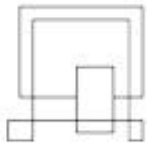
Life is great
VIA University College



Software Development with UML and Java 2

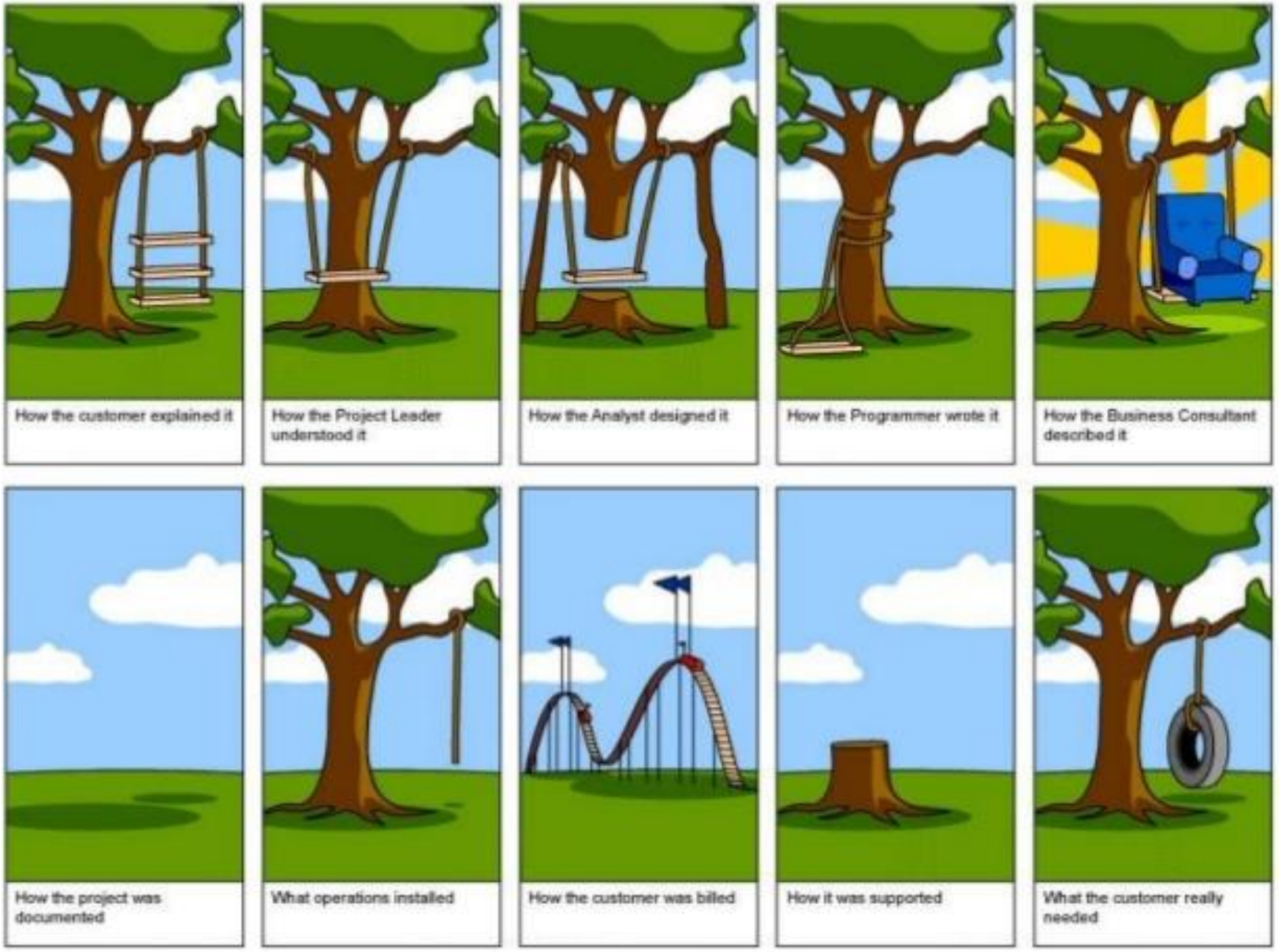
Agenda

- SCRUM

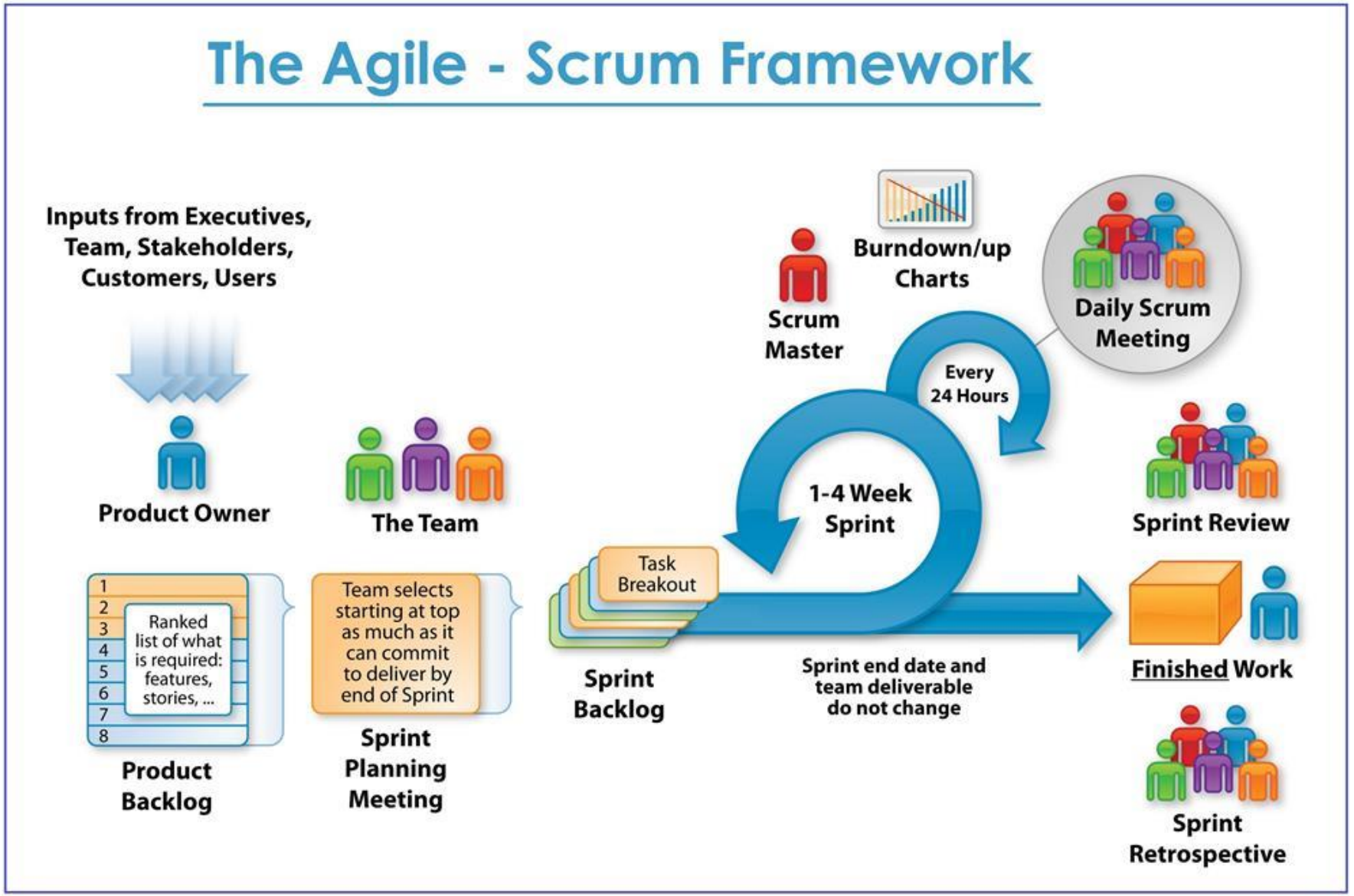
Some good references about SCRUM

- Introduction to SCRUM in less than 10 minutes
  - https://www.youtube.com/watch?v=XU0llRltyFM
- Introduction to SCRUM (7 min)
  - https://www.youtube.com/watch?v=9TycLR0TqFA
- SCRUM Crash Course (1 h 34 min)
  - https://www.youtube.com/watch?v=wNwfFStmtw8
- Websites about SCRUM
  - http://wiki.expertiza.ncsu.edu/index.php/CSC/ECE_517_Fall_2012/ch2a_2w6_ar
  - http://www.c-sharpcorner.com/UploadFile/d9c992/the-agile-scrum-framework/

How a product is delivered



