Master 's Degree in Informatics Engineering

2022/23

IT Project Management

Scrum

Based on
"The Scrum Guide™, The Definitive Guide to Scrum: The Rules of the Game"
(November 2020 version)
https://scrumguides.org/scrum-guide.html

Prof. Juan Enrique Garrido Navarro
juanenrique.garrido@udl.cat

Universitat de Lleida
Departament d'Informàtica
i Enginyeria Industrial

Table of Contents

- ✓ Introduction
- ✓ Global Vision
- ✓ The Scrum Team
- ✓ Events
- ✓ Artifacts
- ✓ Additional tools

Table of Contents

- ✓ **Introduction**
- ✓ Global Vision
- ✓ The Scrum Team
- ✓ Elements
- ✓ Additional tools

Introduction

Definition

- Early 1990s.
- Framework:
  - Lightweight.
  - Simple to understand.
  - Difficult to master.
- With it?
  - To be able to address problems.
  - To deliver products of the highest possible quality.
  - Apply different processes and techniques.
    - You can continuously improve the product, the team and the working environment.

Introduction

Essence

- Small team of people.
- The individual team is highly flexible and adaptive.
- Scrum Teams are cross-functional.
- The Scrum Team is responsible for all product-related activities from stakeholder collaboration, verification, maintenance, operation, experimentation, research and development, and anything else that might be required.

Introduction

Theory

- Iterative
- Incremental
- Control Risk

Introduction

Pillars

- Transparency
  - Observers share a common understanding of what is being seen.
    - Common language by all participants.
    - Same definition of “Done”.
- Inspection
  - It is a must to frequently inspect (artefacts, progress) to detect undesirable variances.
  - Diligently performed to detect potentially undesirable variances or problems.
  - Inspection enables adaptation.
    - Inspection without adaptation is considered pointless.
- Adaption
  - Some deviation -> Result unacceptable -> adjust (as soon as possible to minimize further deviations).
  - Scrum events: Sprint planning, daily scrum, sprint review and sprint retrospective.

Introduction

Values

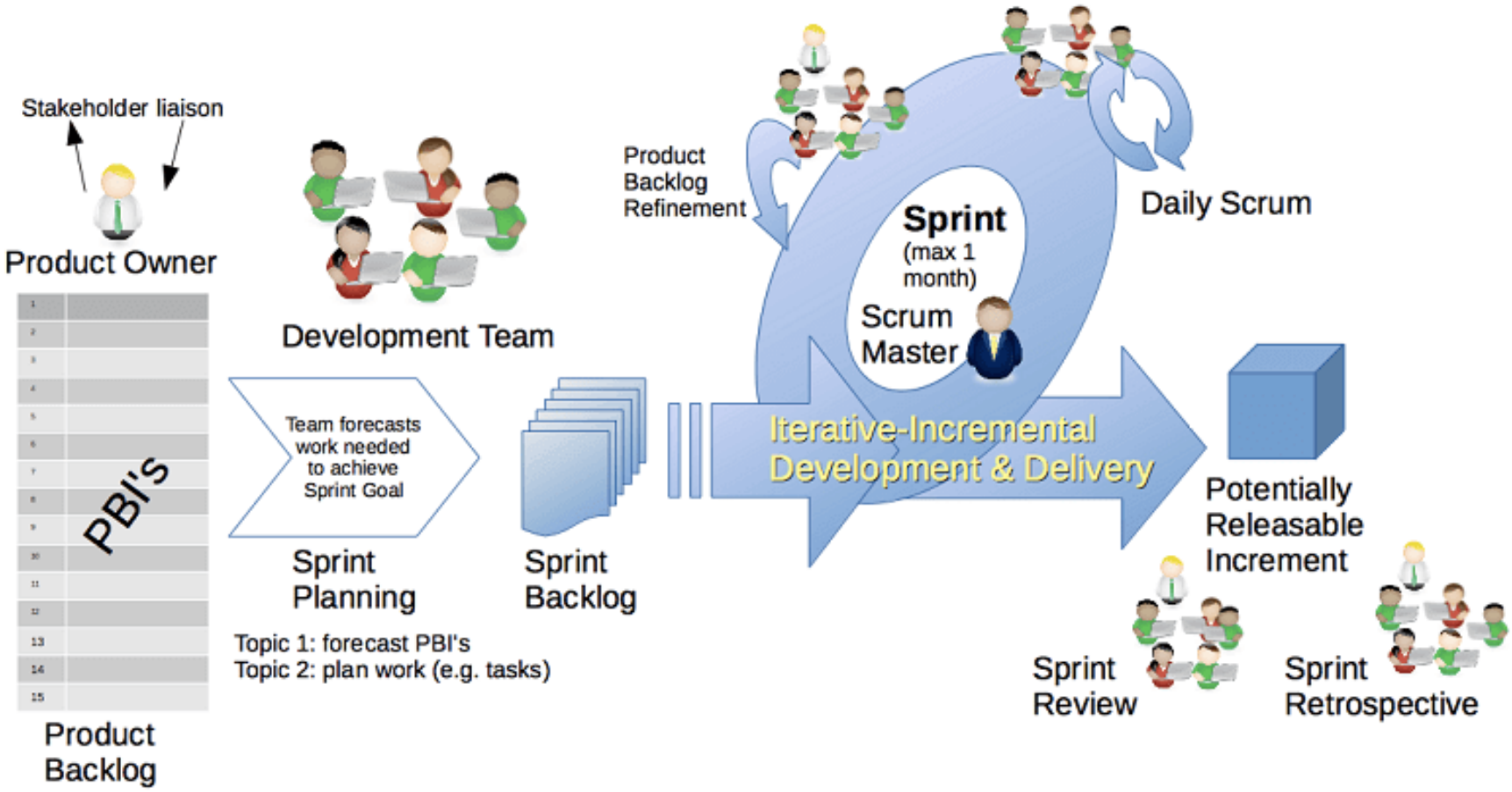
- Commitment + courage + focus + openness + respect => Scrum pillars (transparency, inspection and adaptation) come to life.

