TECHNISCHE UNIVERSITÄT
CHEMNITZ

Current Trends in Web Engineering

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Verteilte und selbstorganisierende Rechnersysteme

Chapter://2

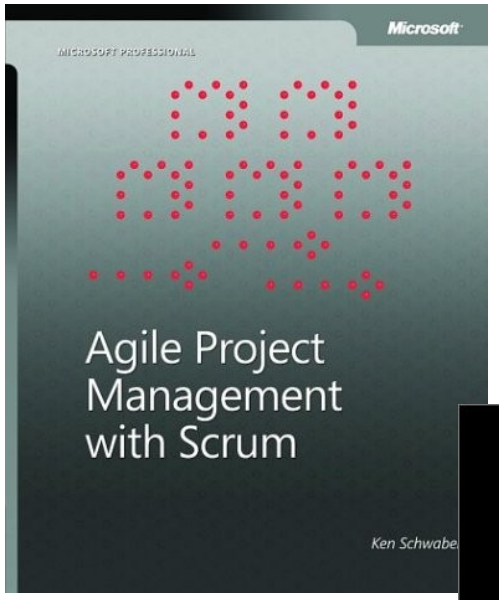
SCRUM

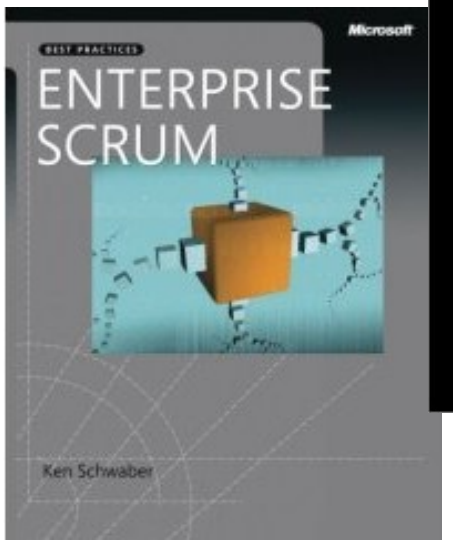
Scrum in 100 words

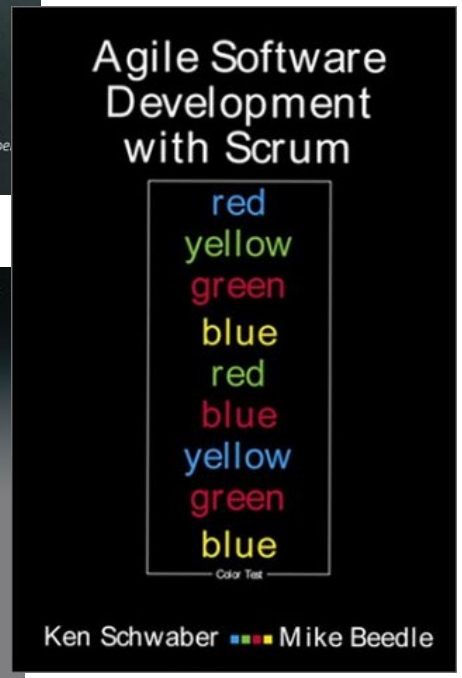
- Scrum is an agile process that allows us to focus on delivering the highest business value in the shortest time.
- It allows us to rapidly and repeatedly inspect actual working software (every two weeks to one month).
- The business sets the priorities. Teams self-organize to determine the best way to deliver the highest priority features.
- Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance it for another sprint.

Scrum origins

- Jeff Sutherland
  - Initial scrums at Easel Corp in 1993
  - IDX and 500+ people doing Scrum
- Ken Schwaber
  - ADM
  - Scrum presented at OOPSLA 96 with Sutherland
  - Author of three books on Scrum
- Mike Beedle
  - Scrum patterns in PLOPD4
- Ken Schwaber and Mike Cohn
  - Co-founded Scrum Alliance in 2002, initially within the Agile Alliance







Scrum has been used for:

- Commercial software
- In-house development
- Contract development
- Fixed-price projects
- Financial applications
- ISO 9001-certified applications
- Embedded systems
- 24x7 systems with 99.999% uptime requirements
- the Joint Strike Fighter

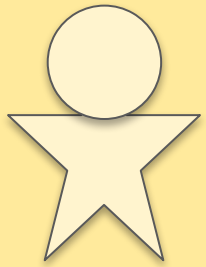
- Video game development
- FDA-approved, life-critical systems
- Satellite-control software
- Websites
- Handheld software
- Mobile phones
- Network switching applications
- ISV applications
- Some of the largest applications in use

Characteristics

- Self-organizing teams
- Product progresses in a series of month-long “sprints”
- Requirements are captured as items in a list of “product backlog”
- No specific engineering practices prescribed
- Uses generative rules to create an agile environment for delivering projects
- One of the “agile processes”

