



Project resources & methodology

DETI-UA/TQS

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Team project: goal

Apply SQA practices in a small project

Mind the PRODUCT

- ▶ Scope of implemented features
- ▶ Attributes: usability, robustness,...

Mind the (agile) PROCESS

- ▶ Software development process model
- ▶ Team practices and management
- ▶ Evidence of SQA practices



Main resources & deliverables

Project objectives, expected results and activities:

→ ["Project Guidelines"](#)

2 Technical reports [templates available]:

- [Product specification](#) report
- [Quality manual](#) report

Project activities:

- 5 x 1-week iterations
- In "Práticas":
 - Review previous iteration
 - Plan next iteration
- Final presentation:
 - Week 01/06
 - + project defense (to be scheduled)



Project scope

Web marketplace

- ▶ “Aggregator” business
- ▶ E.g.: <https://www.rocket-internet.com/companies>

Main architectural blocks

- ▶ Front end: web app.
 - ▣ You may pick the technology. Lightweight Java-templating/JavaScript would be natural
- ▶ Java backend (Spring Boot or “core” Java EE)
- ▶ Requires an integration API + external client(s)
- ▶ External client is expected to be very simplified
 - ▣ Emulate the Partner’s own system
 - ▣ Mobile app for end-users



Agile development practices required

Use the concepts and tooling for:

- [user stories](#) (granular sample usage scenarios)
- iterations (length = 1week)
- backlog grooming (proactive tracking)
- estimation and velocity
- development workflow.