- Successful use of Scrum depends on people becoming more proficient in living these five values.

Table of Contents

- ✓ Introduction
- ✓ **Global Vision**
- ✓ The Scrum Team
- ✓ Events
- ✓ Artifacts
- ✓ Additional tools

Global Vision



[Image via Wikimedia Commons]

Global Vision

Global Vision

Table of Contents

✓ Introduction

✓ Global Vision

✓ **The Scrum Team**

✓ Events

✓ Artifacts

✓ Additional tools

The Team

- Product Owner
- Development Team
- Scrum Master

- The team
  - Self-organizing.
  - The team have all competencies needed to accomplish the work.
  - Deliver products iteratively and incrementally.
    - To maximize feedback.
    - A potentially useful version of working product is always available.

The Team

- Product Owner
- Development Team
- Scrum Master

The Team

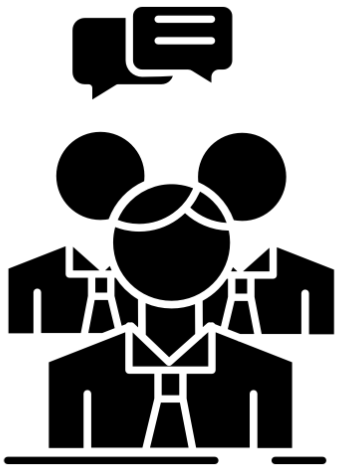
Product Owner

- The “voice” of the client inside the company.
- Responsible for maximizing the value of the product resulting from work of the Development Team.
- Responsible for managing the Product Backlog.
- Discover the requirements.
- Make petitions to the client for new findings and solutions to doubts.
- A person, not a committee.

The Team

Development Team

- Professionals who do the work of delivering potentially releasable Increment of “Done” product at the end of each Sprint.
- A “Done” is required at the end of the Sprint Review.
- Organizes and manages their own work.
- Size -> Optimal -> small enough to remain nimble and large enough to complete significant work within a Sprint.
- Multidisciplinary.
- High communication.
- Transparency.