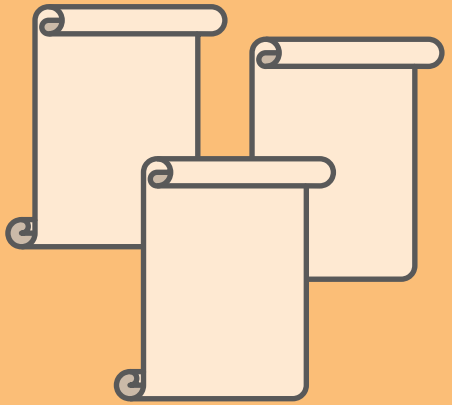
Roles

- Product owner
- ScrumMaster
- Team



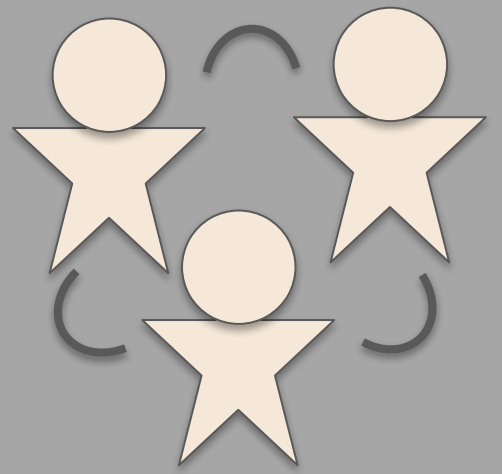
Artifacts

- Product backlog
- Sprint backlog
- Burndown charts



Meetings

- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting



Section://2

Roles

The SCRUM Team

- In Scrum we talk about pigs and chicken
  - Scrum Team (pigs - committed)
  - Other stakeholders (chicken - involved)

- The Scrum Team member are in one of the following roles:
  - Product owner
  - ScrumMaster
  - The Team

Product owner

- Define the features of the product
- Decide on release date and content
- Be responsible for the profitability of the product (ROI)
- Prioritize features according to market value
- Adjust features and priority every iteration, as needed
- Accept or reject work results
- Responsable for WHAT will be delivered

The ScrumMaster

- Represents management to the project
- Responsible for enacting Scrum values and practices
- Removes impediments
- Ensure that the team is fully functional and productive
- Enable close cooperation across all roles and functions
- Shield the team from external interferences
- Responsible for the Scrum Process

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The team

- Typically 5-9 people
- Cross-functional:
  - Programmers, testers, user experience designers, etc.
- Members should be full-time
  - May be exceptions (e.g., database administrator)
- Teams are self-organizing
  - Ideally, no titles but rarely a possibility
- Membership should change only between sprints
- Responsable for How Much will be delivered

Section://3

Sprint & Meetings

Sprints

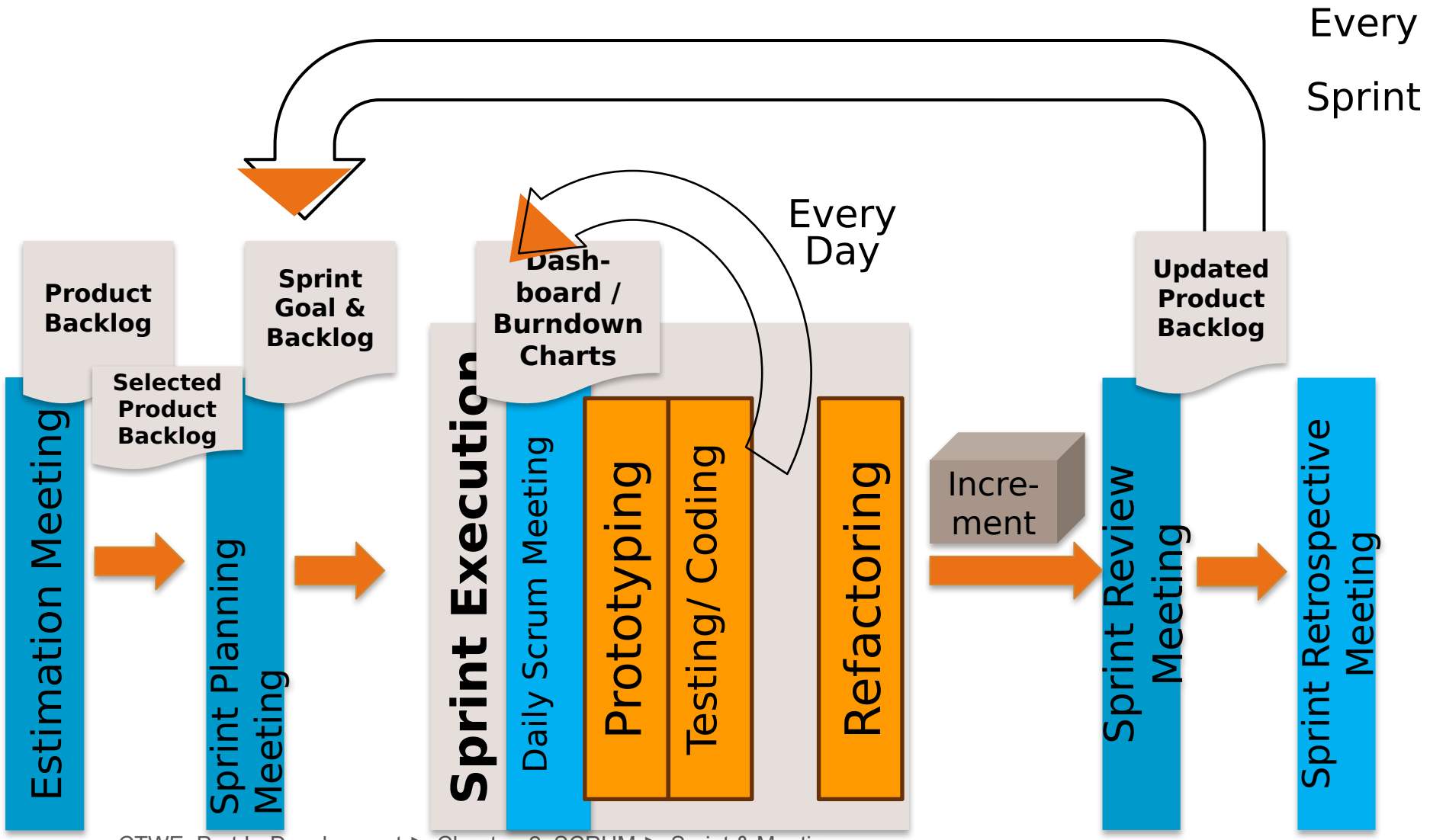
- Scrum projects make progress in a series of “sprints”
- Typical duration is 2–4 weeks or a calendar month at most
- A constant duration leads to a better rhythm
- Product is designed, coded, and tested during the sprint
- Every sprint a sprint goal should be reached – which describes the product increment

- The product gets developed sprint by sprint

No changes during a sprint

Plan sprint durations around how long you can commit to keeping change out of the sprint

Scrum 'applied' in more detail...



