Agile & Scrum

(I don't know what Agile is,
and at this point I'm too afraid to ask)

Frontend Junior Program - 2022

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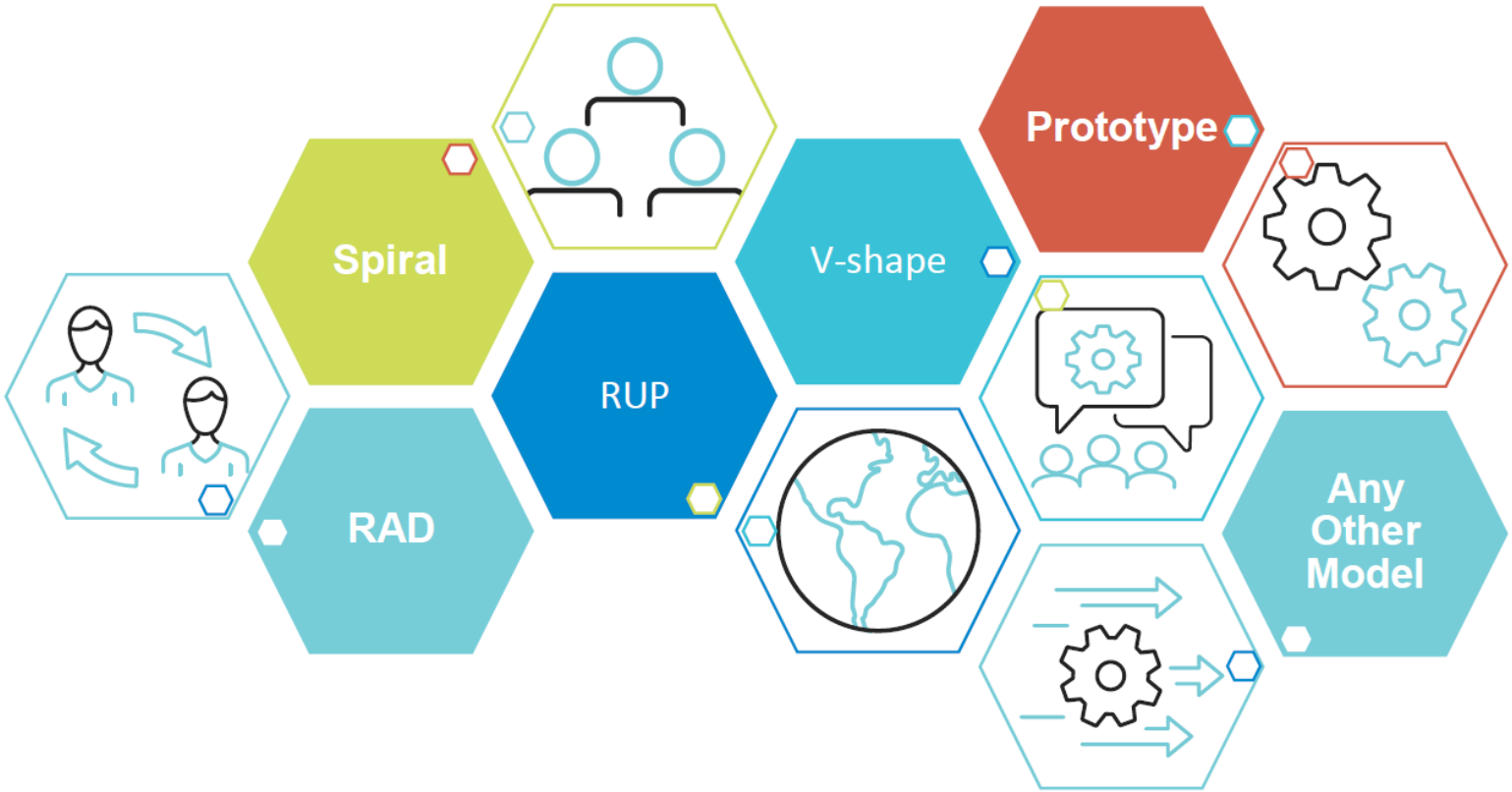
Agenda

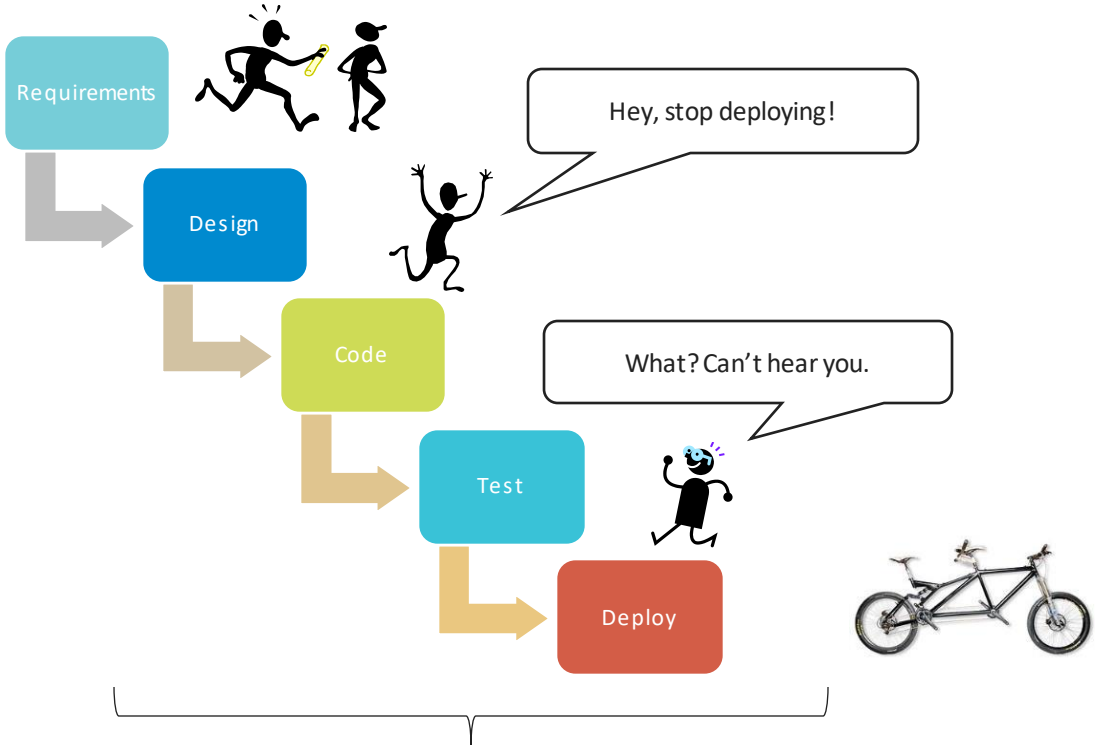
1. SDLC
2. Agile
3. Scrum

MODELS

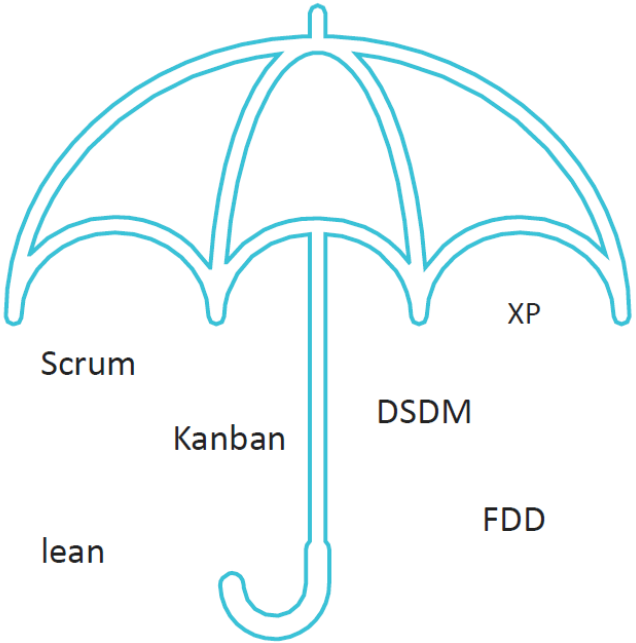
Software Development Lifecycle Models



Traditional Project



Agile



Manifesto for Agile Software Development

We are uncovering better ways of developing
software by doing it and helping others do it.
Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on
the right, we value the items on the left more.

Kent Beck	James Grenning	Robert C. Martin
Mike Beedle	Jim Highsmith	Steve Mellor
Arie van Bennekum	Andrew Hunt	Ken Schwaber
Alistair Cockburn	Ron Jeffries	Jeff Sutherland
Ward Cunningham	Jon Kern	Dave Thomas
Martin Fowler	Brian Marick	

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Manifesto for Agile Software Development

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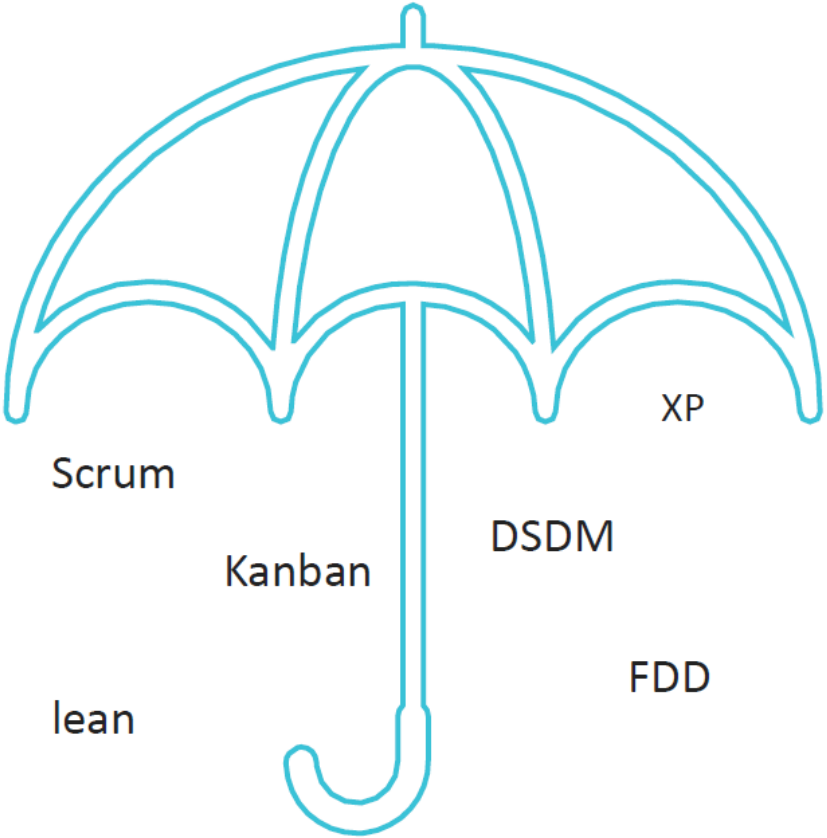
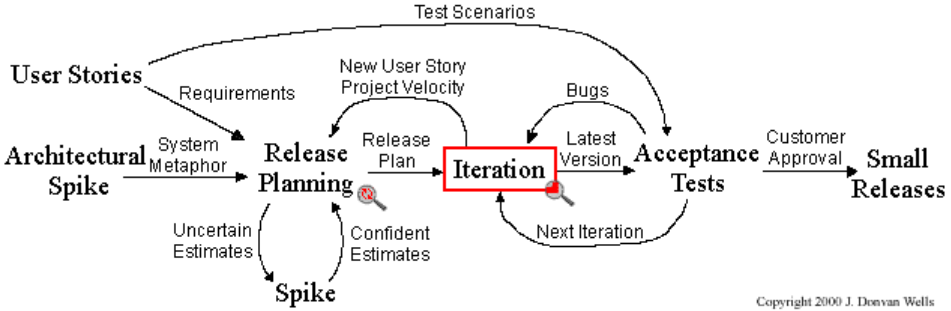
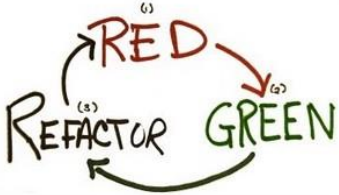
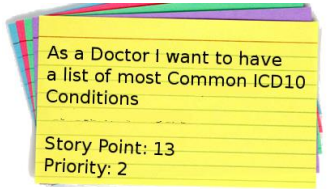