(Scrum) Agile process

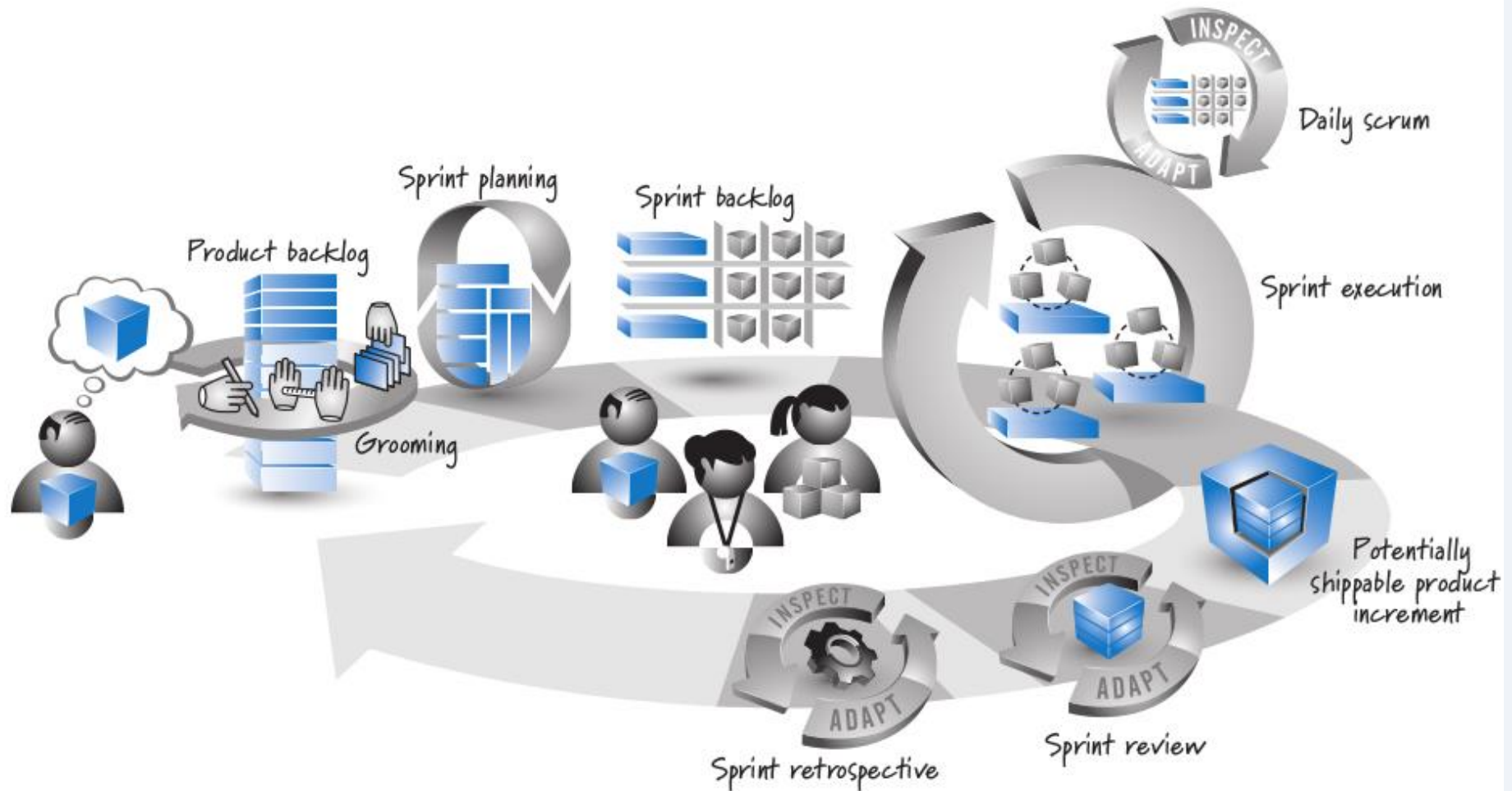
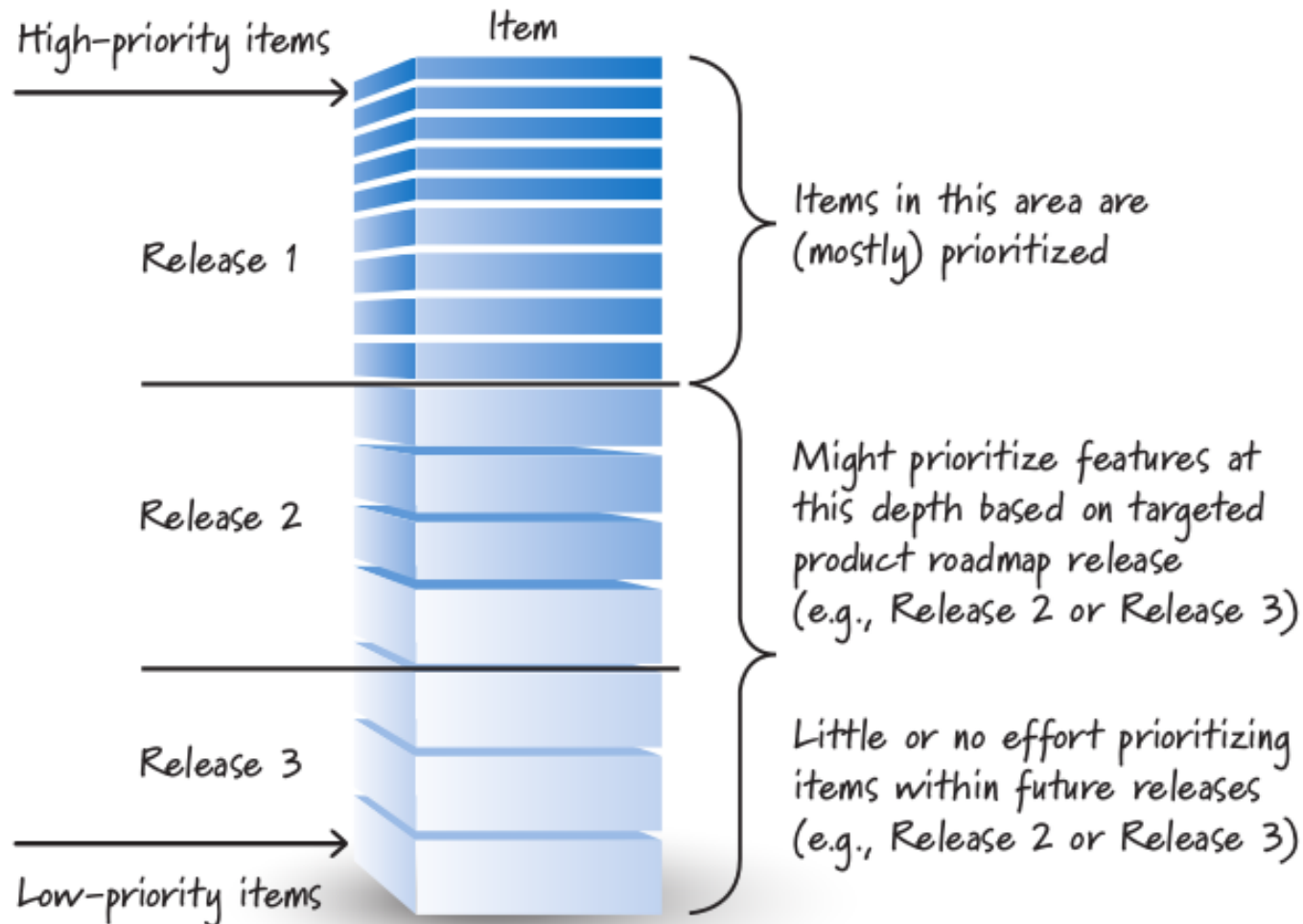