The Meetings

- 5 Meetings
  - Estimation / Pre Planning
    - Forming the Product Backlog
  - Sprint Planning
    - Define tasks and negotiate a commitment on Sprint Goals
  - Daily Scrum
    - Team reports to itself – daily commitment
  - Sprint Review
    - Demonstration of working software
  - Sprint Retrospective
    - Improve the process
- Other meetings
  - Design Meetings, UI workshops
  - Release Planning Meeting
    - Requirements workshops (Story writing)
    - Estimation workshops (Story estimating)

The Meetings - Timing

- A sprint is 100% of the time box.
  - 5% of 4 weeks sprint→ 1 day
  - 5% of 2 weeks sprint → ½ day
- Meetings
  - Sprint Planning (5%)
  - Daily Scrum (15 min/day)
  - Sprint Review & Sprint Retrospective (5%)
- Capacity
  - Gross Capacity:
    - #team member * net work hour / day * days
  - Net Capacity:
    - Gross Capacity – 20% Noise
      – 10% Meetings – 10% Look Ahead – 15% mission critical problems
    - Look ahead: e.g. Grooming, helping PO

The Meetings

- **Estimation / Pre Planning**
- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Estimation / Pre-Planning

- Let‘s say we have a product backlog
  - How we got there will be discussed in a later section.

- Estimation Meeting is about estimating size of Stories
  - How does the size of a story look like?
  - Example: 1 – 2, 1 – 3, 17 – 18, 230 – 247
- Why is this important?

Estimation

- Estimation also an art of scaling
  - 1 – 2, 1 – 3, 17 – 18, 230 – 247
  - Size of a backlog item compared to others
    - Several approaches like S, M, L, XL, XXL
  - Recommended Approaches:
    - Fibonacci sequence: 1, 2, 3, 5, 8, 13, 21, …
    - Planning Poker with Fibonacci-oriented sequence:
      0, ½, 1, 2, 3, 5, 8, 13, 20, 40, 100,…
      - Don‘t forget the power of poker cards
    - Affinity Estimation

