
Scenario
Scenario Outline
Given
When
Then
And

Not recommended
But

Gherkin Example

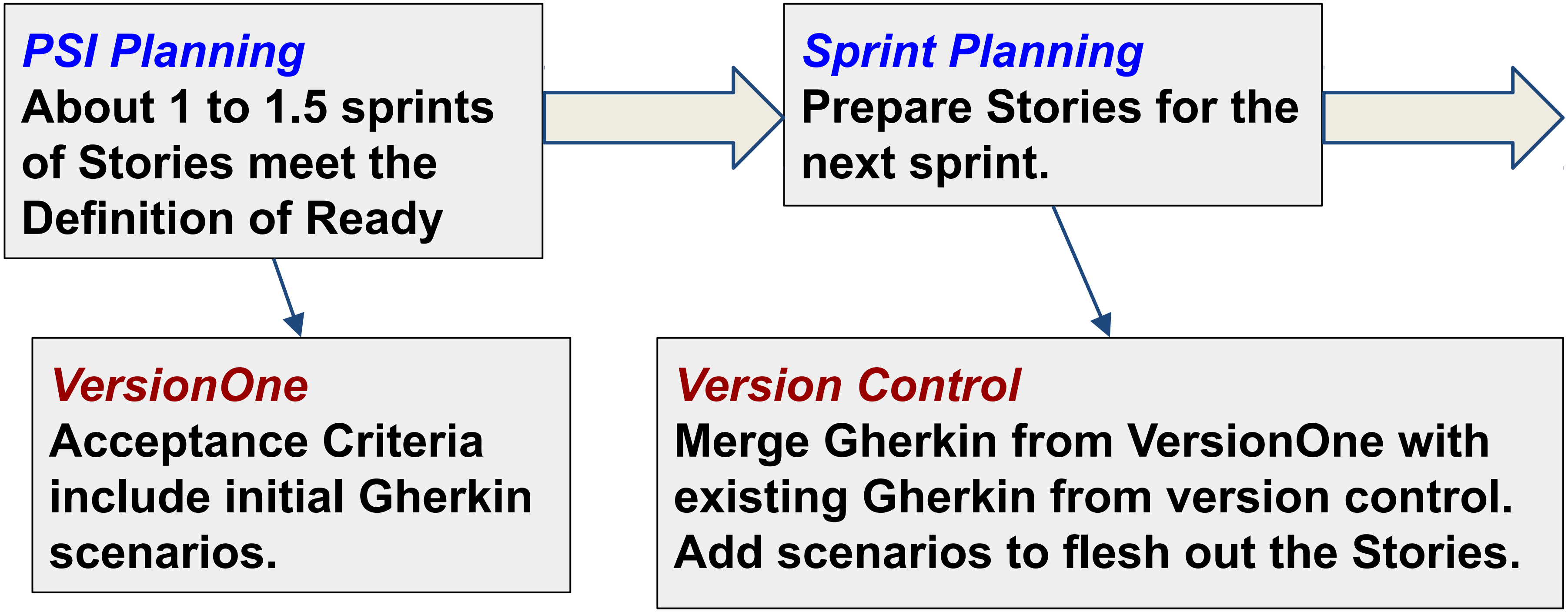
```
Feature: Customer login

Scenario: Successful login
  Given John Smith is a registered customer
  When he logs in as “smith12” with password “goodpass”
  Then the landing page is displayed
  And the welcome message reads “Welcome back, John!”

Scenario: Wrong password
  Given John Smith is a registered customer
  When he logs in as “smith12” with password “funky”
  Then the login form is displayed
  And the error message reads
                        “Unknown username or password”
```

Use Plain Domain Language


Different Kinds of Scenarios
Sweet Spot
Tautological
Domain Language Example
Domain Language Example w/ Excessive Detail
Implementation Language (Probably Scripty)
Super Technical

Gherkin Exercise

Gherkin, Cucumber, and ATDD Workflow



PSI Planning

About 1 to 1.5 sprints of Stories meet the Definition of Ready

Sprint Planning

Prepare Stories for the next sprint.