The Team

Scrum Master

- Responsible -> correct application of Scrum as defined in the Scrum Guide.
  - Helps everyone understand Scrum.
- A leader:
  - Correct timing
  - Quality

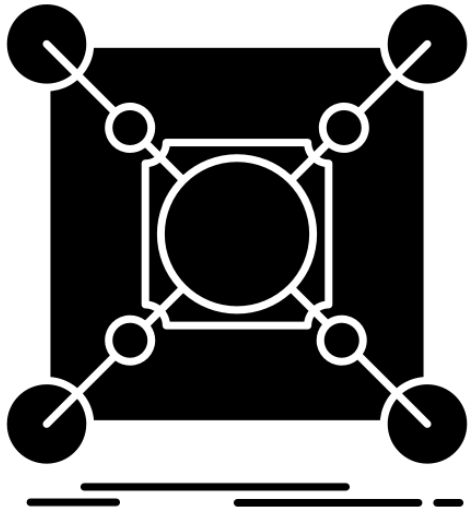
Table of Contents

- ✓ Introduction
- ✓ Global Vision
- ✓ The Scrum Team
- ✓ **Events**
- ✓ Artifacts
- ✓ Additional tools

Events

Sprint

- The heart of Scrum.
- Time-box of one month (or less).
- During it -> a “Done” is created (useable and potentially releasable).
- A new one starts immediately after the conclusion of the previous one.
- It could be consider as a project with no more than a one-month horizon.
- Result -> Increment



Events

Sprint

- During a Sprint:
  - No changes are made that would endanger the Sprint Goal.
  - Quality goals do not decrease.
  - Scope -> clarified and re-negotiated between the Product Owner and Development Team.

Events

Sprint

- Cancelling a Sprint:
  - Before the time-box is over.
  - Product Owner.
  - When? Sprint Goal is obsolete.
    - Company changes direction or market/technology conditions change.
  - Uncommon.

Events

Sprint

- A Sprint contains:
  - Sprint Planning
  - Daily Scrums
  - Development work
  - Sprint Review
  - Sprint Retrospective

Events

Sprint Planning

- 1-2 hours.
- It defines the work to be performed during the Sprint.
- Who? Collaborative by Scrum Team.
- Answer:
  - What? (Increment)
  - How?

Events

Sprint Goal

- Objective set for the Sprint

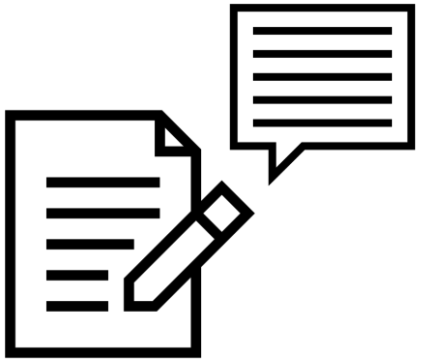
Events

Daily Scrum

- 15-20 minutes time-boxed event.
- Who? Development Team.
- Every day.
- Same place and time (less complexity).
- Plan the next 24 hours.
- Improve collaboration.
- To inspect the progress.
- Guideline:
  - What did you do yesterday?
  - What will you do today?
  - Impediments yesterday?
- Scrum Master ensures the meeting is held.

Events

Sprint Review



- At the end of the Sprint.
- To inspect the Increment.
  - The client validate or reject.
- Informal meeting.
- At most four-hour meeting and usually, shorter.
- Result? Revised Product Backlog.

Events

Sprint Retrospective

- Internal Validation.
- Opportunity for the Scrum Team to inspect itself and create a plan for improvement during the next Sprint.
  - Improvements: people, relationships, process, and tools.
- After a Sprint Review.
- Prior to the next Sprint Planning.
- Short.

Table of Contents

✓ Introduction

✓ Global Vision

✓ The Scrum Team

✓ Events

✓ **Artifacts**

✓ Additional tools

Artifacts

- Represent work.
- To provide transparency and opportunities for inspection and adaptation.

Artifacts

Increment

- The result of each sprint.
- A step forward to the final goal.

Artifacts

Product Backlog

- It is an ordered list of everything (requirements) to be needed in the product.
- Single source.
- Responsible? Product Owner:
  - Content
  - Availability
  - Order
- The list is jointly prepared between the client and the product owner.
- Never complete. Evolution. Dynamic.
  - "If a product exists, its Product Backlog also exits".
- How are expressed (requirements)? User Stories.