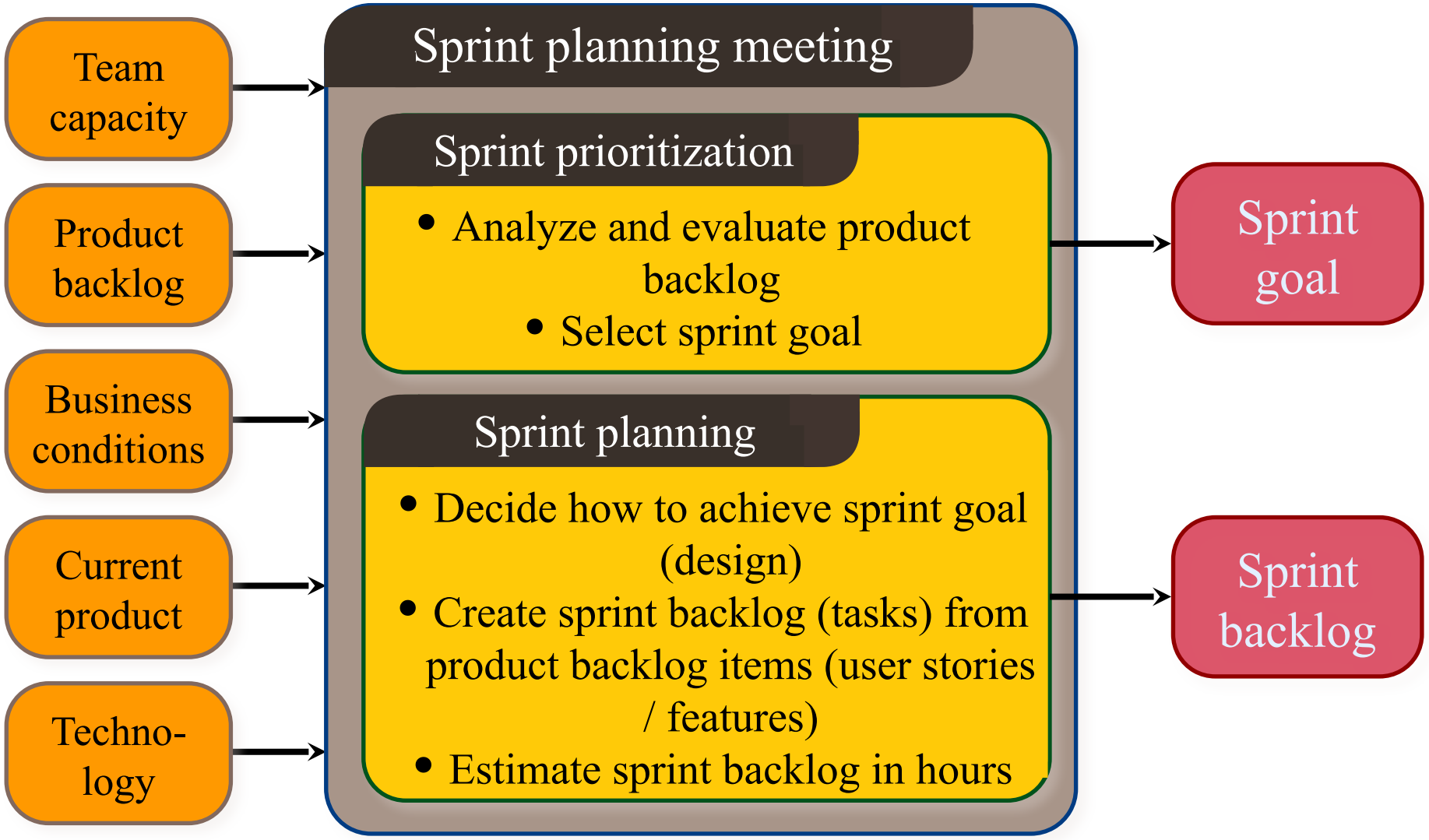
The Meetings

- Estimation / Pre Planning
- **Sprint Planning**
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Sprint Planning

- Sprint Planning is about transforming Product Backlog items (Stories) into Sprint Backlog items (Tasks)
- Before the meeting
  - The team, with the support of the product owner, estimates the product backlog items
  - The product owner prioritizes the product backlog

Sprint Planning Meeting



Slide taken from Mountain Goat LLC

Sprint Planning

- Team selects items from the product backlog they can commit to completing
  - Following the priorization of the stories
- Sprint backlog is created
  - Tasks are identified and each estimated in work units (eg ¼ days)
  - Collaboratively, not done alone by the ScrumMaster
- High-level design is considered

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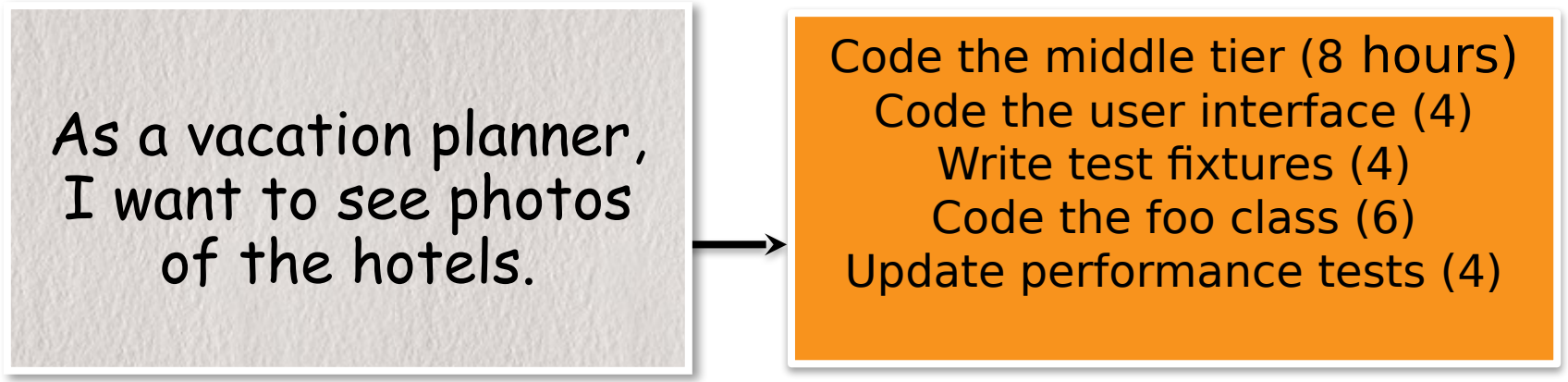

The Meetings

- Estimation / Pre Planning
- Sprint Planning
- **Daily Scrum**
- Sprint Review
- Sprint Retrospective

The daily scrum

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- Parameters
  - Daily
  - 15-minutes
  - Stand-up
- Not for problem solving
  - Whole world is invited
  - Only team members, ScrumMaster, product owner, allowed to talk (i.e. only pigs allowed to talk – not chicken)
- Helps avoid other unnecessary meetings

Everyone answers 3 questions

- These are not status for the ScrumMaster
  - They are commitments in front of peers

1. What did you do yesterday?
2. What will you do today?
3. Is anything in your way?

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The Meetings

- Estimation / Pre Planning
- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

The sprint review

- Team presents what it accomplished during the sprint
- Typically takes the form of a demo of new features or underlying architecture
- PO decides on Done

  (has to be defined by Scrum Team)