SCRUM overview



http://www.c-sharpcorner.com/UploadFile/d9c992/the-agile-scrum-framework/

SCRUM Overview

- Sprints
  - Fixed timeboxed iterations (all sprints have the same lengths in days)
  - A sprint starts with a Sprint planning meeting (to know what to do)
  - A sprint ends with a Sprint review meeting (to show what's completed)
  - A sprint also ends with a Sprint retrospective meeting (to know what to improve to perform better)
  - Every day in a sprint includes a Daily Scum meeting

SCRUM Framework

- Artefacts
  - Product Backlog
  - Sprint Backlog
  - Burndown chart
- Roles
  - Product Owner
  - Scrum Master
  - Scrum Team
- Ceremonies
  - Sprint Planning
  - Sprint Review
  - Sprint Retrospective
  - …and daily Scrum meeting

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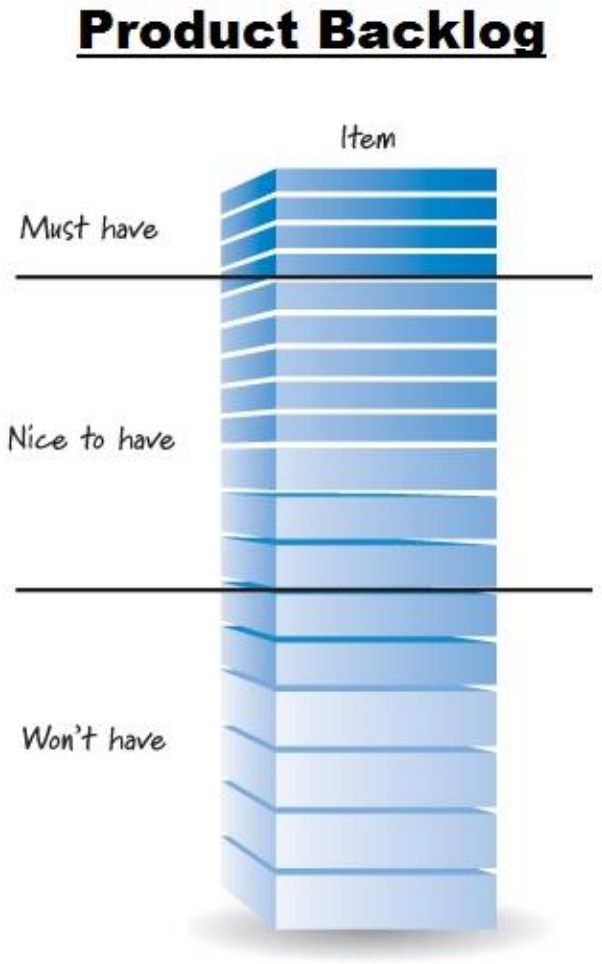
Product Backlog

- A prioritized list of items
  - Highest priority items are described in some details
  - Lower items without details
- Each item has
  - An ID
  - A priority
    - Critical, High, Medium, Low
  - A time estimate
    - Highest priority items are estimated fairly well
    - Lower prioritized items roughly estimated or not estimated at all



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Product Backlog (a list of User Stories)

- User stories are short, simple descriptions of a feature told from the perspective of the person who desires the new capability, usually a user of the system