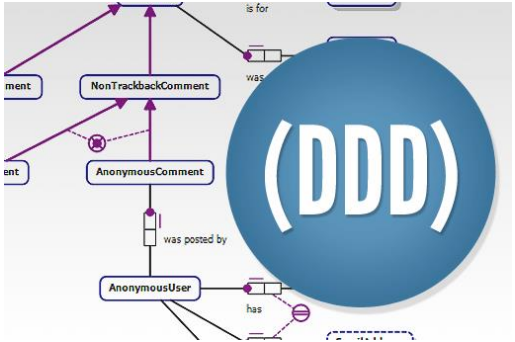
Agile: Practices

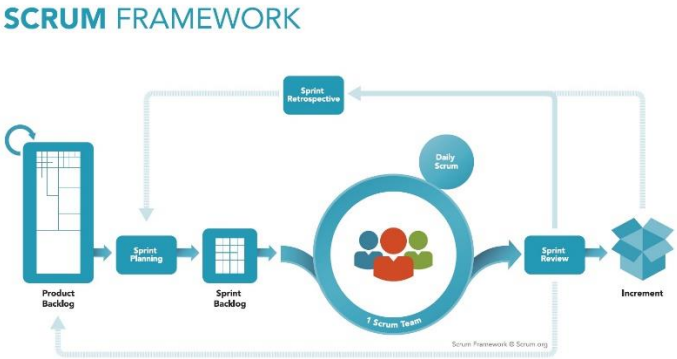
Extreme Programming Project











SCRUM

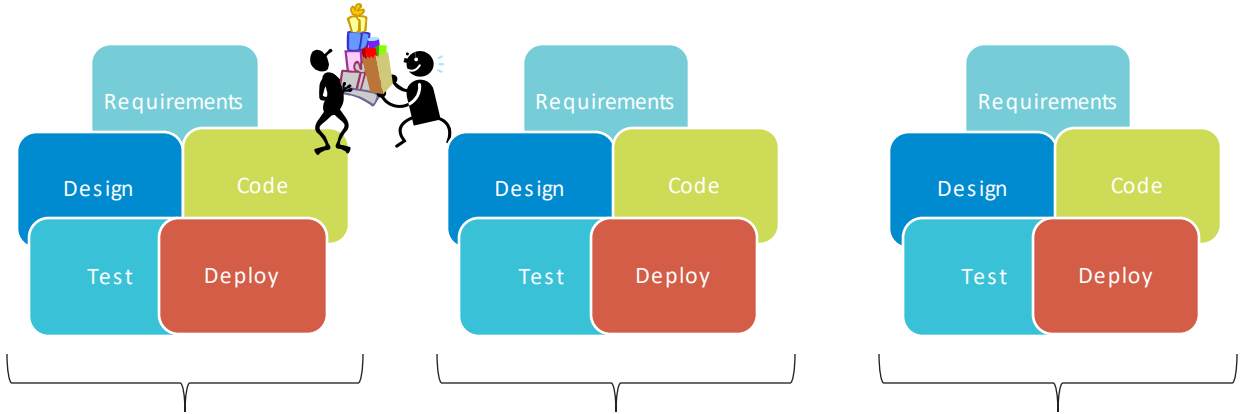
So, what is Scrum?

Scrum is an **agile** process that allows us to focus on delivering the **highest business value** in **the shortest time**

The **business sets the priorities**. **Teams self-organize** to determine the best way to deliver the highest priority features

Every week to a month anyone can see **real working software** and decide to release it as is or continue to enhance it

Scrum Sprints



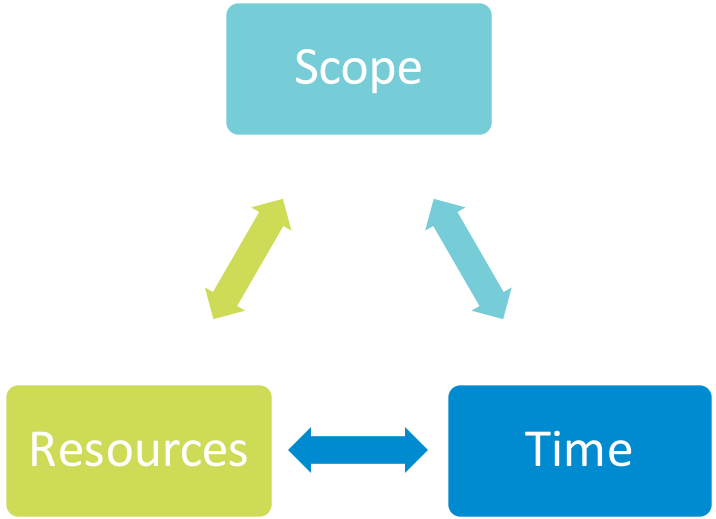
Two weeks

Two weeks

Two weeks

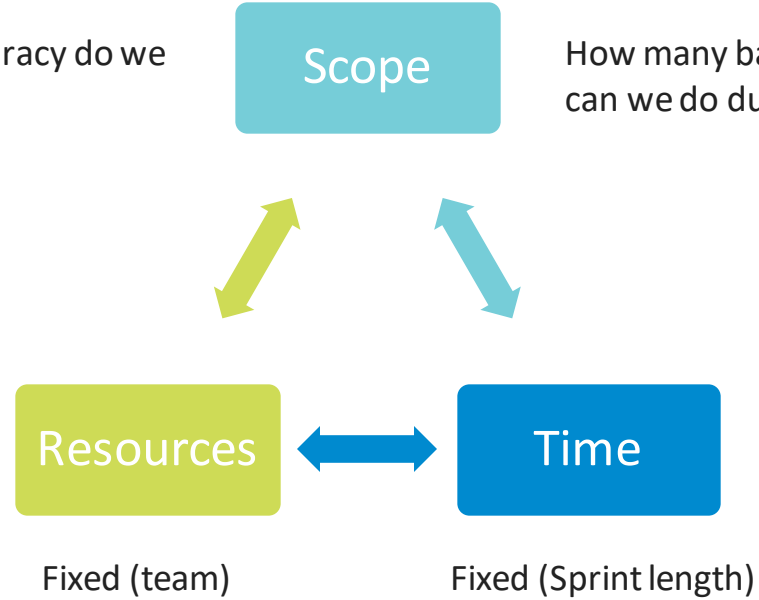
Sprints

- Scrum development makes progress in a series of iterations (called “sprints”).
- Constant duration, 1–4 weeks.
- Product is designed, coded, tested and documented during the sprint.
- No changes during sprint!



Iron triangle

What level of accuracy do we need?



How many backlog items (stories) can we do during the sprint?

PO adds more work

- Better to **lock** the Sprint scope for new stories!
- Create new stories for new sprint if a lot of details were discovered.
- Change priorities only if team is comfortable.

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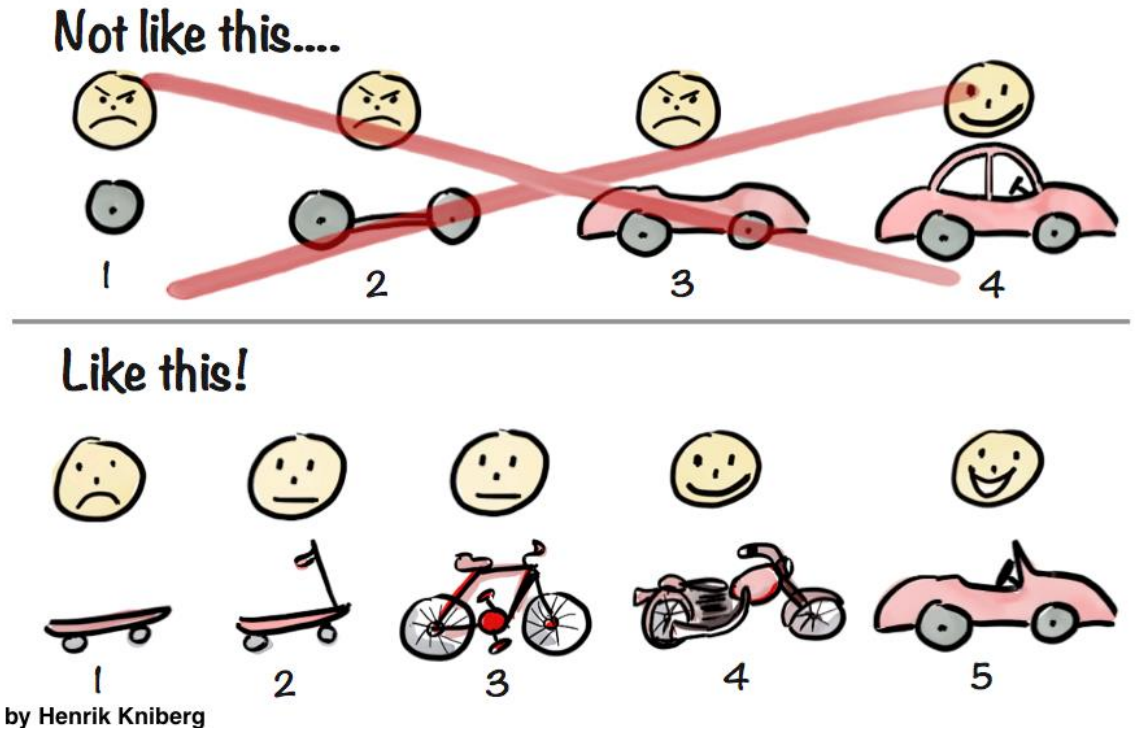
Scrum is not a mini-waterfall



Cancelling the Sprint

Sprints may be cancelled early, i.e., before the time-box expires.

Only by the Product Owner

Prefer adjusting Sprint Scope

A Sprint would be cancelled if the Sprint Goal becomes obsolete

• Reasons to cancel may include changes in competition, business, or technology feasibility.

After a Sprint cancellation, re-plan the Sprint.