  Good practice: "Definition of Done"
- Whole team participates
- Invite the world

The Meetings

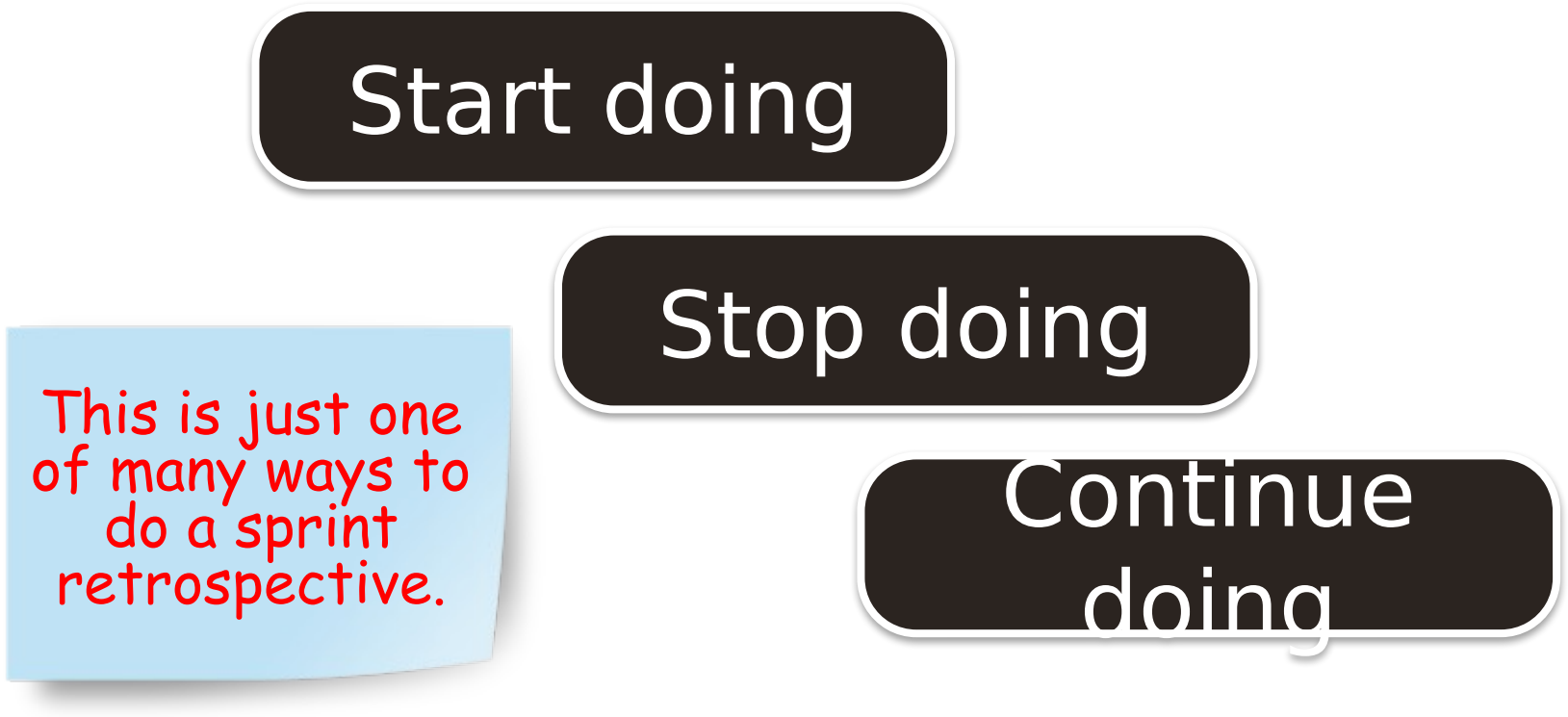
- Estimation / Pre Planning
- Sprint Planning
- Daily Scrum
- Sprint Review
- **Sprint Retrospective**

Sprint retrospective

- Periodically take a look at what is and is not working
- Typically 15–30 minutes
- Done after every sprint
- Whole team participates
  - ScrumMaster
  - Product owner
  - Team
  - Possibly customers and others

Start / Stop / Continue

- Whole team gathers and discusses what they'd like to:



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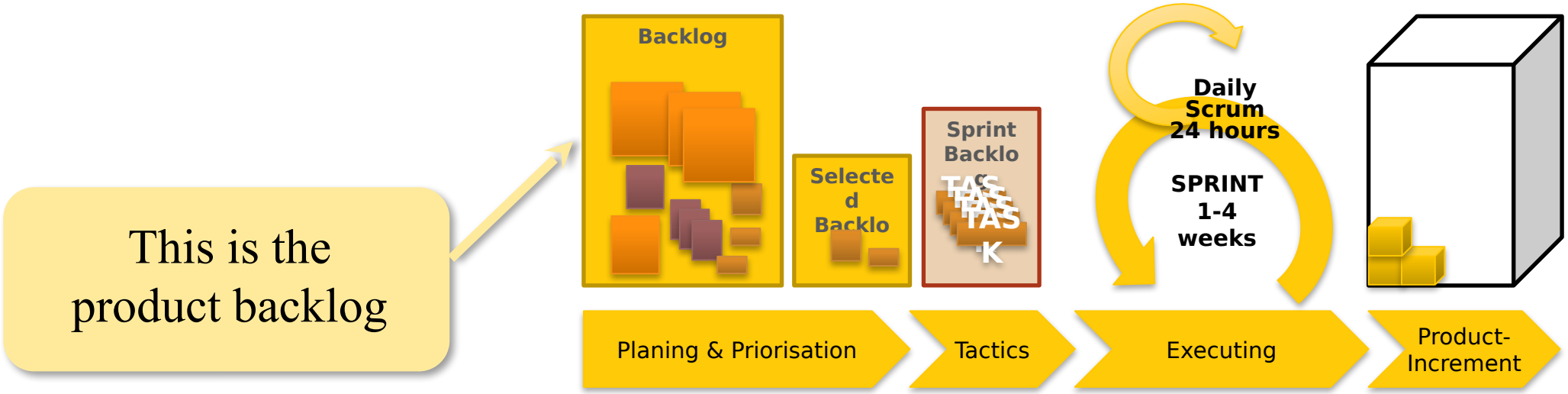
Section://4

Scrum Artifacts

Product backlog

- The requirements
- A list of all desired work on the project
- Ideally expressed such that each item has value to the users or customers of the product
- Prioritized by the product owner
- Reprioritized at the start of each sprint



A sample product backlog

Backlog item	Estimate
Allow a guest to make a reservation	3
As a guest, I want to cancel a reservation.	5
As a guest, I want to change the dates of a reservation.	3
As a hotel employee, I can run RevPAR reports (revenue-per-available-room)	8
Improve exception handling	8
…	30
…	50

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The sprint goal

- A short statement of what the work will be focused on during the sprint

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Life Sciences

Support features necessary for population genetics studies.