- User Stories typically follow a simple template

  As a <type of user>, I want <some goal> so that <some reason>

- Example

  As an Administrator, I want to delete a user account

  so that inactive users can be removed from the system

Product Backlog example

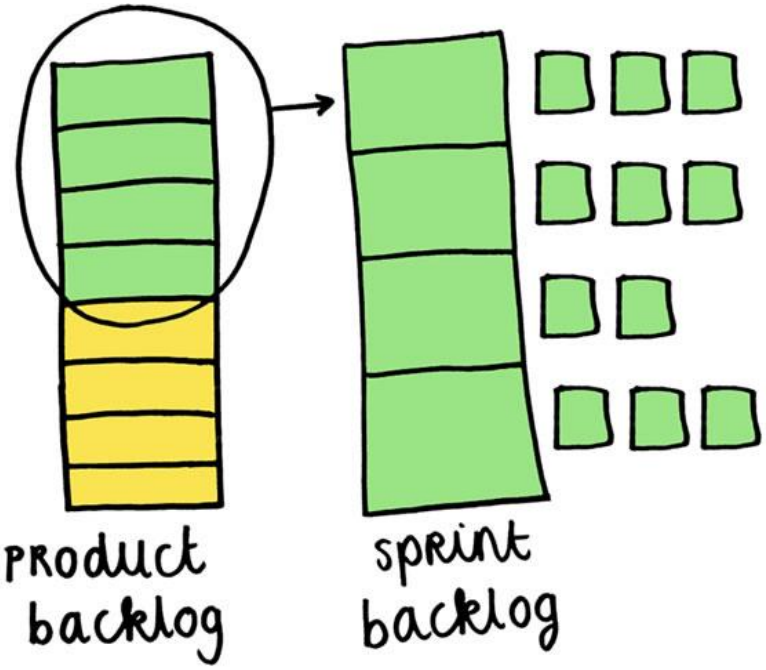
ID	Priority	Estimate	Item
3	Critical	13 h	As a User I want to get access to moisture data from different computers on the same network in order to have more users simultaneously (Non-functional requirement: The system has to follow a client/server architecture).
4	Critical	5 h	As a User I can select a building envelope in order to specify from where to get moisture data.
5	Critical	5 h	As a User I can select data/time range for moisture data in order to get moisture data in a specified range.
6	Critical	5 h	As a User I can download moisture data according to selections made in order to analyse data on the local computer.
7	High	3 h	As a User I can get a list (name and description) of building envelopes in order to select a specific building envelope from where to get moisture data.

Product Backlog example

ID	Priority	Estimate	Item
8	High	3 h	As a User I can get material data for a selected building envelope in order to validate moisture data downloaded from the specified building envelope.
13	Medium	8 h	As an administrator I can request a log from server with information about when and what has been requested by users in order to analyse the use of the application.
14	Medium	8 h	As a User I can interact with the program using a graphical user interface in order to get a more user friendly design.
15	Medium	?	As a User I want to get access to moisture data independent on network in order to extensively expand the use of the application.
22	Low	2 h	As a User I can get notifications for unreliable data and data change of previously downloaded data in order to avoid using wrong data

Sprint Backlog

- A list of tasks
  - Items are taken from the product backlog and subdivided into tasks
- Each task has
  - A reference to a Product backlog item (Product backlog ID)
  - A time estimate
    - The sum of time estimates for all tasks belonging to a PB item has to match the estimate for this item
  - The name of the team member responsible for the task
  - Status
    - Not started, In progress, Done



http://www.parorrey.com/blog/project-management/scrum-overview-commonly-used-terms/