SCRUM FRAMEWORK

Scrum Framework

Scrum Team

- Product Owner
- Scrum Team
- Scrum Master

Meetings

- Sprint Planning
- Sprint Review
- Sprint Retrospective
- Daily Scrum
- Backlog Refinement

Artifacts

- Product and sprint backlogs
- Burn-down charts
- Scrum Board
- Product increment

SCRUM ROLES

Product Owner

- Responsible for the profitability of the product (ROI)
- Defines the features of the product
- Decides on release date and content
- Prioritizes features according to market value
- Has the vision of the product
- Accepts or rejects work results

Development Team

- Cross-functional **self-managing** group up to **10**
- Attempts to build a “potentially shippable increment” each Sprint
- Members should be full-time (may be exceptions, e.g., DBA)
- Ideally, no titles but rarely a possibility
- Membership should change only between sprints

Scrum Master

- Responsible for enacting Scrum values and practices
- Removes impediments
- Ensures that the team is fully functional and productive
- Enables close cooperation across all roles and functions
- Not manager, but shields the team from external interferences

SCRUM ARTIFACTS

Product Backlog

Product Backlog Item

Product Backlog Item

Product Backlog Item

Product Backlog Item

Product Backlog Item

Product Backlog Item

Product Backlog Item

High-priority

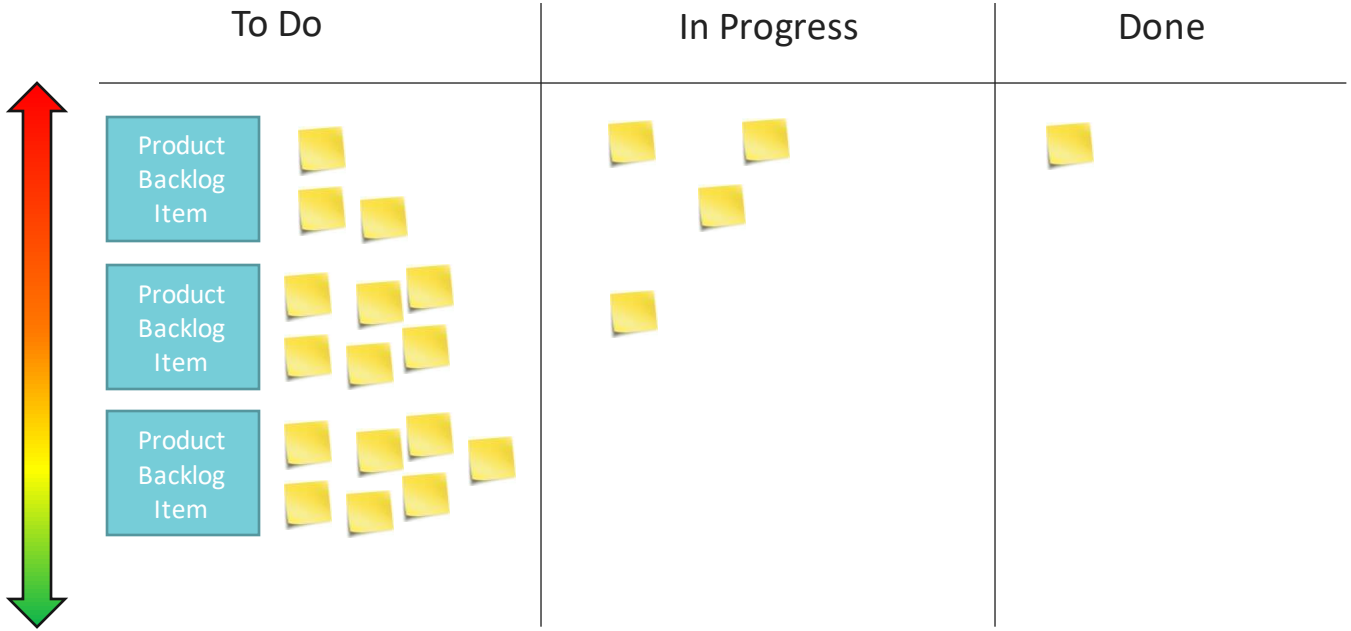
Low-priority

Sprint Backlog

- The set of PBI selected for the Sprint
- Plan for delivering the product Increment
- Makes visible all of the work for the Sprint

ToDo List		
Story	**Estimation**	**Priority**
As a user I want to be able to reset my password	1	1
As a user I want to edit items	3	2
As a user I want to export data	2	3
As an administrator I want to define KPI's for my sales team	4	4
As a user I want to view my data on mobile	5	5
As an administrator I want to send alerts when new leads come in	2	6
As a user I want to create a report of my data	5	7
As a user I want to update my reminder settings when a date is added	3	8
As a user I want filtering enhancements	4	9
As an administrator I want to configure views of data	5	10
Total	**34**	

Scrum Task Board



To do
7 Items | 13 Points

- Due Date implementation — 0.3
- Sidebar design — Design — 3
- Monetization suggestions — 1
- App Store - Submit iOS App — 0.5
- Login via Google+ — 5
- Upgrade vue-loader — 2
- Google Play store - Submit the App — 2

In progress
3 Items | 3 Points

- List view of the Sprint Backlog — 1
- Files page - add thumbnail view — 1
- Assign a User to the checklist Item — 1

Code Review
6 Items | 21 Points

- Landing page images — Design — 0.3
- `Load more` button — another one, CSS, new label — 0.5
- List view https://app.vivifyscrum.com/boards/
  Columns:
  - Item Title
  - Type
  - ROI
  - Parent/Subitems #VPMB-12

  — 0.2
- https://www.vivifyscrum.com/news — 1
- Comment section does not update in Opera — 0.5
- Planning poker improvement — 1

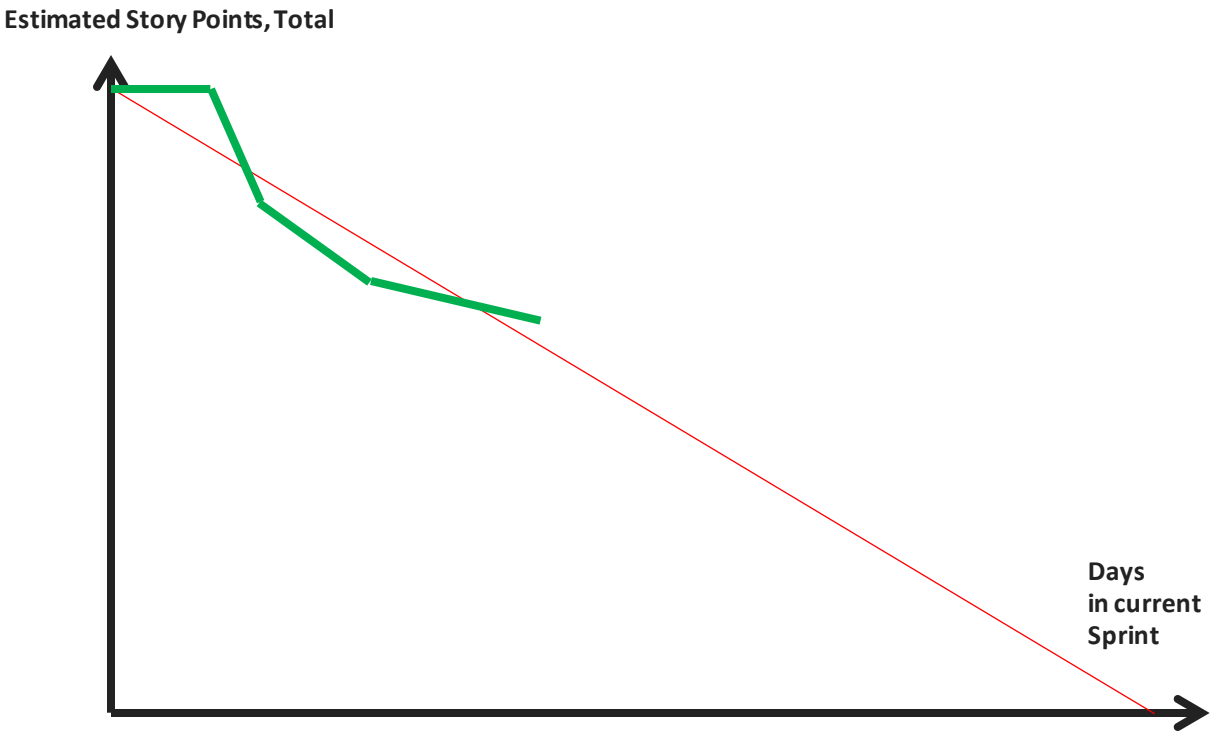
Done
6 Items | 25 Points

- Edit `Load more` button — CSS, Style changes — 4
- Marking columns as Done on a Kanban Board — 10
- Checklist tooltip and position — 1
- Checklist implementation — 0.2
- In-app UX improvements — 0.3
- Labels bug — 0.5

Production
0 Items | 0 Points

Drag Items here or click on + to create a new Item.

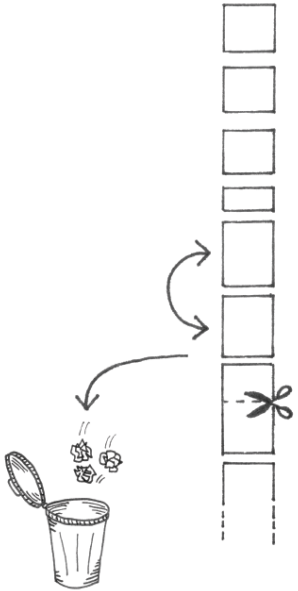
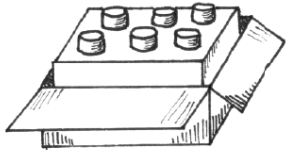
Burndown Chart



Increment

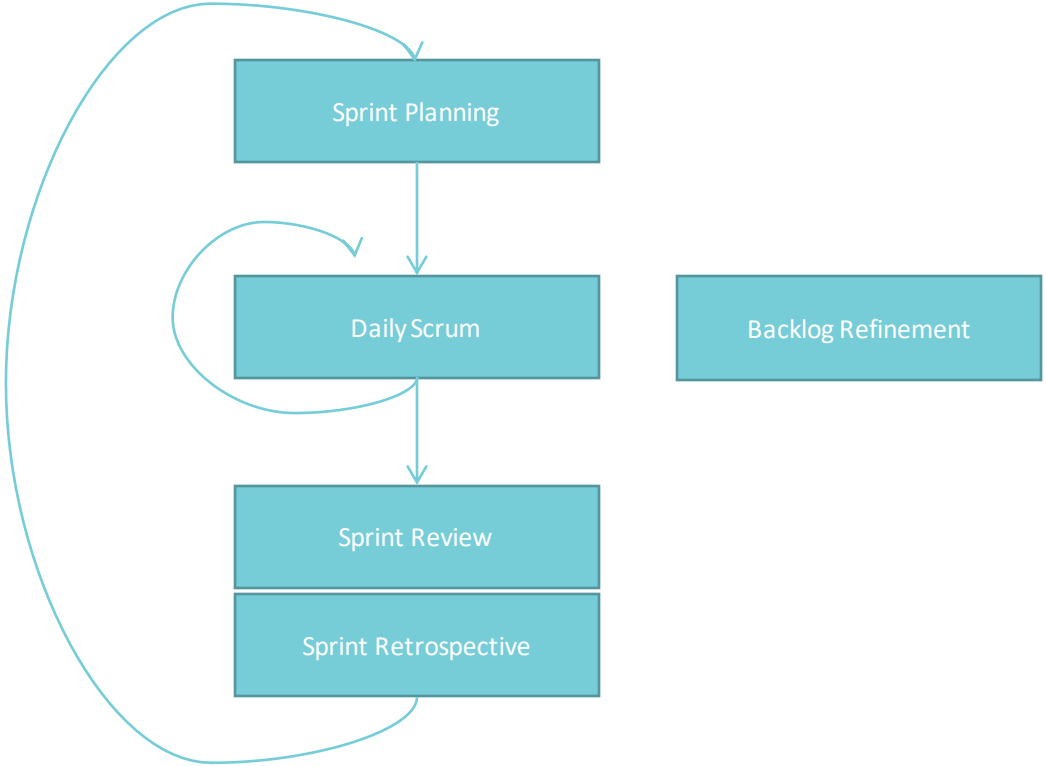
- The Increment is the sum of all PBIs completed during a Sprint and value of the increments of all previous Sprints.
- At the end of a Sprint, the new Increment must be “Done”
- Definition of Done document is used to create increment