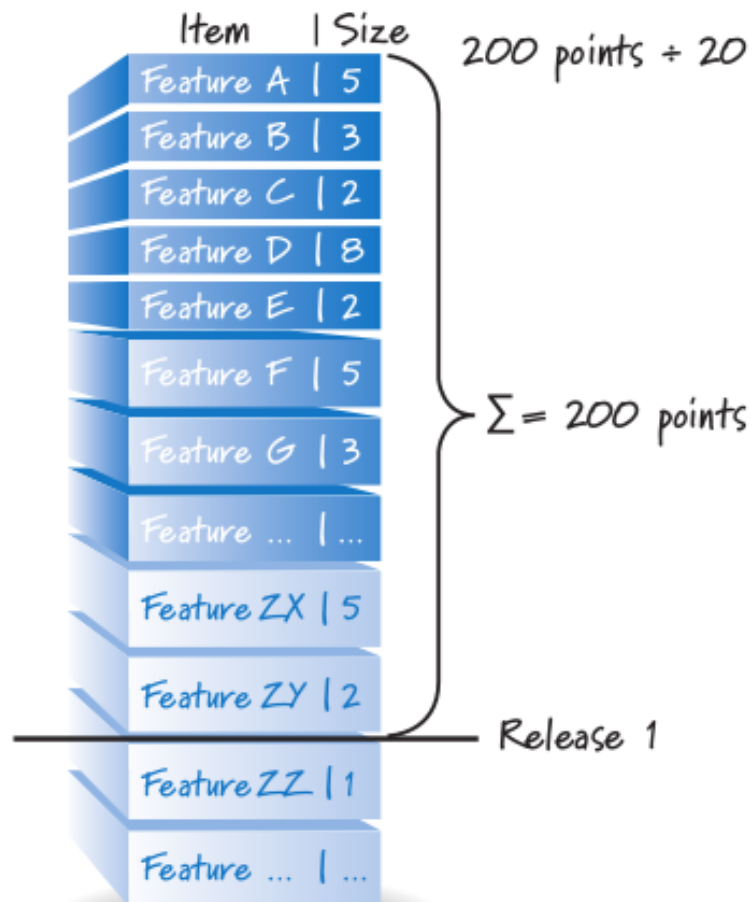
FIGURE 2.3 Scrum framework
I Oliveira

Backlog must be prioritized

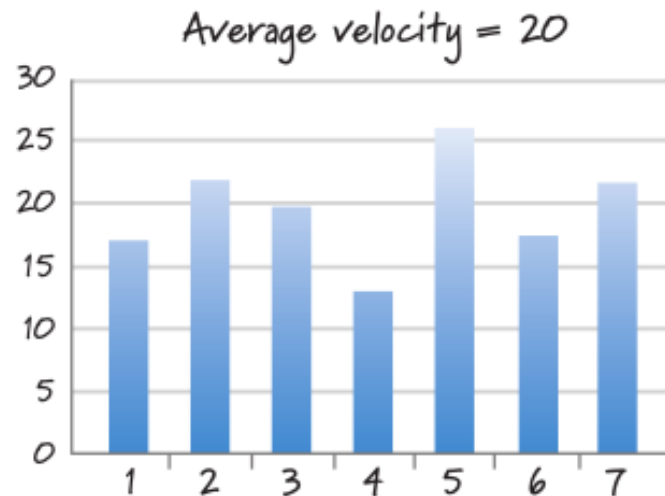


Estimation & velocity

Estimated size ÷ measured velocity = (number of sprints)



200 points ÷ 20 points/sprint = 10 sprints



Backlog granularity: **user stories**

User Story Title	Find Reviews Near Address
As a <user role> I want to <goal> so	As a typical user I want to see unbiased
that <benefit>.	reviews of a restaurant near an address
	so that I can decide where to go for
	dinner.