Database Application

Make the application run on SQL Server in addition to Oracle.

Financial services

Support more technical indicators than company ABC with real-time, streaming data.

Managing the sprint backlog

- Individuals sign up for work of their own choosing
  - Work is never assigned
- Estimated work remaining is updated daily
- Any team member can add, delete or change the sprint backlog
- Work for the sprint emerges
- If work is unclear, define a sprint backlog item with a larger amount of time and break it down later
- Update work remaining as more becomes known

Story/Task – Dashboard Example

1. Storie
2. Tasks
3. In Progress
4. To Verify
5. Done

A sprint backlog

Tasks	Mon	Tues	Wed	Thur	Fri
Code the user interface	8	4	8		
Code the middle tier	16	12	10	4	
Test the middle tier	8	16	16	11	8
Write online help	12				
Write the foo class	8	8	8	8	8
Add error logging			8	4	

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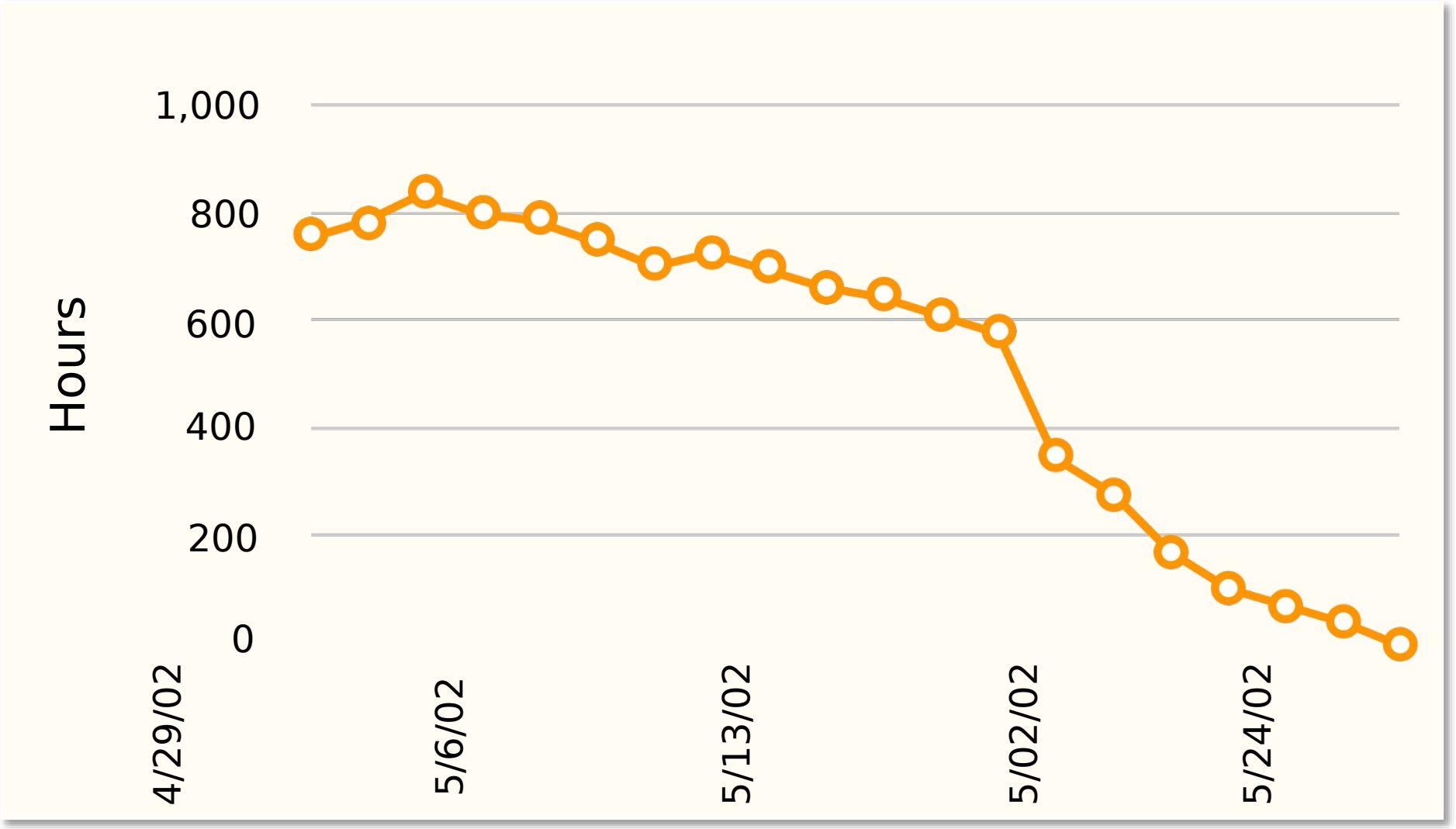
A sprint burndown chart