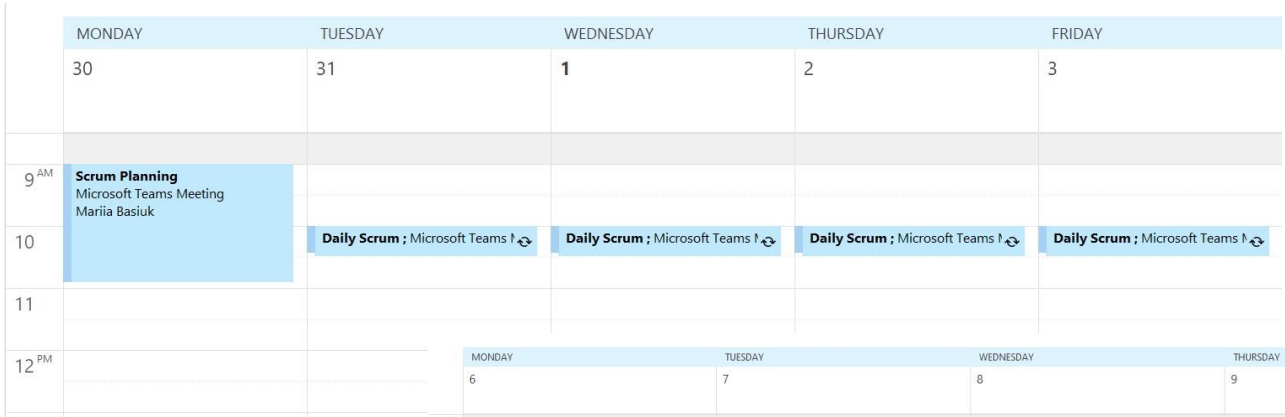
Commitments

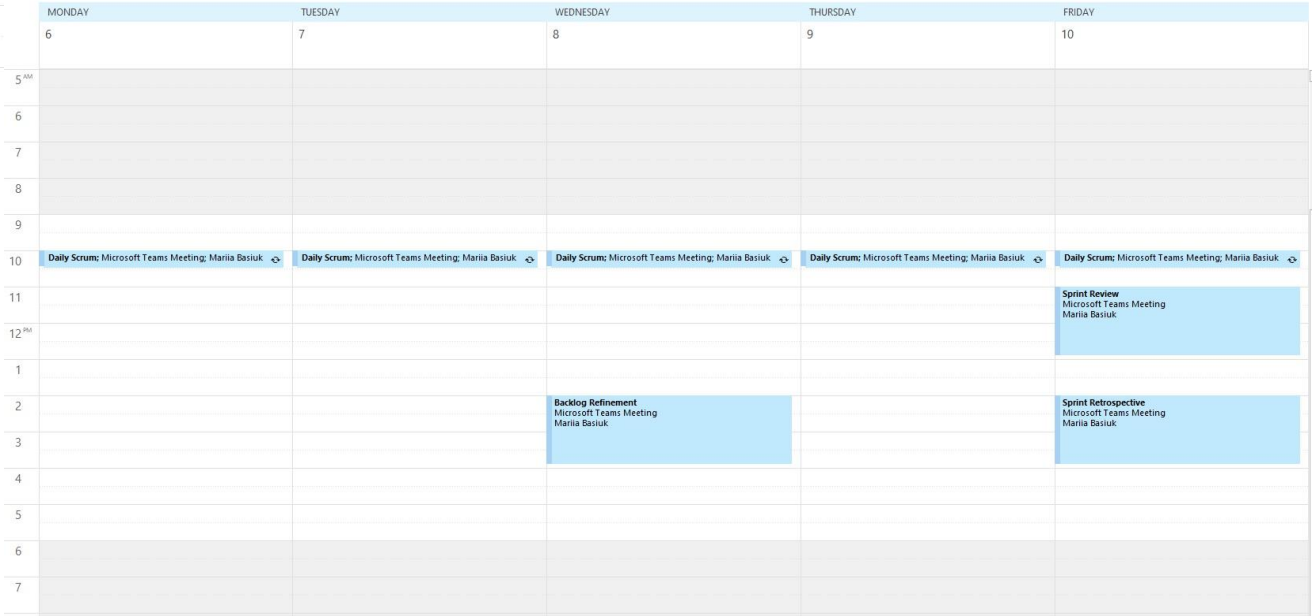
PRODUCT GOAL	SPRINT GOAL	DEFINITION OF DONE
PRODUCT BACKLOG 	SPRINT BACKLOG	INCREMENT 

SCRUM MEETINGS

Sprint Meetings







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Sprint Planning

Product Backlog

- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
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- Product Backlog Item
- Product Backlog Item

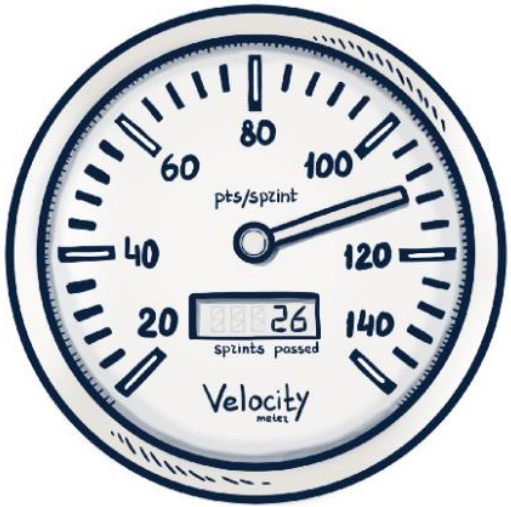
Sprint Backlog

- Product Backlog Item
- Product Backlog Item
- Product Backlog Item

Capacity and Velocity

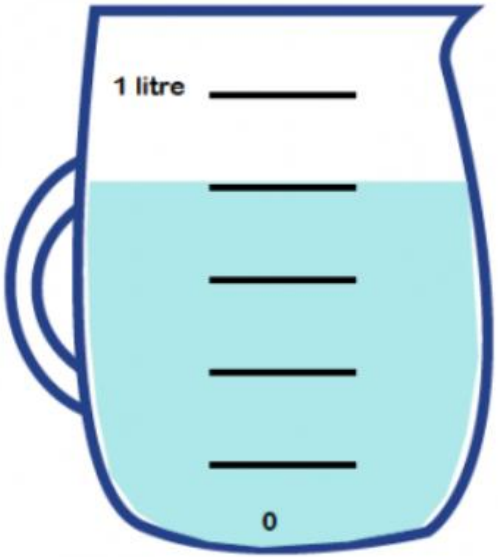
- **Velocity** – number of story point completed during previous sprint