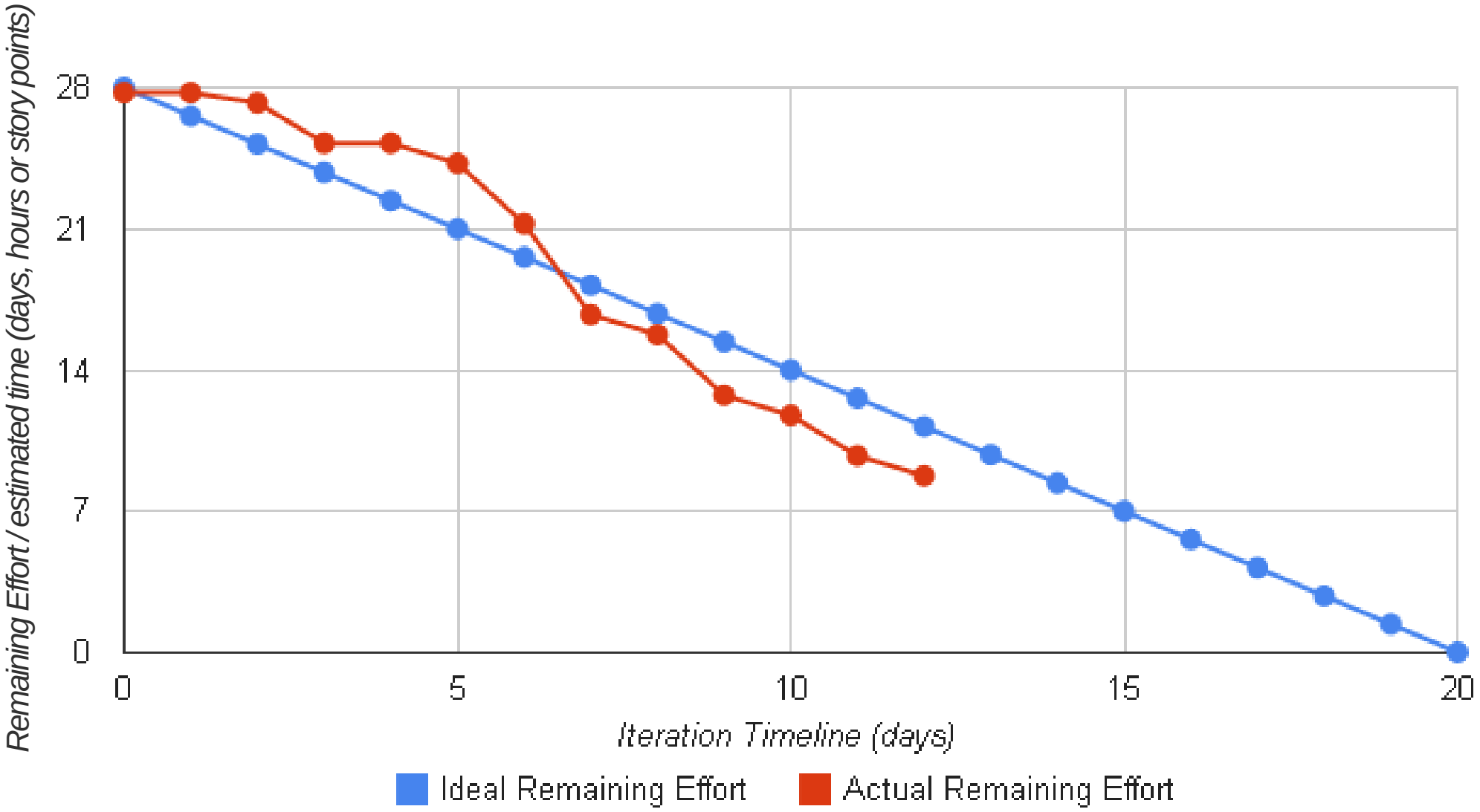
Sprint backlog example

PB-ID	ID	Task title	Responsible	Estimate (days)	Status
6	1	Design(Update)/Usecases for Adding building envelopes dynamically	Paw	1.0	Done
6	2	Implement Adding building envelopes dynamically	Simon	4.0	In progress
6	3	Test Adding building envelopes dynamically	Arvind	2.0	Not started
6	4	Document Adding building envelopes dynamically	Paw	1.0	In progress
5	5	Test cases for "Selecting Time Intervals for retrieving data"	Arvind	0.5	Done
7	6	Design Usecases: Distinguish between administrator and user (Login)	Paw	0.25	Done
7	7	Implement Distinguish between administrator and user(Login)	Paw	0.25	Done
7	8	Test Distinguish between administrator and user(Login)	Paw	0.25	Not started
7	9	Document Distinguish between administrator and user(Login)	Paw	0.25	In progress