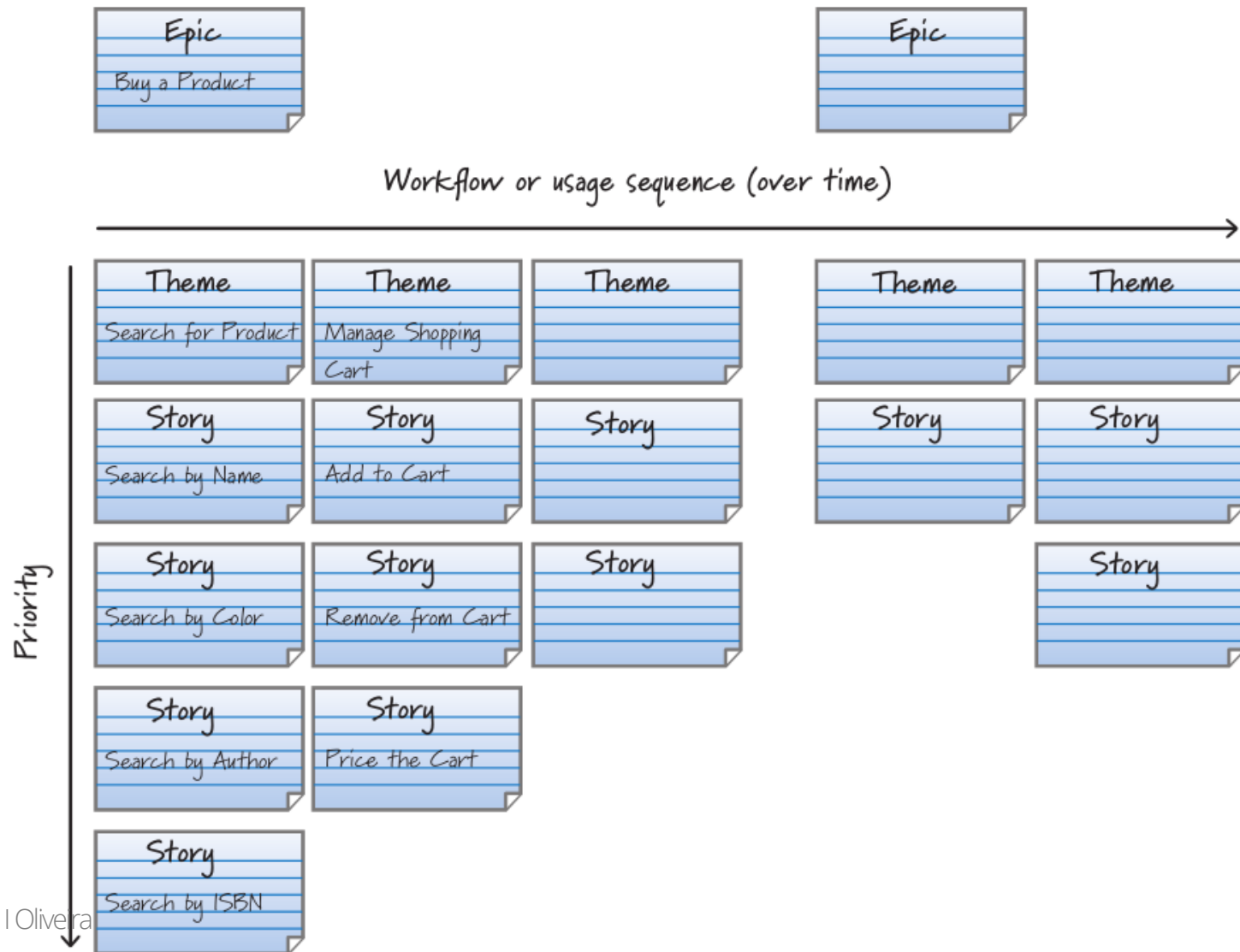
FIGURE 5.2 A user story template and card

Automatic Builds
As a developer I want the builds to
automatically run when I check in code
so that regression errors are detected
when they are introduced.