Experience

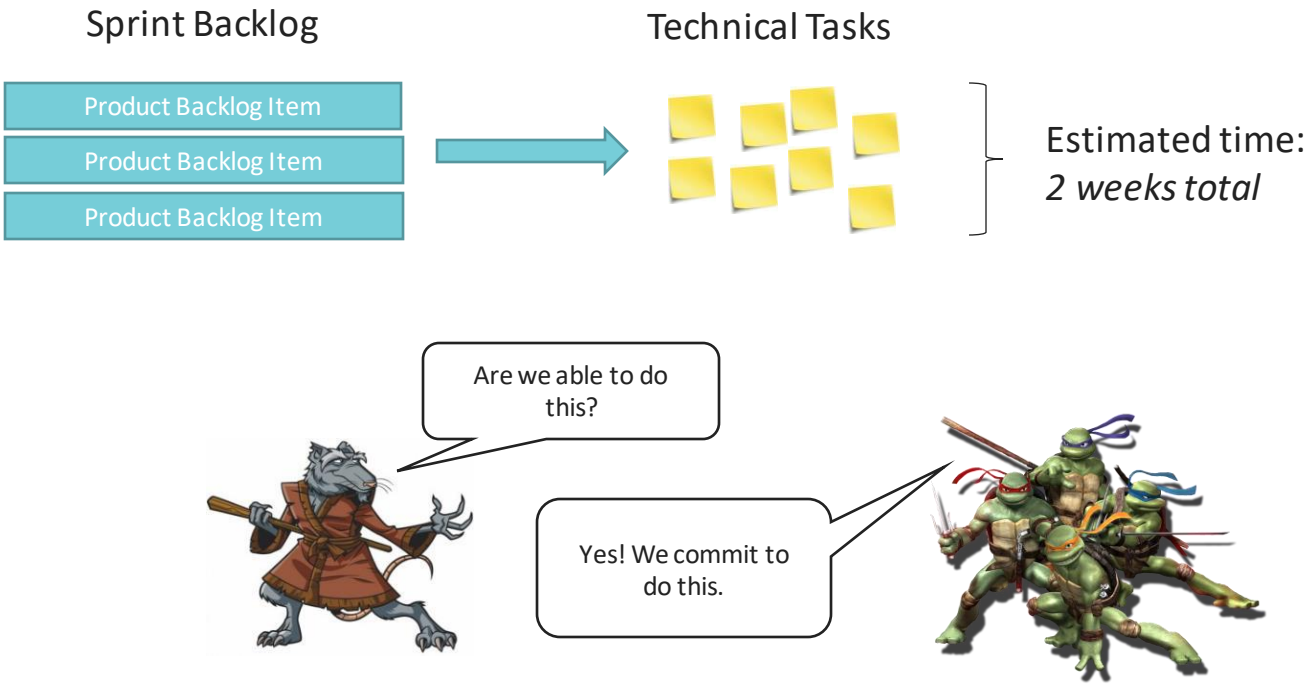


- **Capacity** – number of ideal hours available during next sprint

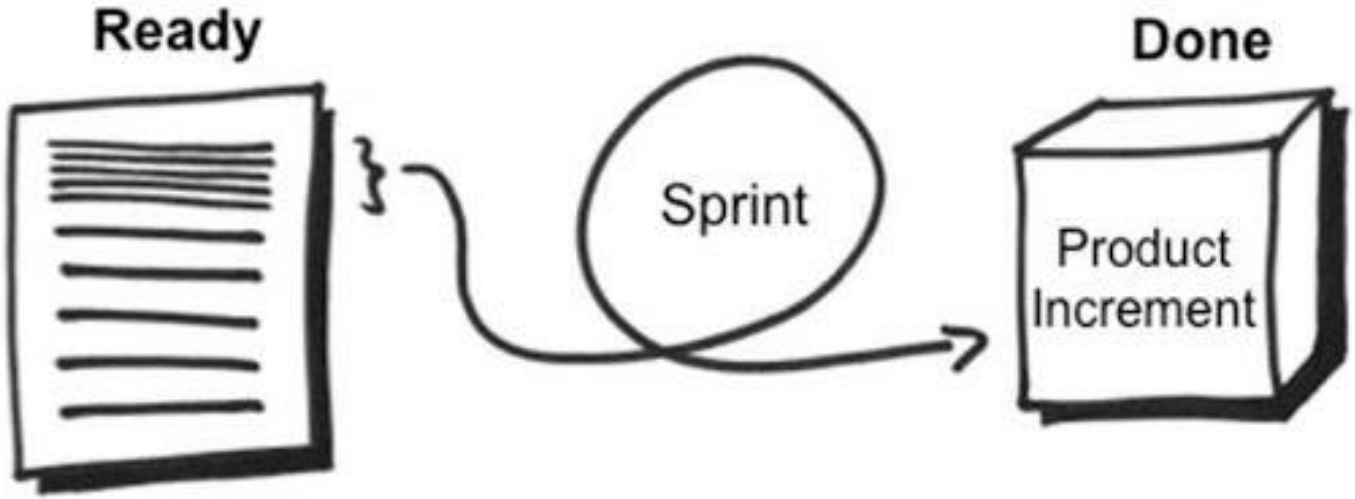
Forecast



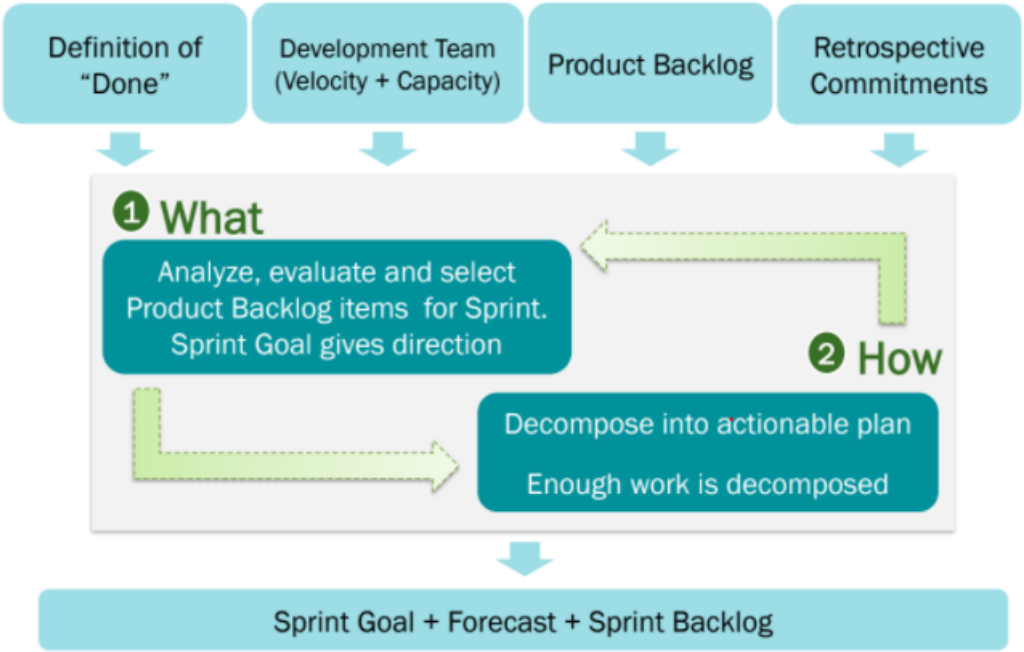
Sprint Planning



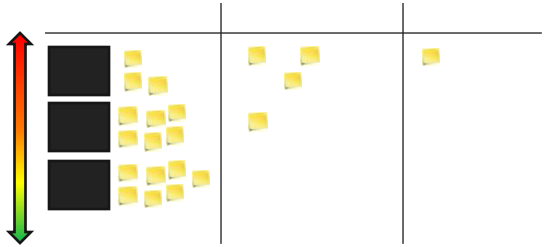
Definition of ready and Definition of done

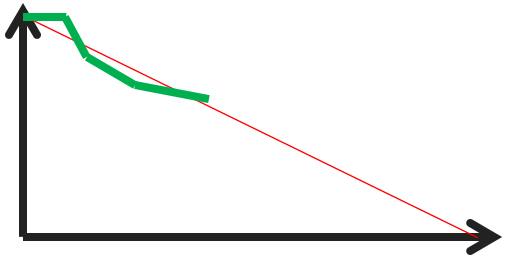


Sprint Planning flow

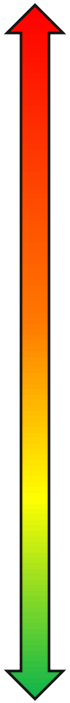


Daily Scrum Meeting





Backlog Refinement



Product Backlog

- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item

Sprint Review

Product Backlog Item

Product Backlog Item

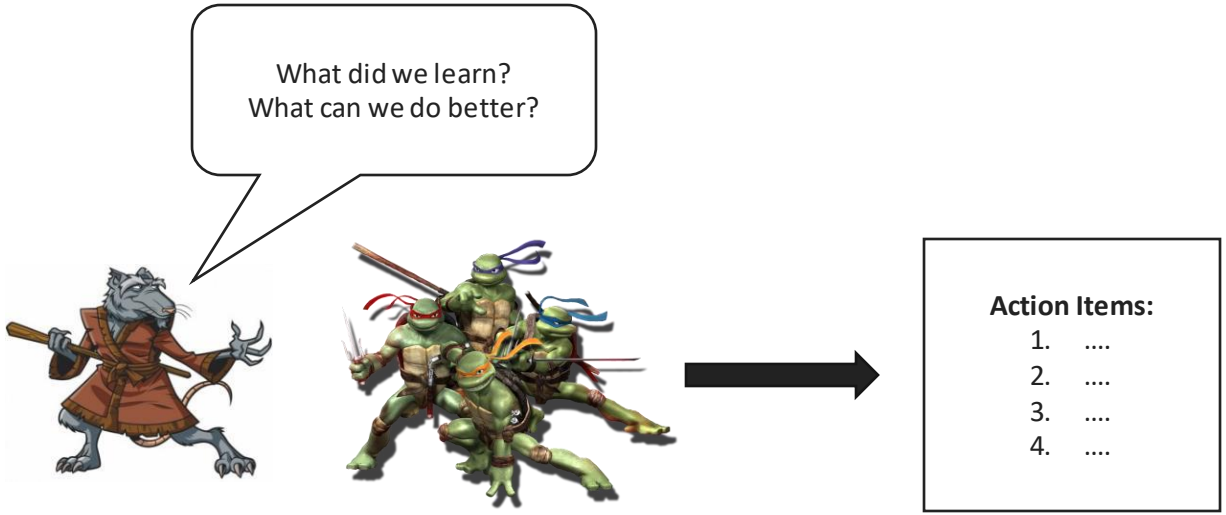
Product Backlog Item

Product Backlog Item

Backlog Item (Not Done)

Backlog Item (Not Done)

Sprint Retrospective

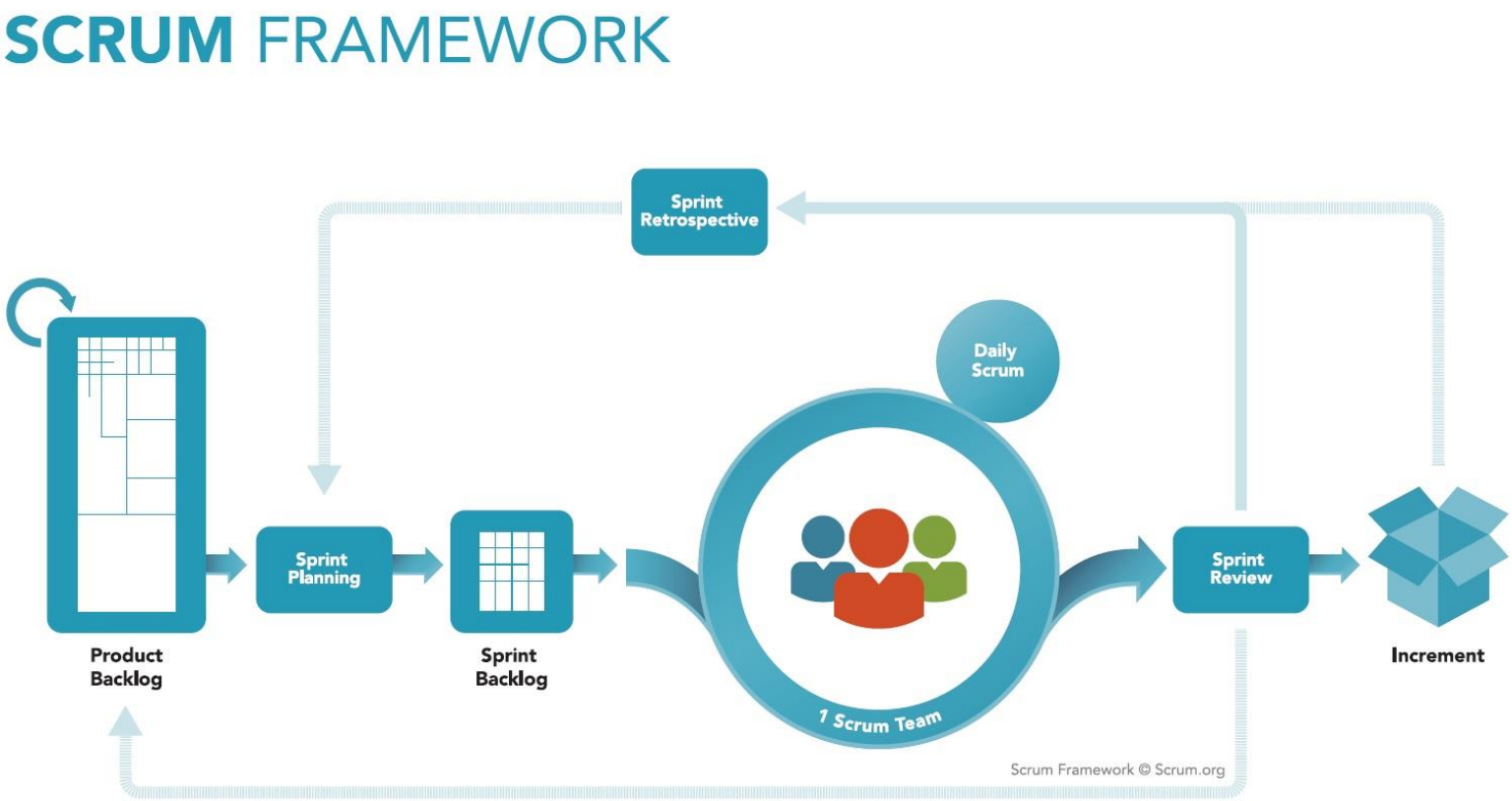


Scrum Events Quick Reference

Event	Inspection	Adaptation	Who Attends	Time-box for 1 Month
Sprint Planning	Product Backlog	Sprint Goal, Forecast, Sprint Backlog	Scrum Team	8 hours
Daily Scrum	Progress toward Sprint Goal	Sprint Backlog	Development Team	15 minutes (always)
Sprint Review	Increment, Sprint, Product Backlog	Product Backlog	Scrum Team Stakeholders	4 hours
Sprint Retrospective	Sprint	Actionable and committed improvements	Scrum Team	3 hours

Every element of Scrum serves empiricism.