Burndown chart

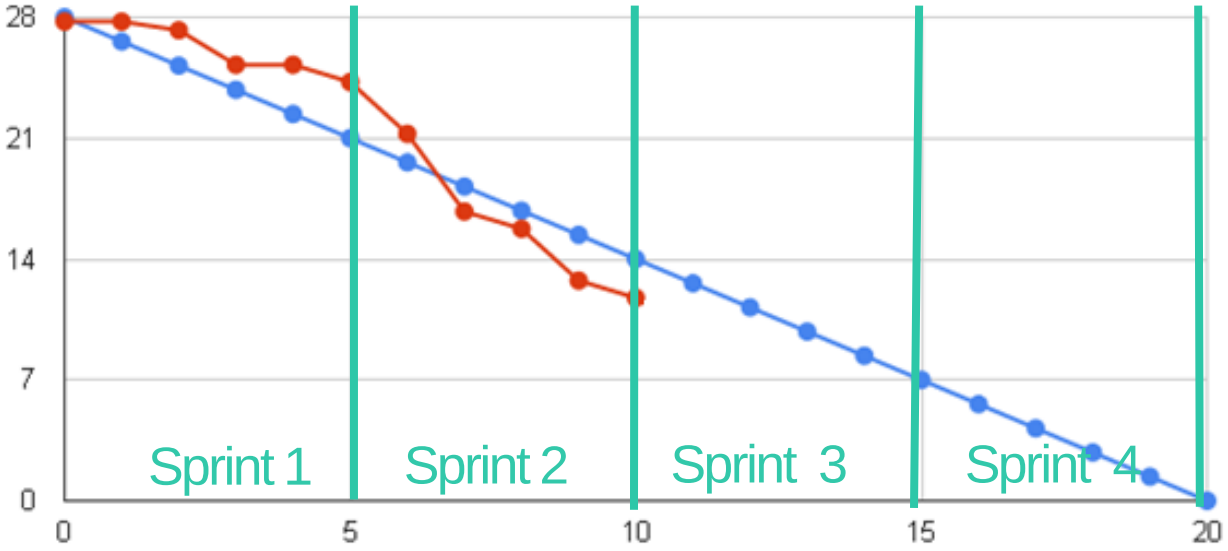
- The burndown chart show the work velocity, how fast the team is working, if the team is ahead of schedule or behind schedule
- Scrum Master is responsible for updating the burndown chart and for presenting it to the team
- The burndown chart is a tool to make better estimates, to learn from the previous sprint and to know when to work harder and when to take a day off (this is decided by the Scrum Master)

Burndown chart



Burndown chart

- In principle you make a Burndown chart for every sprint – tracking the velocity in a sprint
- Compromise: In small projects (SEP2) with a length of a few weeks and sprint length as short as a few days
  - Instead, an ‘overall’ burndown chart is made for the full period