Undesirable technical story



Finding good stories



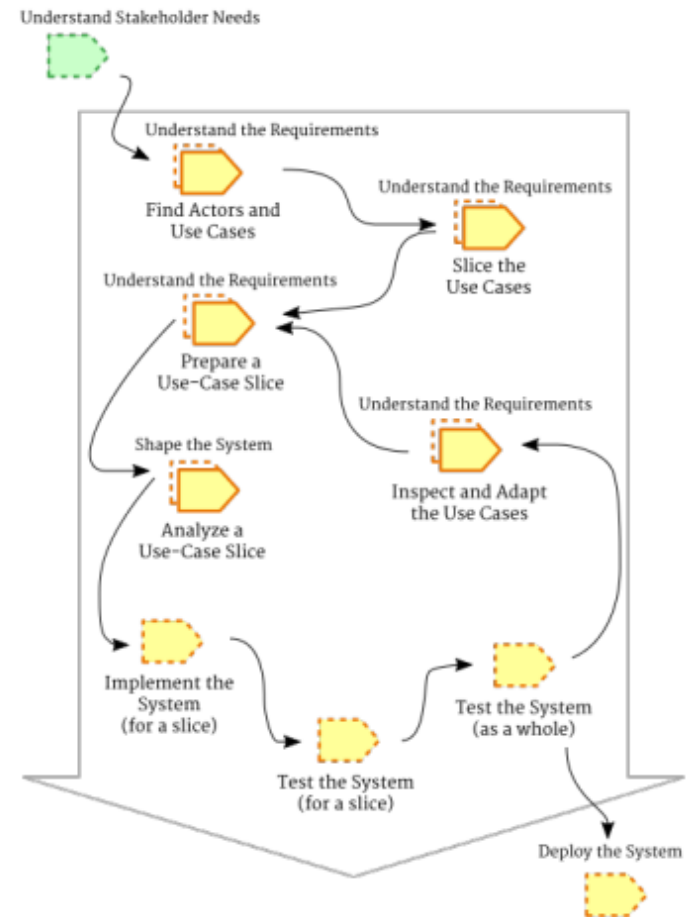
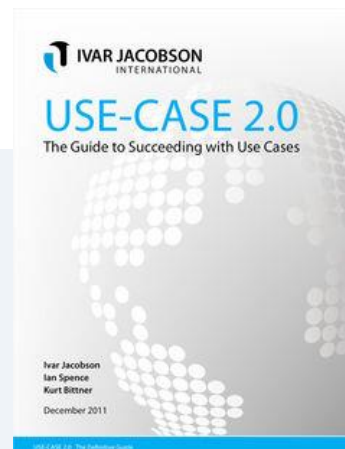
Things to Do

The practice starts by finding actors and use cases, and selecting and prioritizing the parts (slices) of the use cases to be developed.

It continues by detailing the use-case slices and, more importantly, the test cases required to verify each slice. Focus then switches to implementing software in order to pass the test cases. The practice concludes by tracking progress in terms of verified, working software and feeding back the outcomes in order to handle change and better support the team.

Acceptance
criteria.

<https://www.ivarjacobson.com/publications/brochure/use-case-essentials-practice-flyer>



User stories

Use-case slice

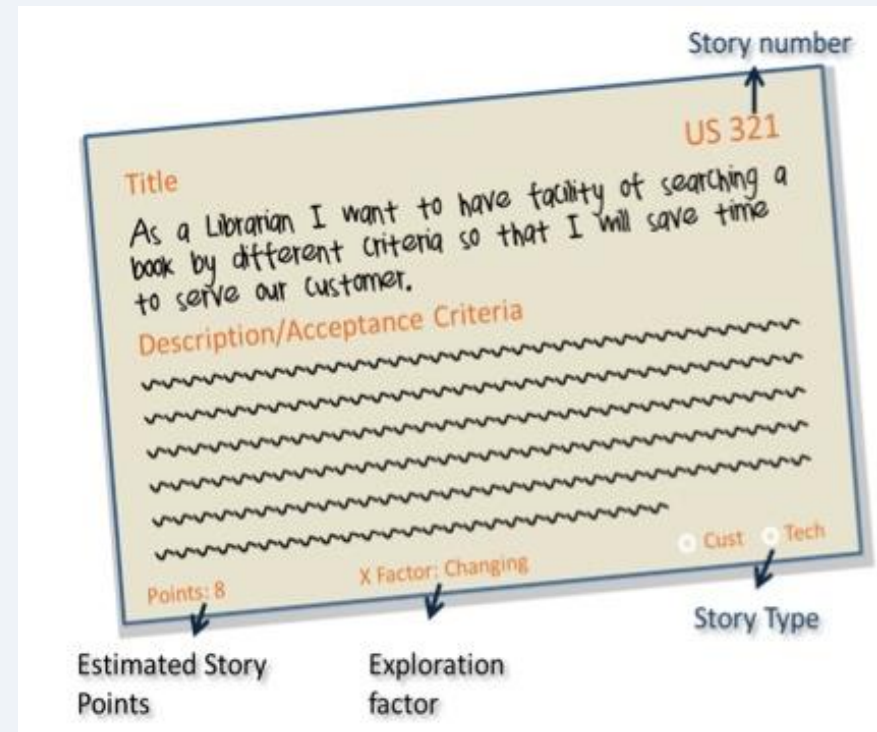
a collection of front-to-back flows through a use case, including the associated test cases that is of clear value to the customer → story.