Artifacts

Product Backlog

- Once define all user stories -> Product Backlog
- The Product Backlog could be modified during the project:
  - Remove
  - Priority (changes)
  - New requirements
- Then…
  - The list should be easily accessible and modifiable.
- Prioritization -> Essential -> Higher ordered Product Backlog items are usually clearer and more detailed than lower ordered ones.
- Order -> Essential

How? User Stories

User Stories are short statements identifying:

- Type of person
- Functionality
- Value the person expect to achieve

Common language.

Once defined all user-stories -> A list of all functionalities should be stored -> Backlog -> There is a need to keep the list accessible (modifiable).

How? User Stories

As a <Role>

I Want to <function-description>

So I can: <value-statement>

I am a registered user

I want to change my password

to personalise it and better remember it

Artifacts

Sprint Backlog

- The set of Product Backlog items selected for the Sprint.
  - From High to lower priority.
- A forecast -> Development Team -> about what functionality will be in the next Increment -> a “Done” Increment.
- To ensure continuous improvement, it includes at least one high priority improvement.
- Modification during the Sprint? -> Only Development Team -> by learning more about the work needed.
  - New Work? Added.
  - Unnecessary? Removed.

Table of Contents

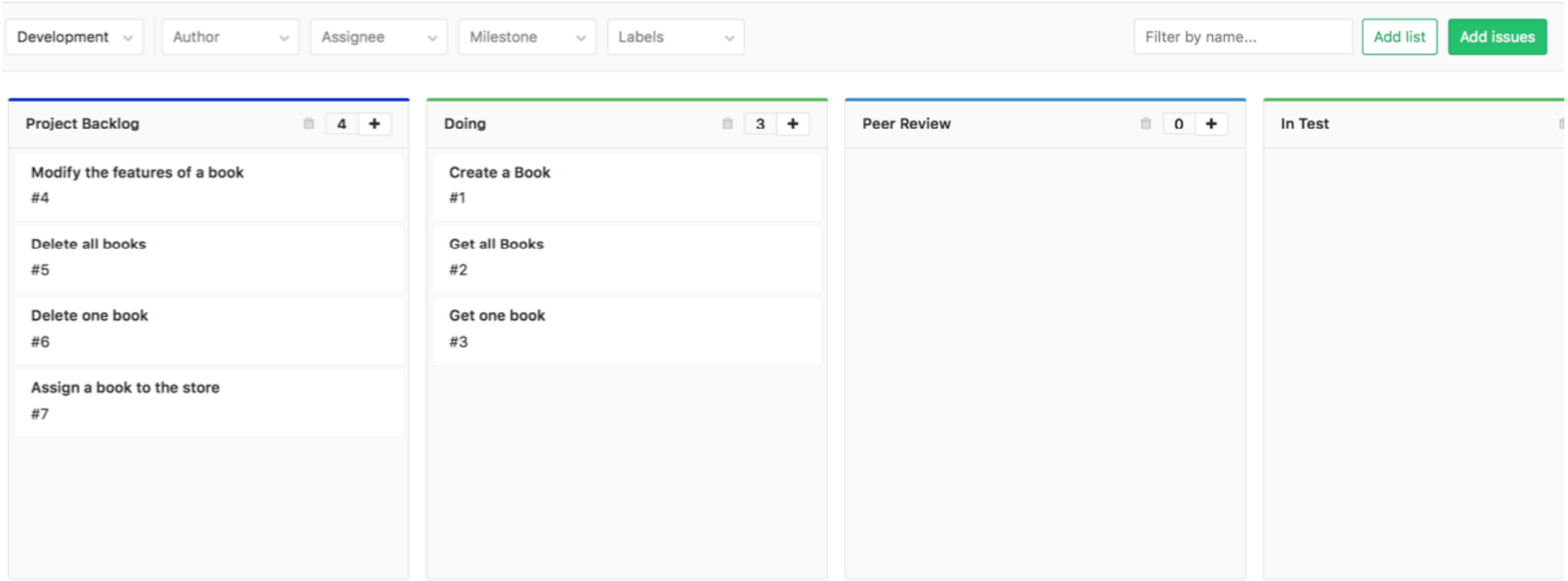
- ✓ Introduction
- ✓ Global Vision
- ✓ The Scrum Team
- ✓ Events
- ✓ Artifacts
- ✓ **Additional tools**

Additional Tools

Kanban

- The model Kanban is a overall graphical board to manage the features to be developed, prioritize it and give a global vision of the project.