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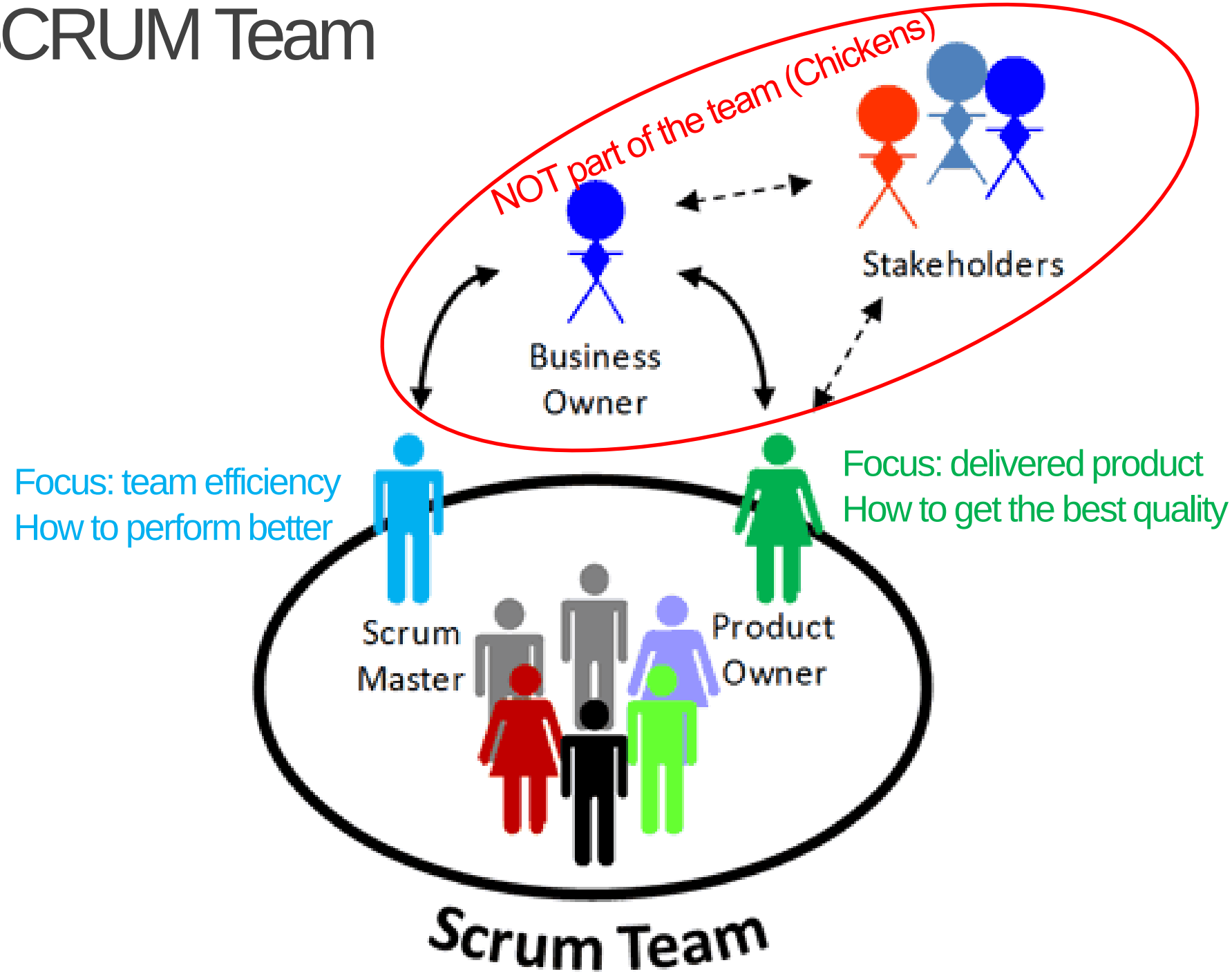
SCRUM Team

- Scrum Team members are known as pigs i.e. they are committed delivering Sprint Goal
- People who are involved but not dedicated to the project are known as chickens
  - Attend daily Scrum meetings only as observers

SCRUM Team


NOT part of the team (Chickens)
Stakeholders
Business Owner
Focus: team efficiency
How to perform better
Focus: delivered product
How to get the best quality
Scrum Master
Product Owner
Scrum Team

SCRUM Team

- Team members share the same norms and rules
- The team as a whole is accountable for the delivery
- It is working as autonomous as it is possible
- The Scrum Team is self organizing
- The skills within the Scrum team are balanced
- A Scrum Team is small and has no sub-teams
- The people within the team work full time in the team
- People are collocated

http://www.scrum-institute.org/Scrum_Roles_The_Scrum_Team.php

SCRUM Team responsibilities

- They have to breakdown the requirements, create task, estimate and distribute them. In other words this means that they have to create the *Sprint Backlog*.
- They have to perform the short *Daily Sprint Meeting*.
- They have to ensure that at the end of the Sprint potentially shippable functionality is delivered.
- They have to update the status and the remaining efforts for their tasks to allow creation of a *Sprint Burndown Diagram.*