Story

a description of a requirement and its business benefit, and a set of criteria by which we all agree that it is "done".

provide verifiable business value to the team's customer (e.g., "Add a Special Instructions field to the checkout page," "As a shopper, I want to see my purchase history load in half a second so that I can find previously purchased items").

→ [Examples](#)



Story “template” elements

The narrative should include a role, a feature and a benefit

- ▶ Title (one line describing the story)

Narrative:

- ▶ As a [role]
- ▶ I want [feature]
- ▶ So that [benefit]

The template “*As a [role] I want [feature] so that [benefit]*” has advantages → you cause the story writer to consider *why* they want a feature.

Writing stories is likely be an iterative process.

- ▶ The stakeholder will have an idea of what they want but will usually not know how much work will be involved, or how that work will be allocated.
- ▶ With the help of the technical and testing experts, they will understand the cost/benefit trade-off of each scenario



Stories define your project

Every project starts with a story, no matter what you're building. Tracker helps your team better develop and keep track of them while they progress from start to delivered.

Start with a good story

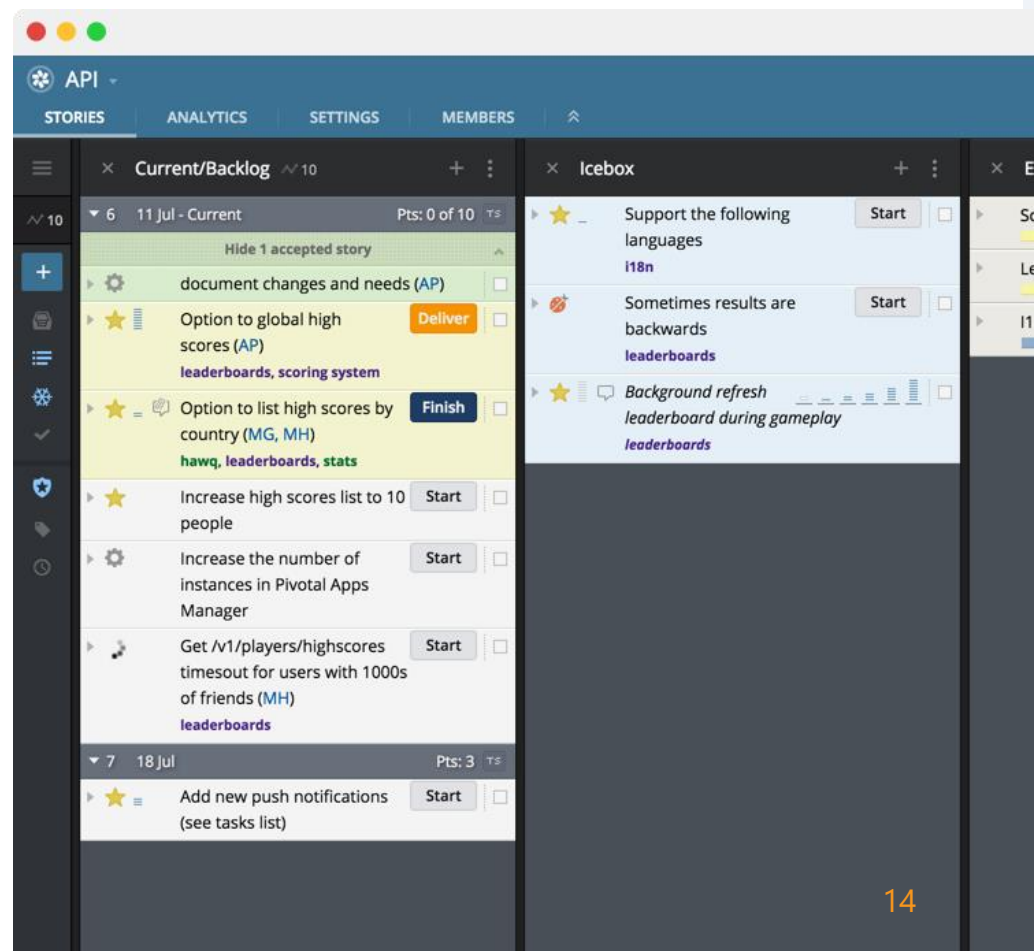
A story is a small, actionable bit of work that's either a placeholder for a future conversation or a reflection of one that already happened. Outlining what a user needs helps you focus on the what, not the how.