Helicopter View for Scrum



AGILE AND REQUIREMENTS

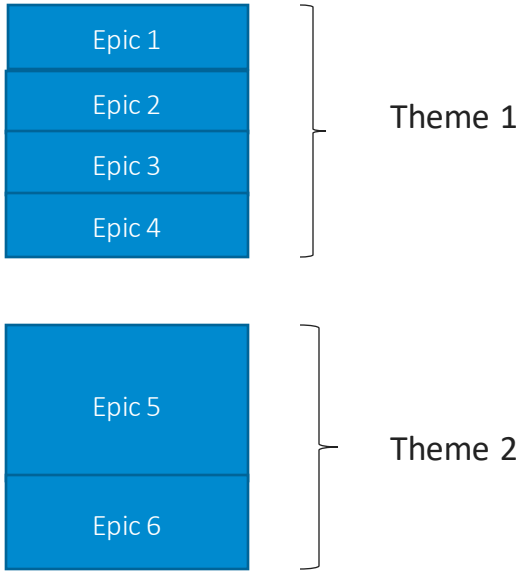
Product Vision

Vision Statement	Phrase or sentence to summarise the vision		
Target group	Needs	Product	Value $
Which market segment does the product address? Who are its target customers and users?	Which needs does the product fulfil and how does it create value for its customers and users? Which emotions does it evoke?	What are the three to five top features that are crucial for the success of the product? What will the product roughly look like? What are its unique selling points?	How is the product going to benefit the company? For instance, what are its revenue sources? What is the cost structure? Which sales channels will be used? Will it save cost?

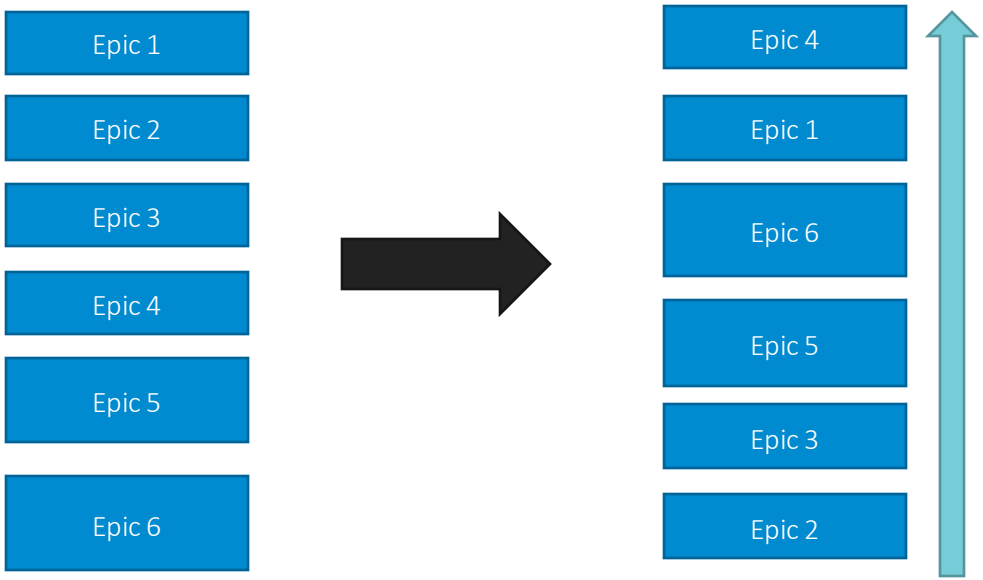
Task, User Story, Epic, Theme

<table>
<tr><th colspan="5">Theme
Increase Website Traffic</th></tr>
<tr><td colspan="2">Epic
Add new Video Section</td><td colspan="3">Epic
Improve Login Page Usability</td></tr>
<tr><td>User Story</td><td>User Story</td><td colspan="2">User Story
As a User,
I want to have the validation on the login page,
So that I can easily see when/if I make a mistake</td><td>User Story</td></tr>
<tr><td>Sub-task</td><td>Sub-task</td><td>Sub-task</td><td>Sub-task</td><td>Sub-task</td></tr>
</table>

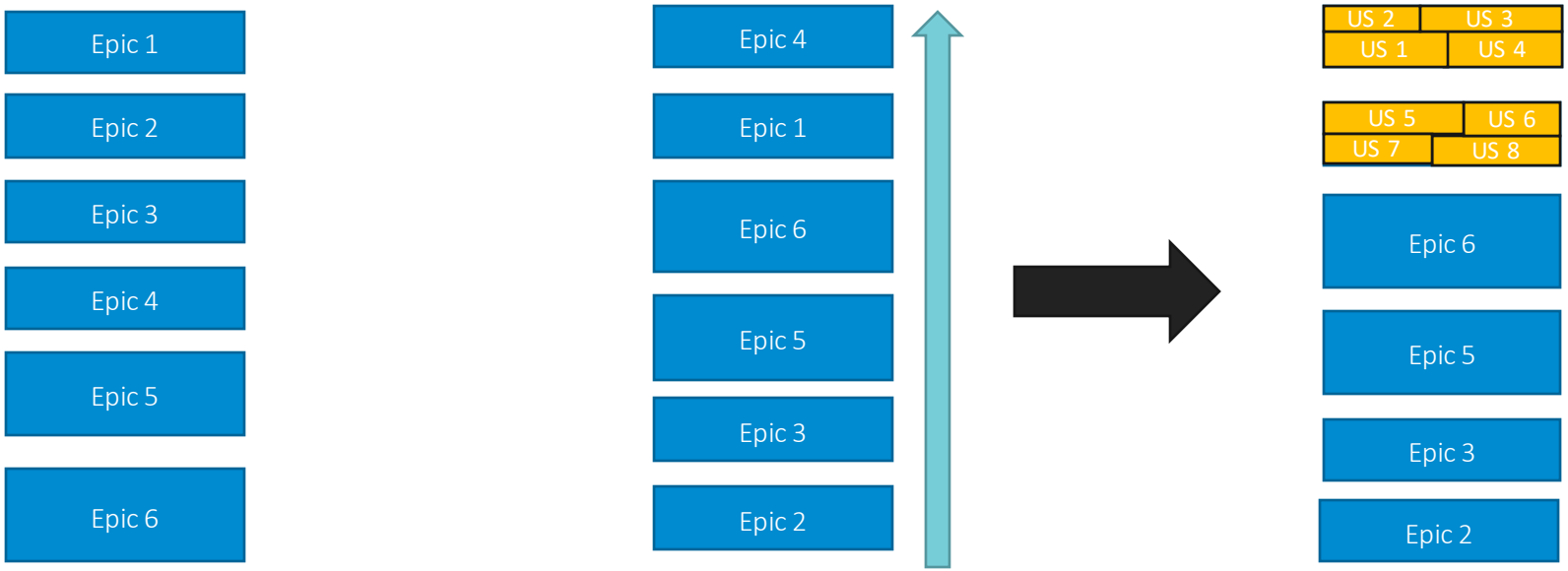
Start with Themes and Epics



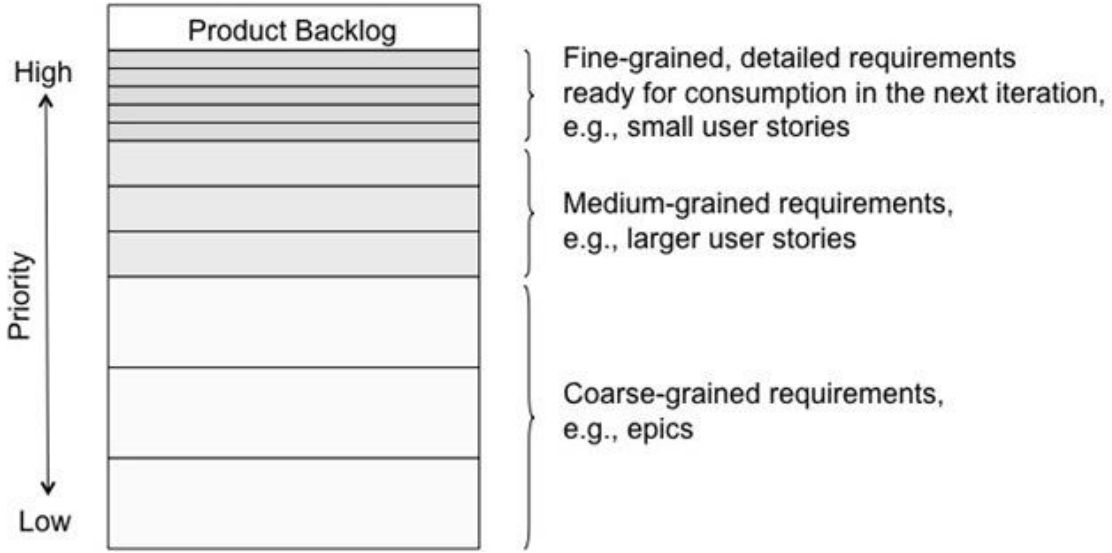
Slice the cake

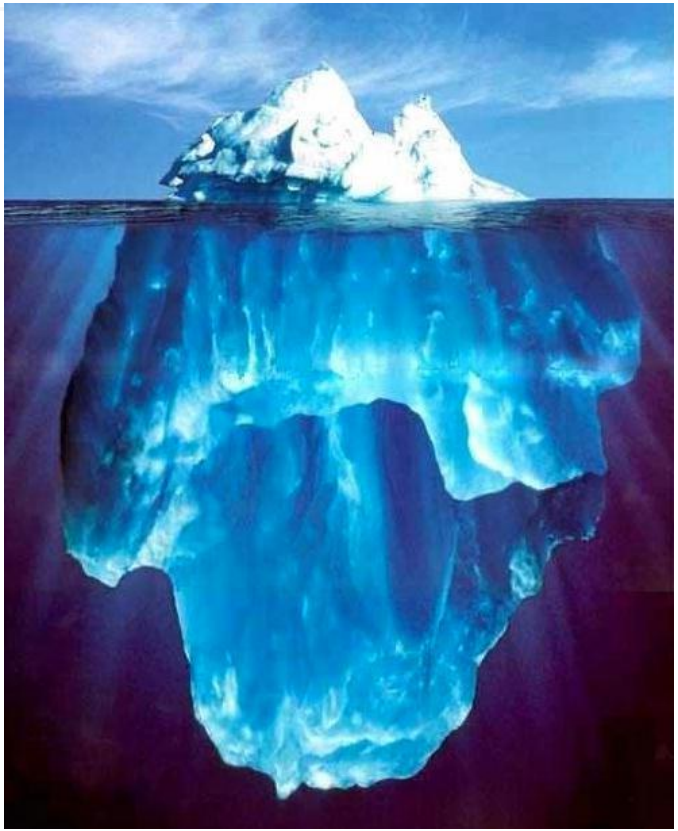


Slice the cake



Backlog


Product Backlog
High
Priority
Low
Fine-grained, detailed requirements ready for consumption in the next iteration, e.g., small user stories
Medium-grained requirements, e.g., larger user stories
Coarse-grained requirements, e.g., epics



User Stories

…a piece of functionality valuable for the end-user.

Card

Conversation

Confirmation

User story: Card

A written description of the user story for planning purposes and as a reminder, starting point for discussion.

Card

As a [user role] I want [activity] so I can [benefit]

As a [user role] I can [activity] so that [benefit]

User role – who (new user, guest, job-seeker)?

Activity – functionality, action of the system, what?

Benefit – value for the end-user, why?

User Story Card examples

- **As a** recruiter **I want** to search by job-seeker's name **so** I can find all resumes of job-seeker
- **As a** recruiter **I want** to search resumes by job-seeker's name
- Search resume by job-seeker's name
- Search resume
- Search

Non-estimable uncertain stories

- **Spike** is an experiment to gain knowledge so that developers can estimate the story.
- Research, prototype, implementing some code or any other way to drive down the uncertainty to be able to estimate the story.
- *Technical spikes* – research technical approaches, e.g. build vs. buy, performance.
- *Functional spikes* – get feedback on how the user shall interact with the system, prototyping.