ZenHub



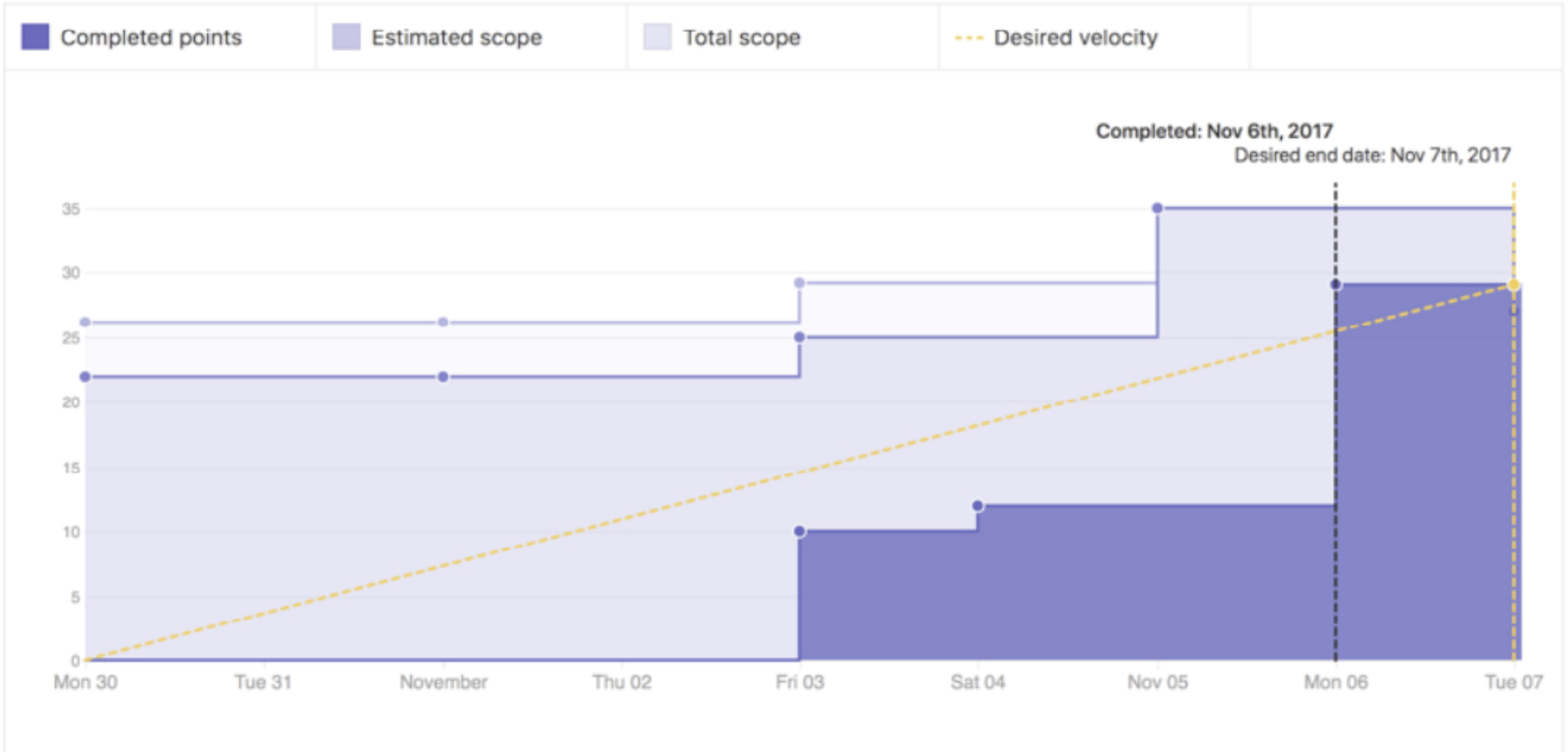
Additional Tools

Burnup

- To measure the average rate that the stories are completed across sprints.
- (Basic) Method: to divide the number of story points completed by the total number in the product backlog.
- Over time velocity is a measure of the work that can be expected to be completed in a sprint and it is used to ensure that the team doesn't overcommit the number of story points to be completed in a given sprint.