Define the story

Select among features, bugs, and chores to strike a healthy balance between building new features, staying ahead of technical debt, and keeping the bugs from piling up.

Estimate, then prioritize

Writing the story is just the beginning—now you get to rap about it. Estimate as a team to uncover the story's complexity. Choose among several point scales, then drag-and-drop to prioritize by iteration.



(Pivotal) **Tracker style**

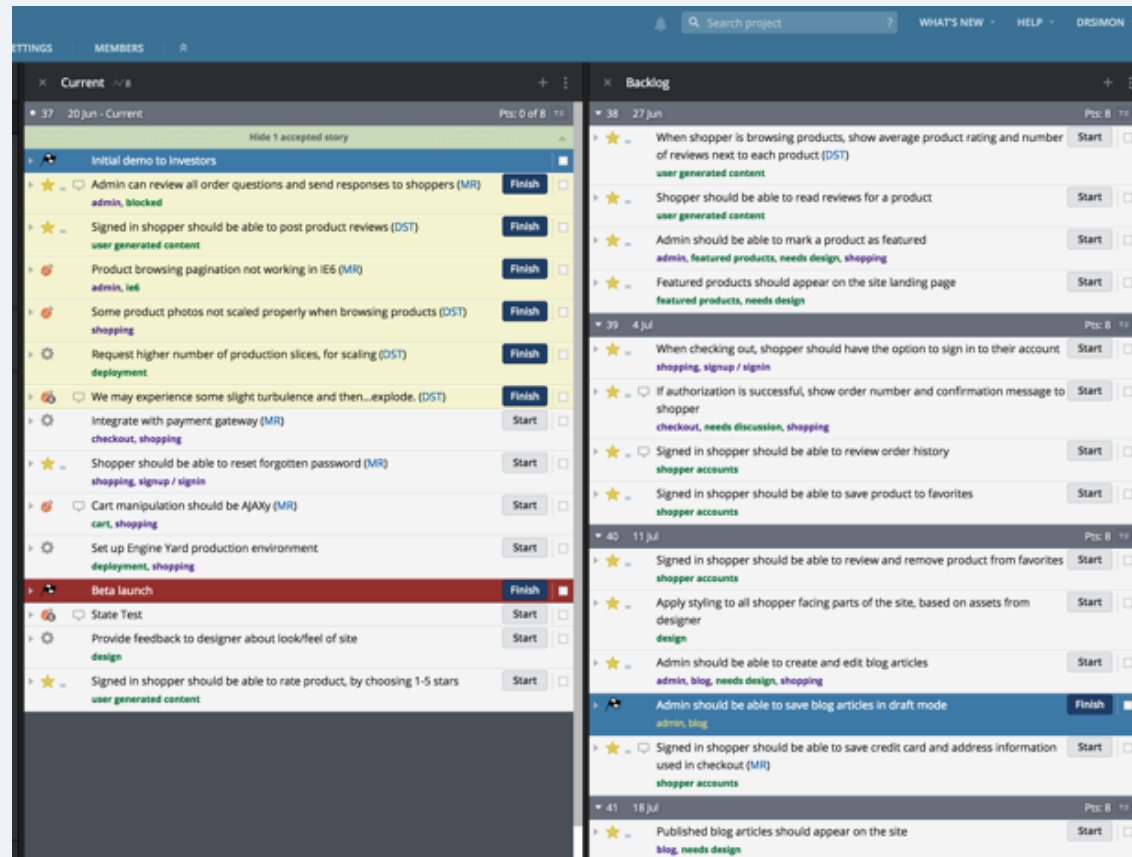
Tracker lists stories in a project's Current and Backlog [panels](#) in priority order.

Dragging a story to the top of your Backlog makes it the top priority

Tracker is a “pull” scheduling system — it pulls in stories to fill the team's WIP limit, based on [velocity](#).

Tracker automatically moves stories from the top of your project's Backlog into the current iteration according to the current [velocity](#). (depending on the individual [story estimates](#)).