Spike Example

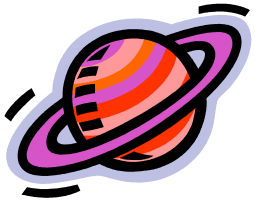
User Story:

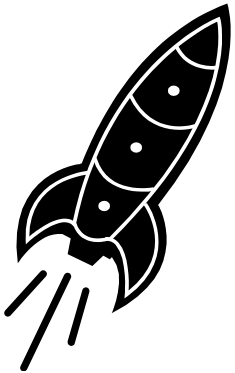
As a physician,
I want to send HL7 data about the patient to RIS,
so that I can be prepared for screening.

What is HL7?

Be able to explain to the team the structure and required fields of HL7 for transferring data to RIS, so team can estimate the story (2 days).

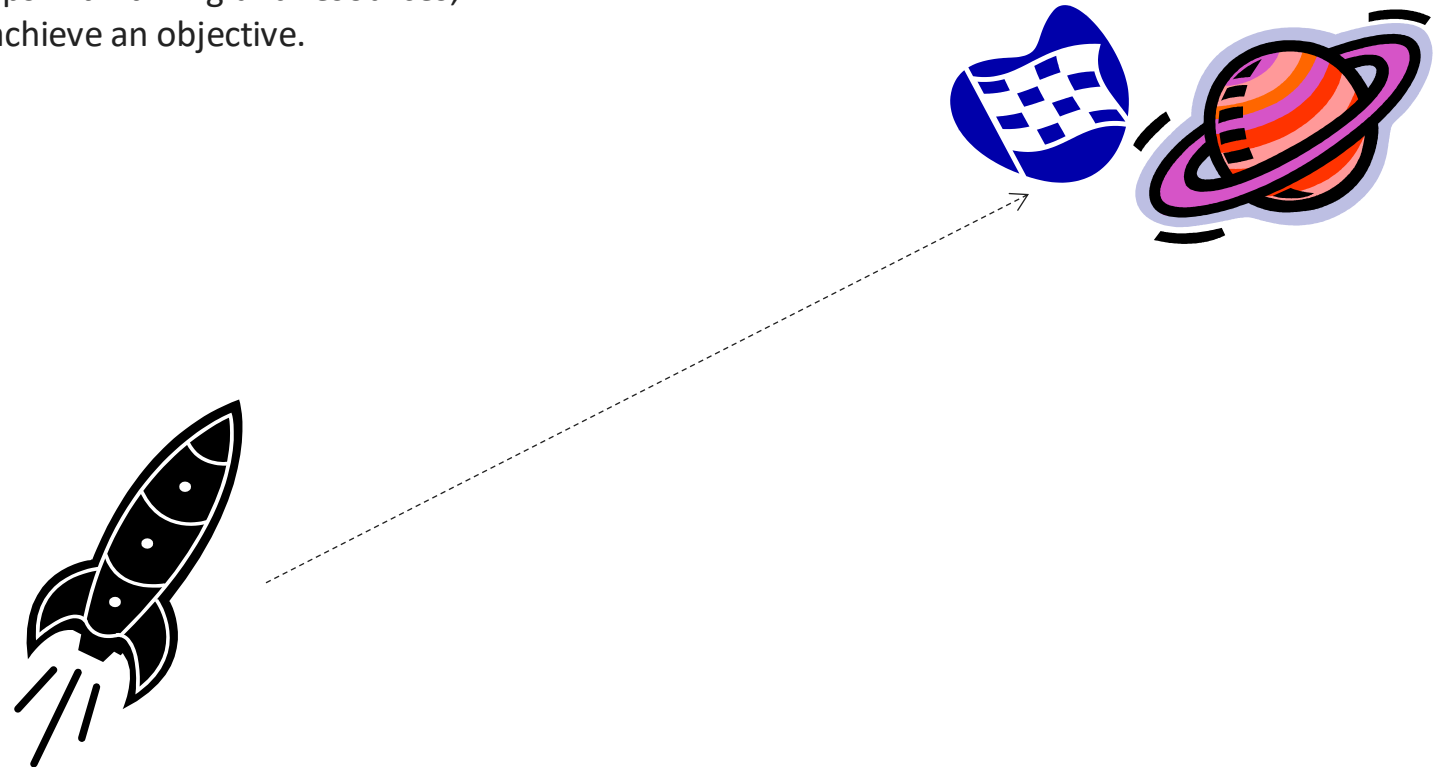
PLANNING AND ESTIMATION

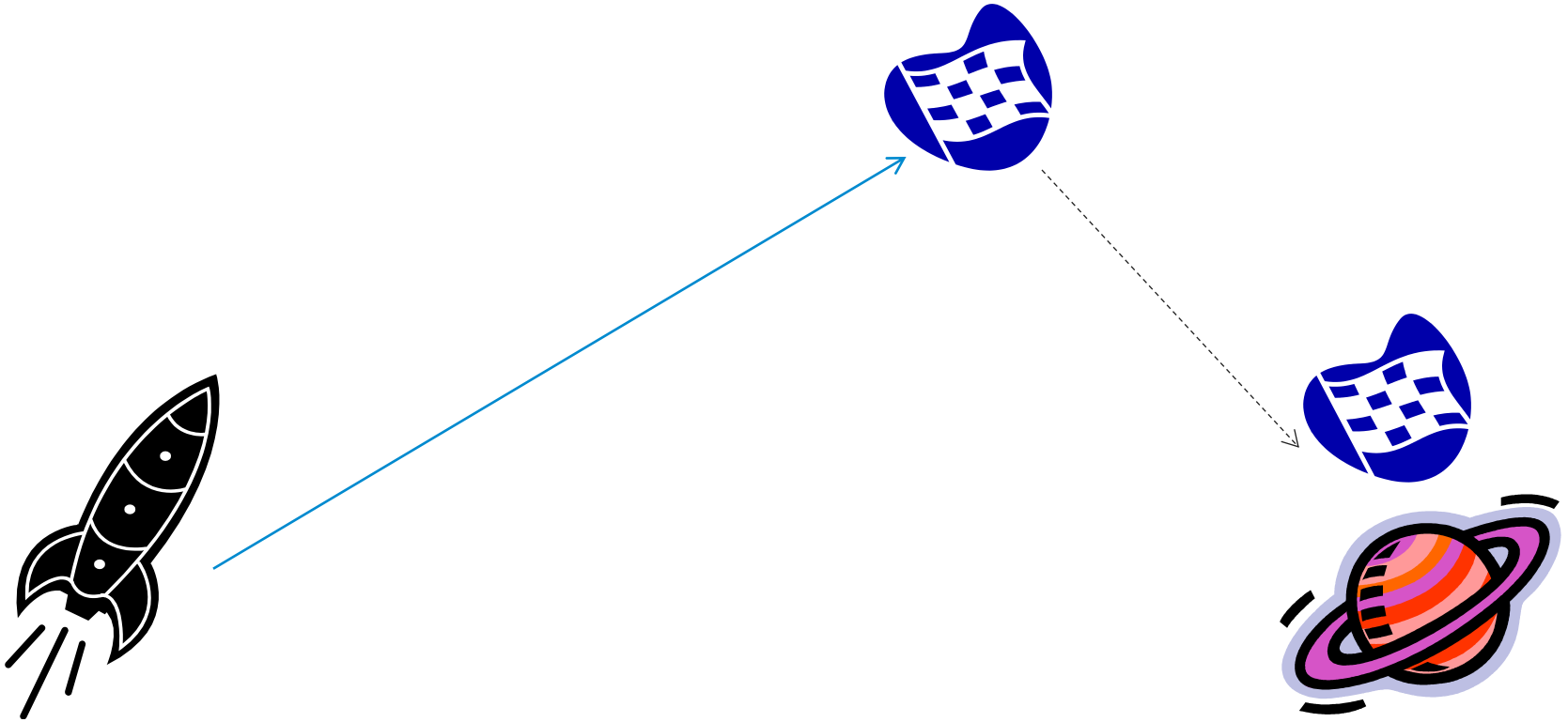


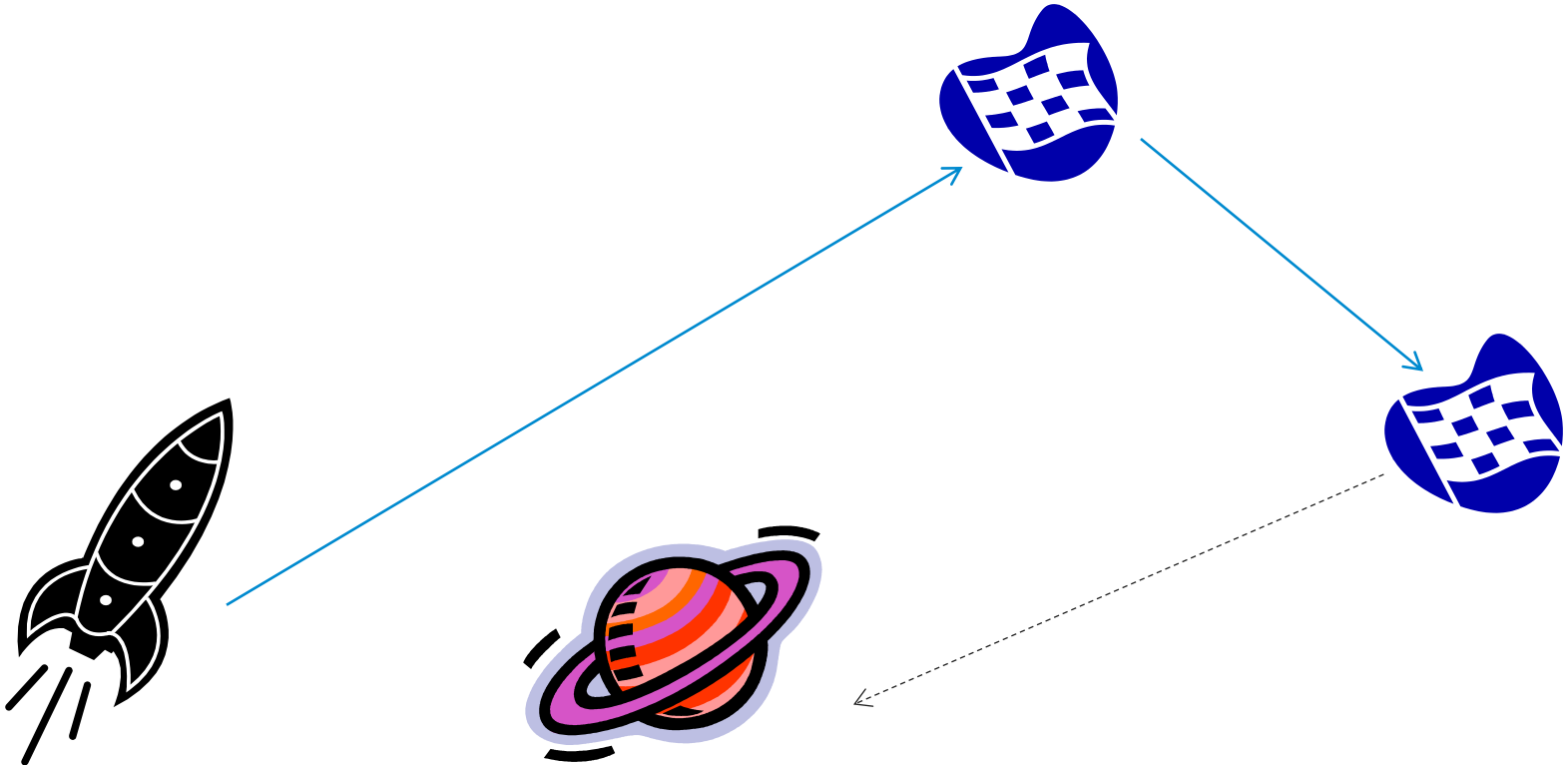


Plan

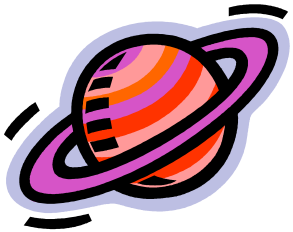
list of steps with timing and resources, used to achieve an objective.