Additional Tools

Burnup



Additional Tools

Burndown

- To provide a graphical view of the number of stories in the backlog that have been completed against the total number remaining across sprints.

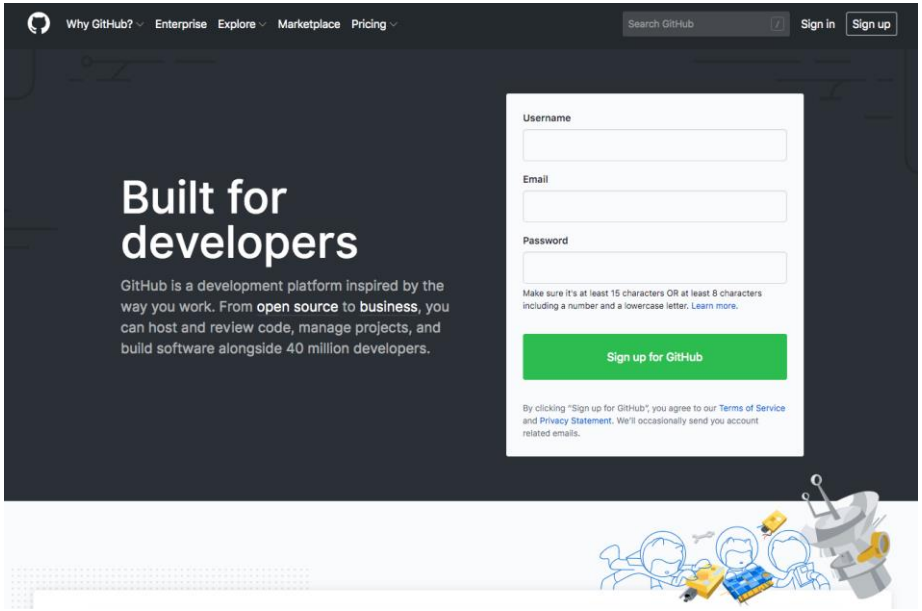
Hands on

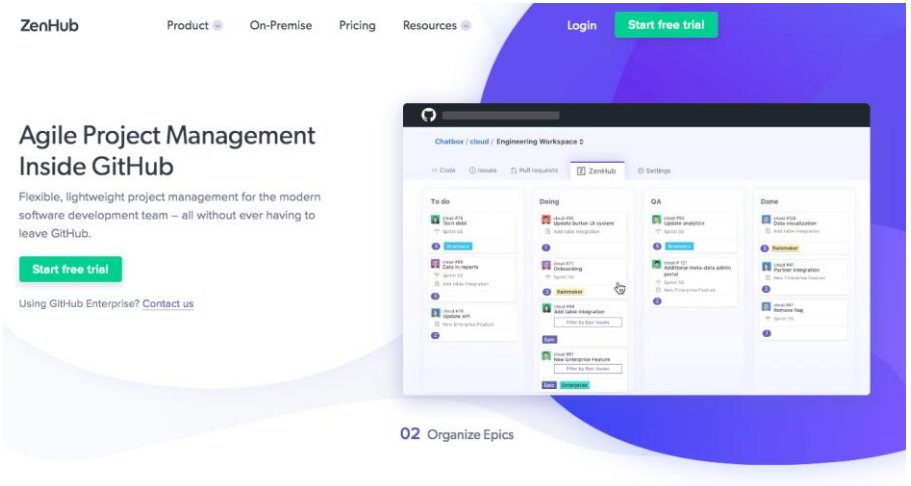
GitHub

https://github.com

ZenHub

https://zenhub.com





References

- https://scrumguides.org/scrum-guide.html
- https://www.scrumalliance.org

Master 's Degree in Informatics Engineering

2022/23

IT Project Management

Scrum

Based on
"The Scrum Guide™, The Definitive Guide to Scrum: The Rules of the Game"
(November 2020 version)
https://scrumguides.org/scrum-guide.html

Prof. Juan Enrique Garrido Navarro
juanenrique.garrido@udl.cat

Universitat de Lleida
Departament d'Informàtica
i Enginyeria Industrial