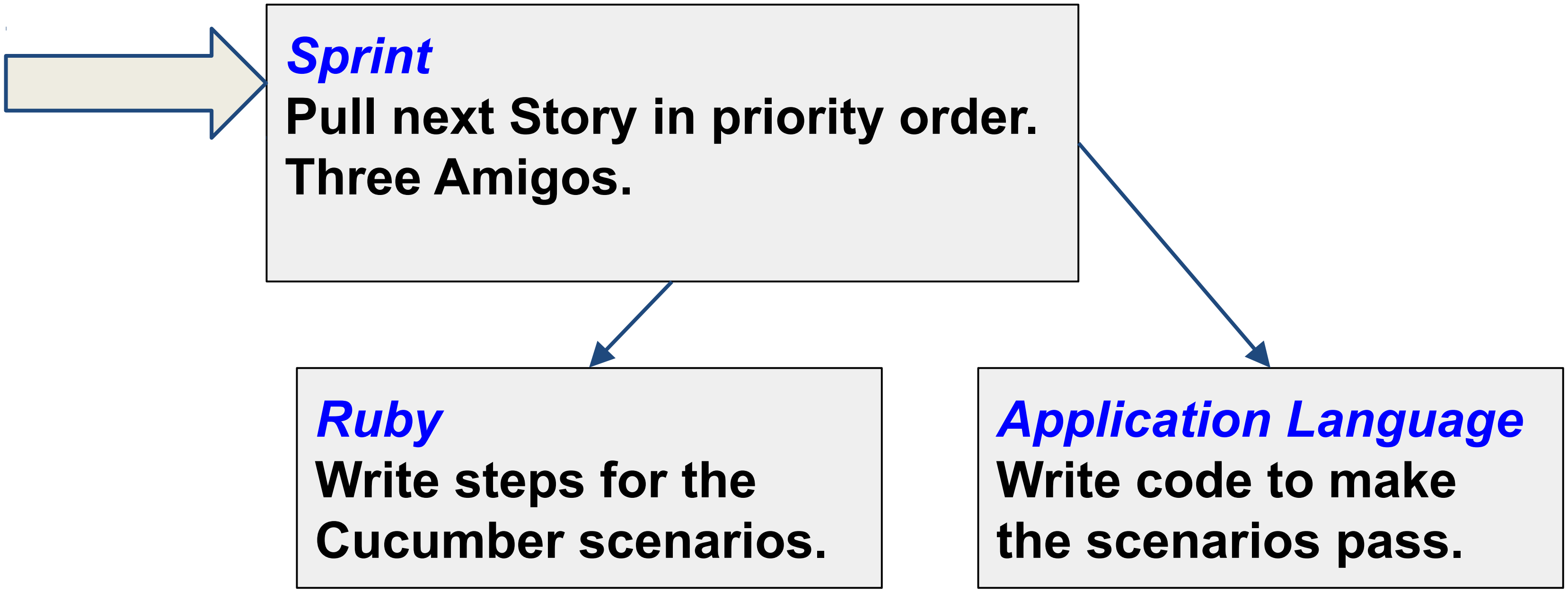
VersionOne

Acceptance Criteria include initial Gherkin scenarios.

Version Control

Merge Gherkin from VersionOne with existing Gherkin from version control. Add scenarios to flesh out the Stories.

Gherkin, Cucumber, and ATDD Workflow

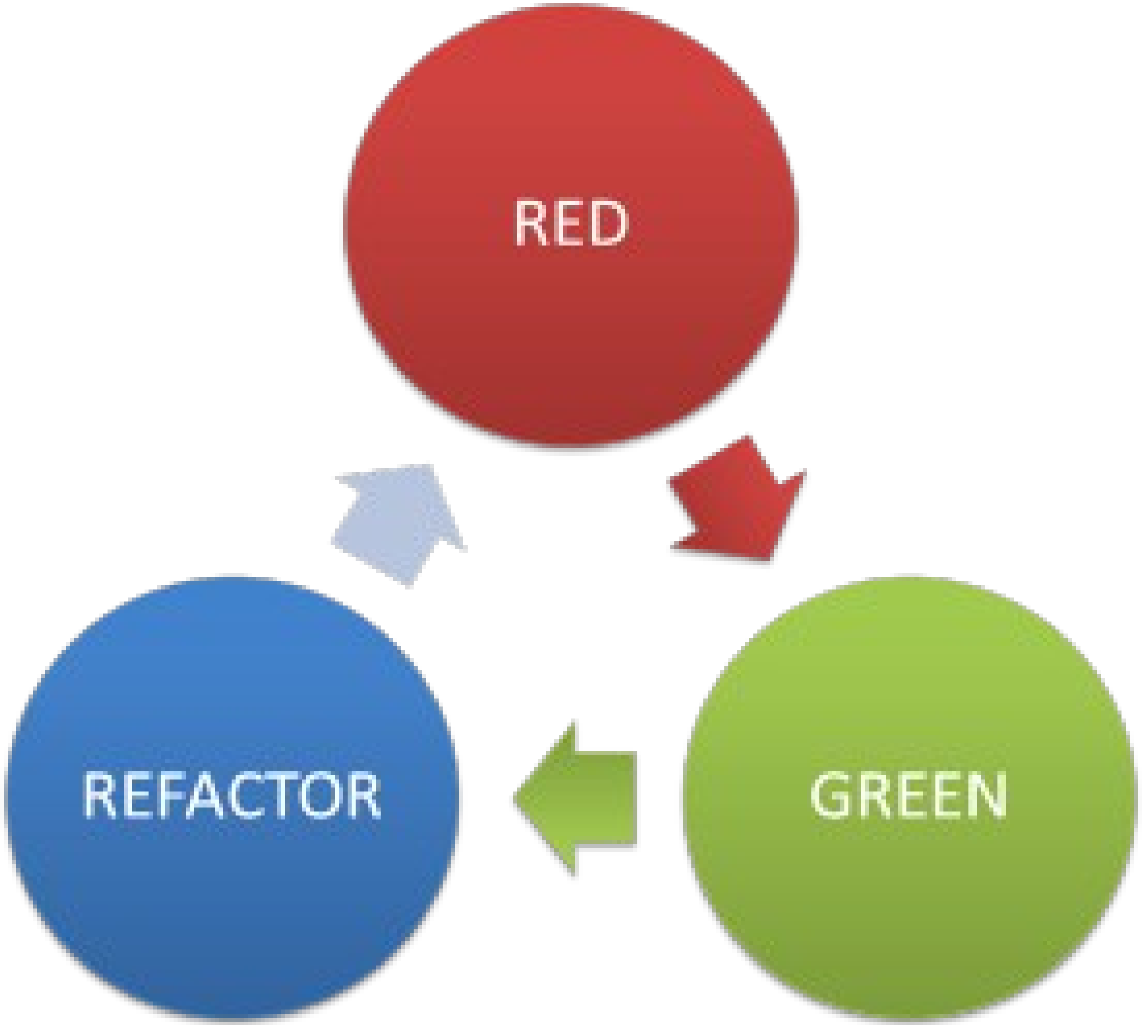


Sprint
Pull next Story in priority order.
Three Amigos.

Ruby
Write steps for the Cucumber scenarios.

Application Language
Write code to make the scenarios pass.

Test-Driven Development (TDD)


RED
GREEN
REFACTOR