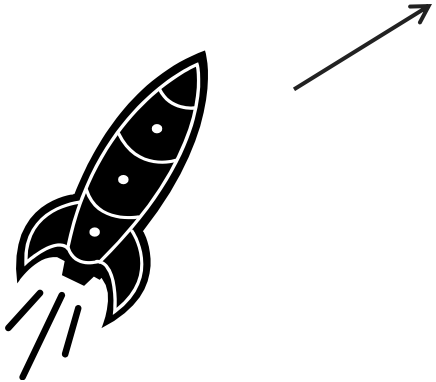




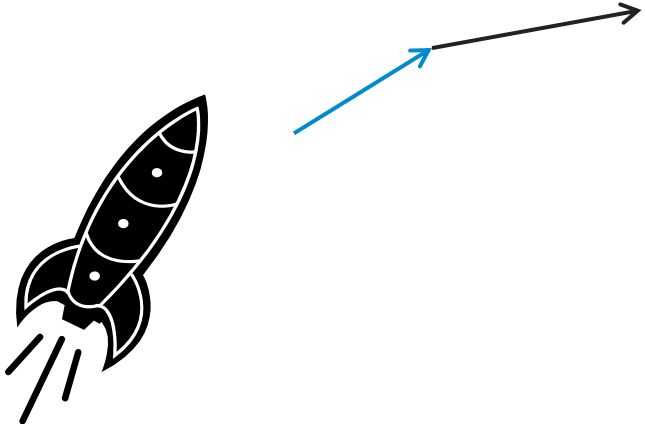


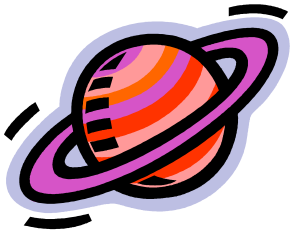
Planning



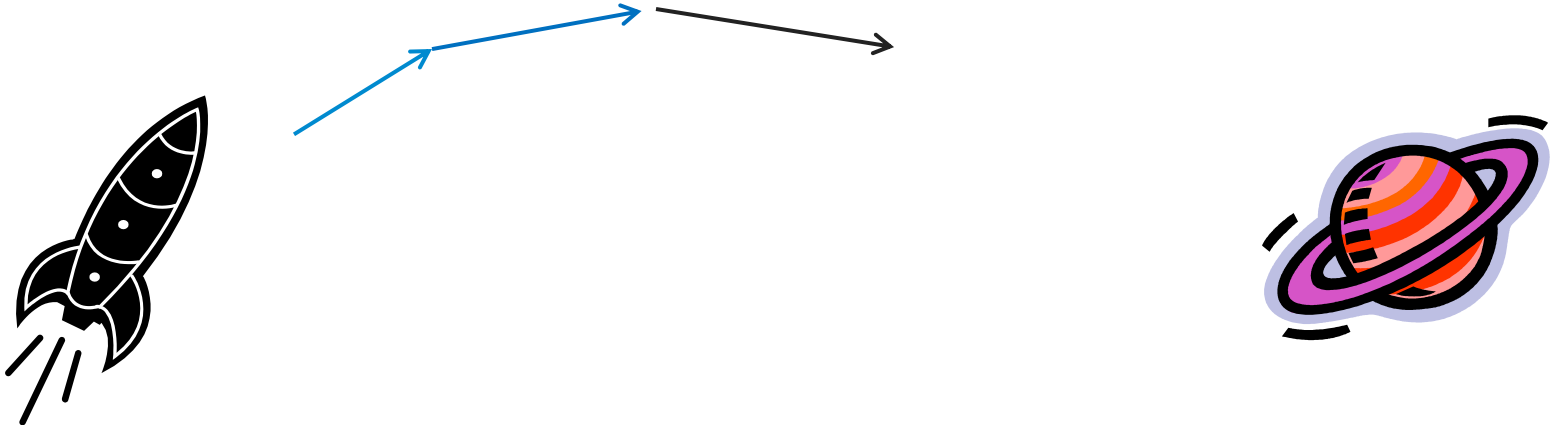


Planning





Planning



Estimation

Estimation

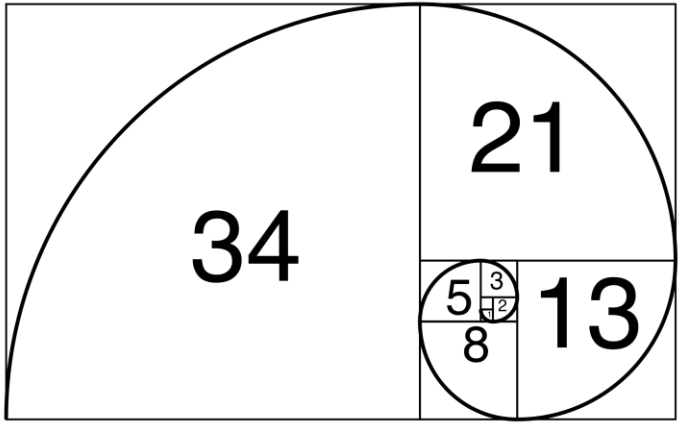
PROBLEMS WITH SOFTWARE ESTIMATES

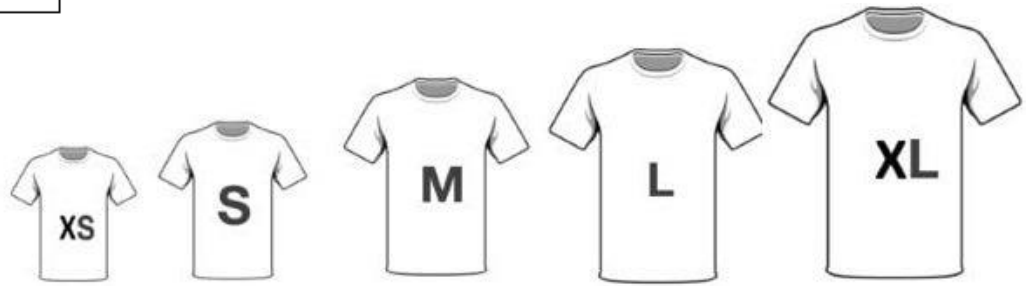
- Estimating the unknown
- Estimates are optimistic
- Estimated time is always used
- Business rely on estimations heavily

AS THE RESULT…

- Estimates are never correct
- Re-estimation takes a lot of time

Estimating size in story points or in T-shirt sizes





Story Points

- A relative term to measure the effort:
  - ➢1, 2, 3, 5, 8, 13, 21
  - ➢X Small, Small, Medium, Large, X Large
- Not related to hours
- Intended to quickly estimate how hard is the task and use the result for planning

Techniques

EXPERT'S OPINION

- Fast
- *Requires cross-functional experts*
- *Prejudiced*

ANALOGY

- Reuse of experience – estimating against similar completed stories
- *Need to have similar tasks*
- *Details are not considered*

DISAGGREGATION

- Splitting to smaller pieces
- *May take a long time*

Planning Poker – How?

Planning Poker®

- An iterative approach to estimating
- Steps
  - Each estimator is given a deck of cards, each card has a valid estimate written on it
  - Customer/Product owner reads a story and it's discussed briefly
  - Each estimator selects a card that's his or her estimate
  - Cards are turned over so all can see them
  - Discuss differences (especially outliers)
  - Re-estimate until estimates converge

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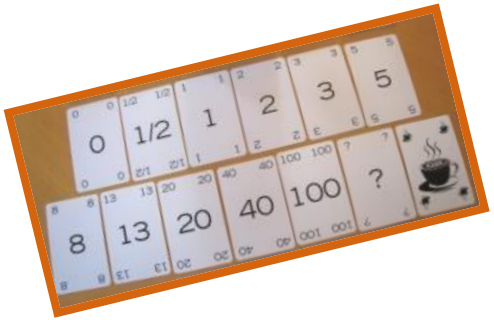
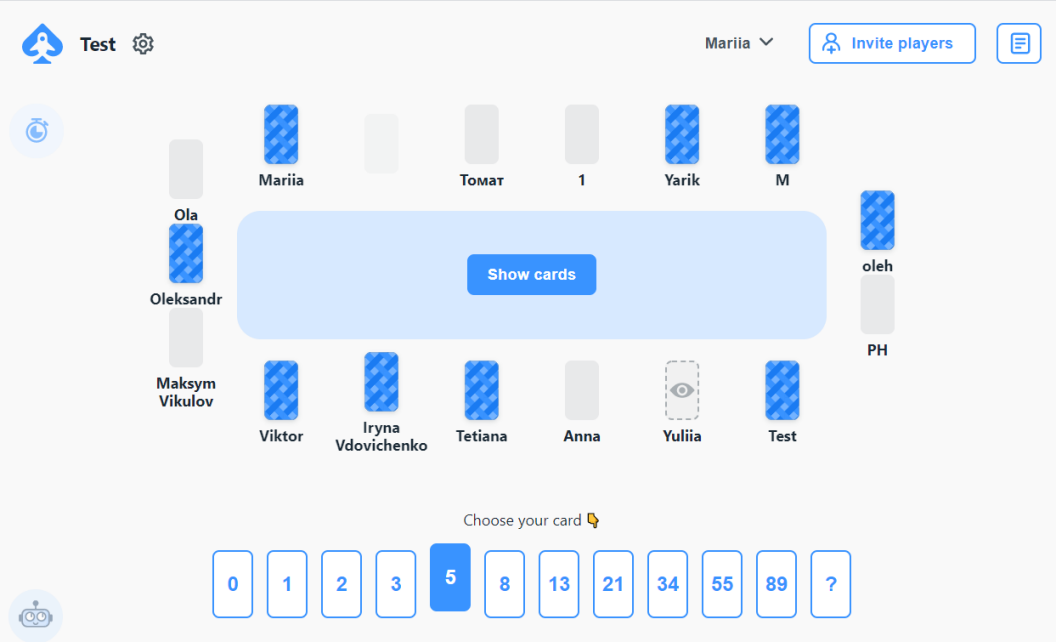


Interaction

HTTPS://PLANNINGPOKERONLINE.COM/



Planning Poker – when?

1) Before the 1st sprint – estimating initial set of stories.

2) During backlog refinement sessions.

3) Planning sessions

PO, SM and Team are playing.

Planning Poker – why?

- **Multiple expert opinions**.
- The people that estimate **will do the work.**
- Discussion brings **justification** and more accurate estimate.
- **Details are discovered**.
- It is **time boxed.**
- It is **fun**.

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