Tracker projects use a linear point scale (i.e., 0, 1, 2, 3). You can change



Story-oriented workflow

1. Write a story
2. Estimate effort with points
3. Prioritize
4. Track story [next slide]

Stories are tracked

The delivery team gives each feature a [story point estimate](#) during iteration planning.

Story states are unscheduled, unstarted, started, finished, delivered, accepted, or rejected.

Integrate with automated order fulfillment

ID #107079960

Close

STORY TYPE

★ Feature

POINTS

Unestimated

STATE

Start

Unscheduled

REQUESTER

jc

Jayne Cobb

OWNERS

<none>

FOLLOW THIS STORY

(1 follower)

Updated: 3 minutes ago

DESCRIPTION (edit)

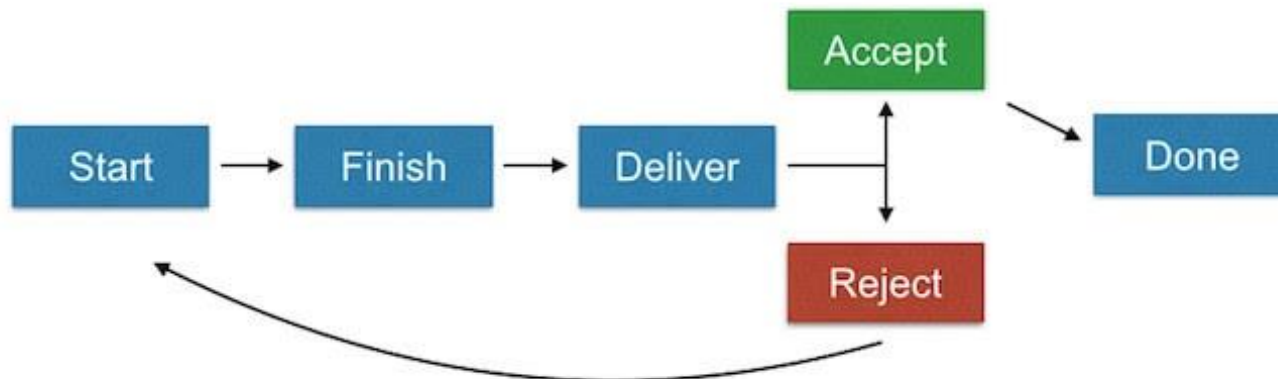
LABELS

TASKS

ACTIVITY

MR Mal Reynolds @malr

Add a comment or paste an image



https://www.pivotaltracker.com/help/articles/tracker_workflow/



More on stories @PT

Be Good To Your Devs: Write User Stories That Are Easy To Understand

<https://content.pivotal.io/blog/be-good-to-your-devs-write-user-stories-that-are-easy-to-understand>



Resources and tools

Agile Backlog

- ▶ Public project at PivotalTracker, or
- ▶ “boards” in [other tools](#) (as long you capture the backlog + stories + iterations + estimation)

Tech stack

- ▶ Spring Boot in the backend
- ▶ Container-based deployment

CI/CD

- ▶ You may choose your “weapons”...
 - GitLab CI, GitHub Actions, Jenkins (dockerized)
- ▶ CD should deploy the services

Infrastructure

- ▶ VM hosted at UA (Ubuntu server)
- ▶ Or your “own”:
 - ▣ Heroku, Azure,...



Recap

Agile process

- ▶ Backlog grooming with user stories
- ▶ Stories include acceptance criteria
- ▶ Iteration focus

Product

- ▶ Full stack: Front end + backend
- ▶ Your API
- ▶ Simplified external client


SQA


- ▶ Feature-driven (trace to user stories)
- ▶ Automated testing (multiple types)
- ▶ DoD must include tests
- ▶ Code analysis quality gates
- ▶ CI w/ Peer Review
- ▶ CD pipeline
- ▶ Practices specified in the Quality Manual




Challenge

Enrich your development environment with integrations & feedback



Product Customer StoriesBlogSign inSign up


All IntegrationsUtilityProductivityIssue TrackingProject ManagementMore 

Integrations complete the picture

Browse the growing list of integrations, tools, and applications shared by members of our community that extend Tracker's functionality via the API.

Q Search...


Top Integrations



JIRA

Productivity


Integrate your project with JIRA instances...



Zendesk

Customer Support


Link stories created from Zendesk tickets...



GitHub

Productivity

Link your GitHub commits to Tracker stories...



Slack

Productivity

Post story activity updates to a Slack channel...

I Oliveira

21