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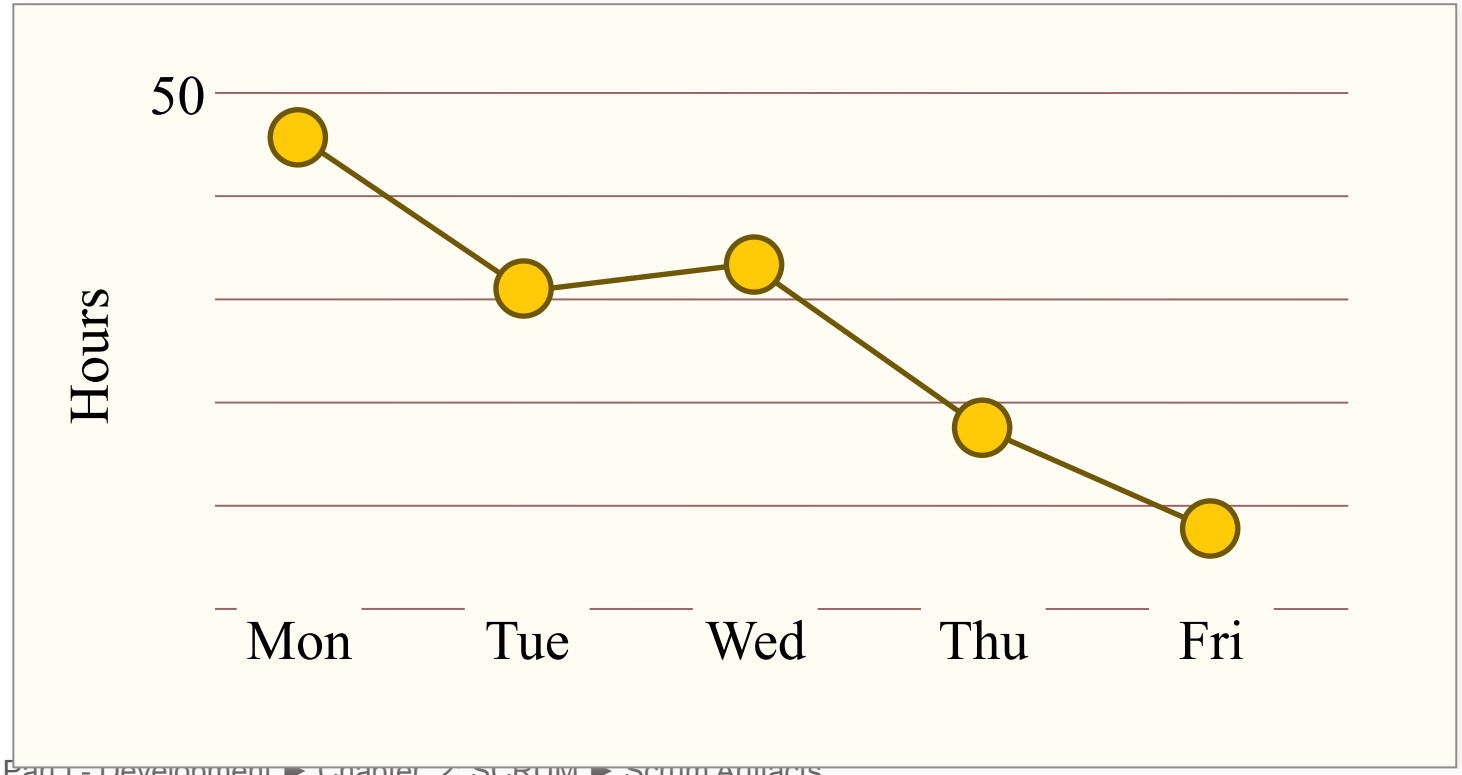

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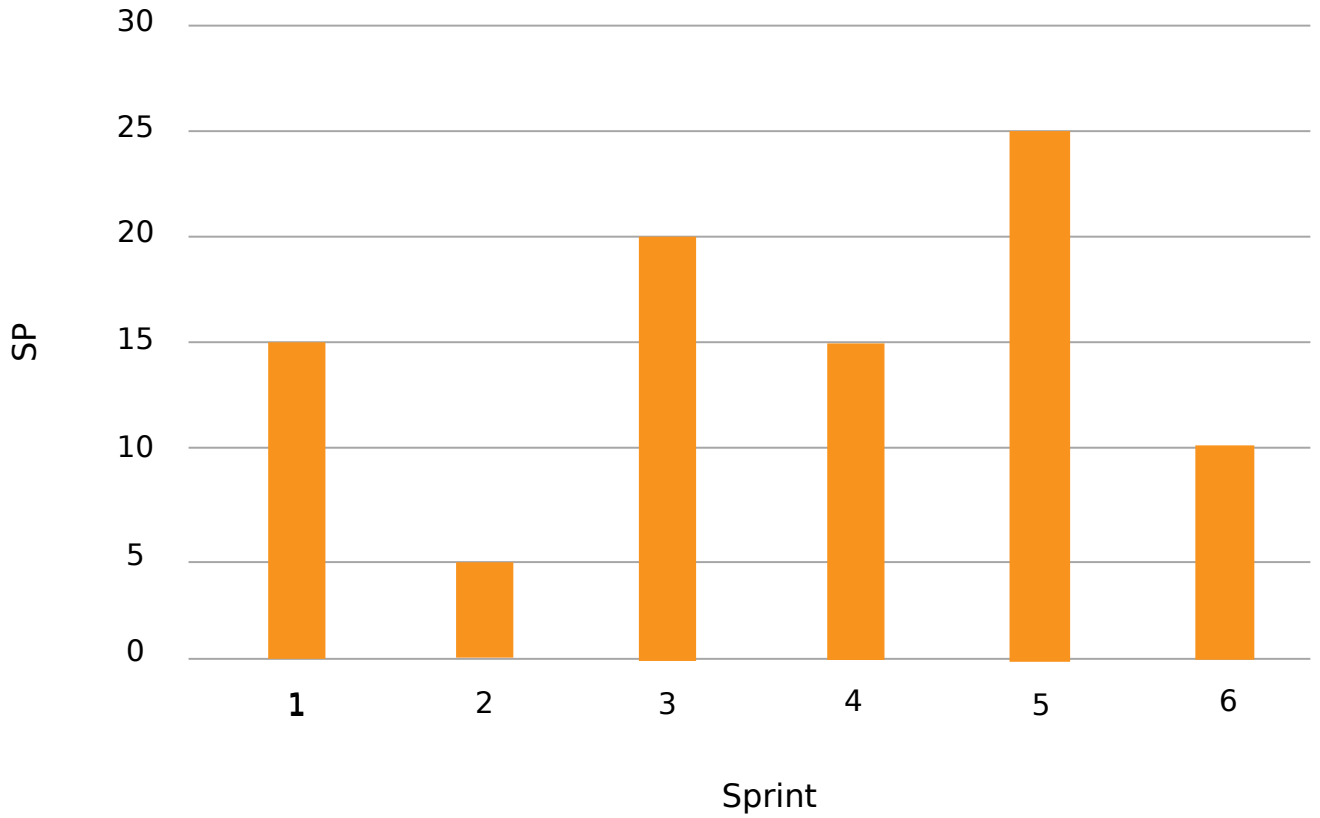
Velocity

The following figure shows the amount of story points a Scrum team achieved in the fist 6 sprints

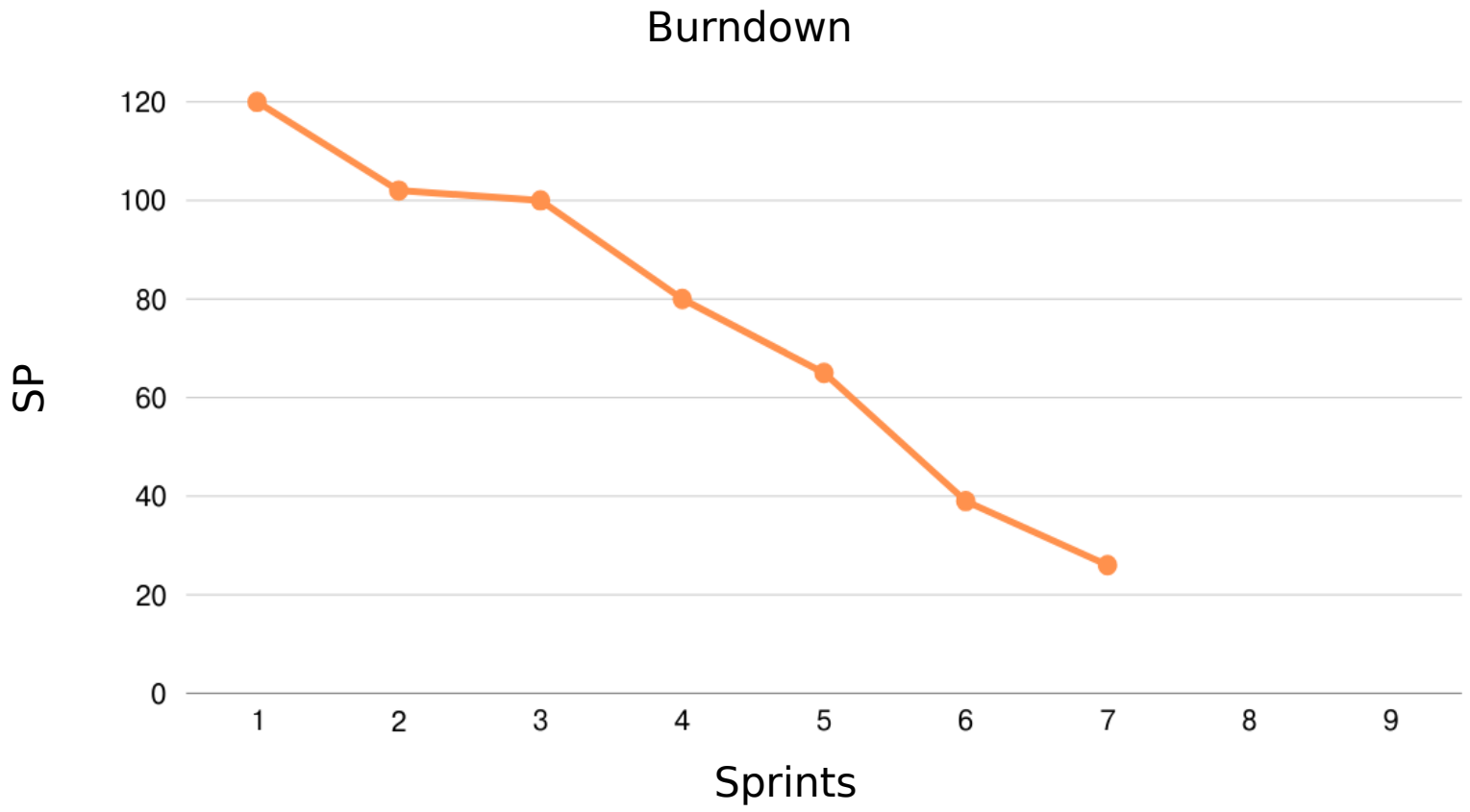


Calculate the velocity.

Burndown Chart

The Product Backlog contains items worth of 30 SP

Draw a product burndown chart for this project.



Feedback

Your anonymous feedback on today‘s VSR session:

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