Product Owner

- Responsible for creating and maintaining the *Product backlog*.
- Prioritizing the Product backlog items.
- Plays an active role in Sprint Review Meetings.
- Attend Sprint Planning Meetings.
- Clearly communicate the business requirements to the Team
- Get detail level of requirement from stakeholders or customers
- Build and maintain a relationship with Stakeholders

SCRUM Master

- Facilitate team for better creativity and tries to improve the efficiency of the development team.
- Acts as safeguard for the Scrum team and is responsible to remove the impediments for the team.
- Helps Product Owner to make the Product Backlog in good shape and make it ready for the next sprint.
- Responsible for managing the Scrum process with the coordination of Scrum Team in Agile methodology.
- Arrange, facilitate and schedule meetings.
  - Daily Scrum meetings
  - Sprint Planning meetings
  - Review meetings
  - Retrospective meetings

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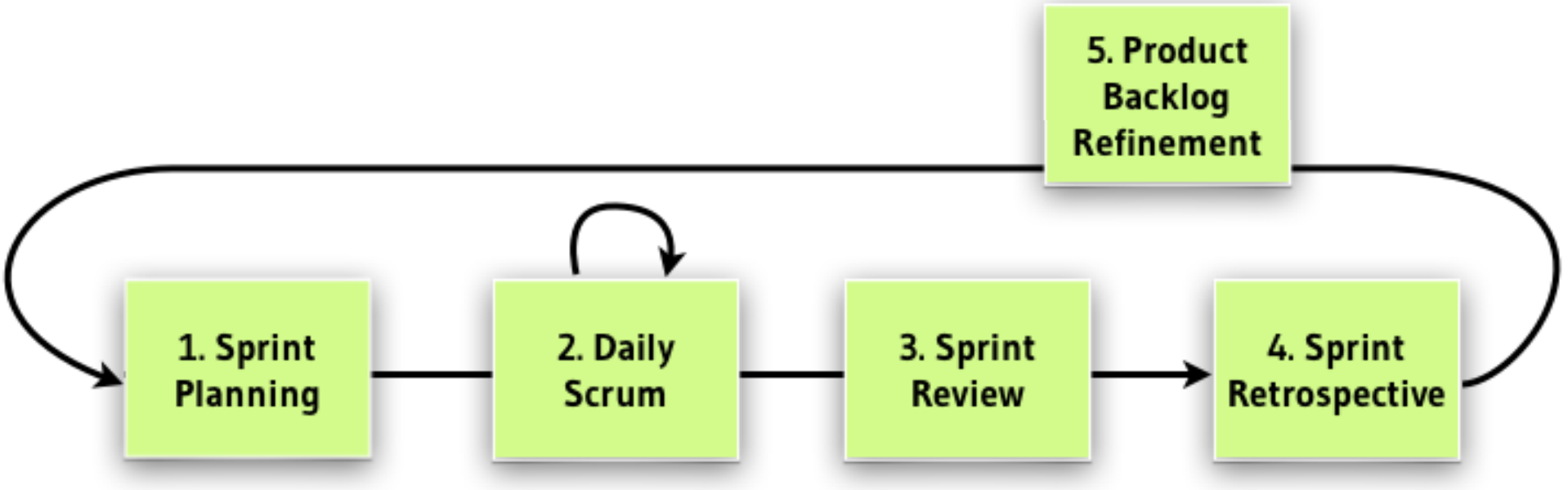
SCRUM Ceremoniens



http://www.c-sharpcorner.com/UploadFile/d9c992/the-agile-scrum-framework/

Sprint Planning Meeting

http://www.continuousautomation.com/agile-101-effective-sprint-planning-sessions/

Sprint Review Meeting

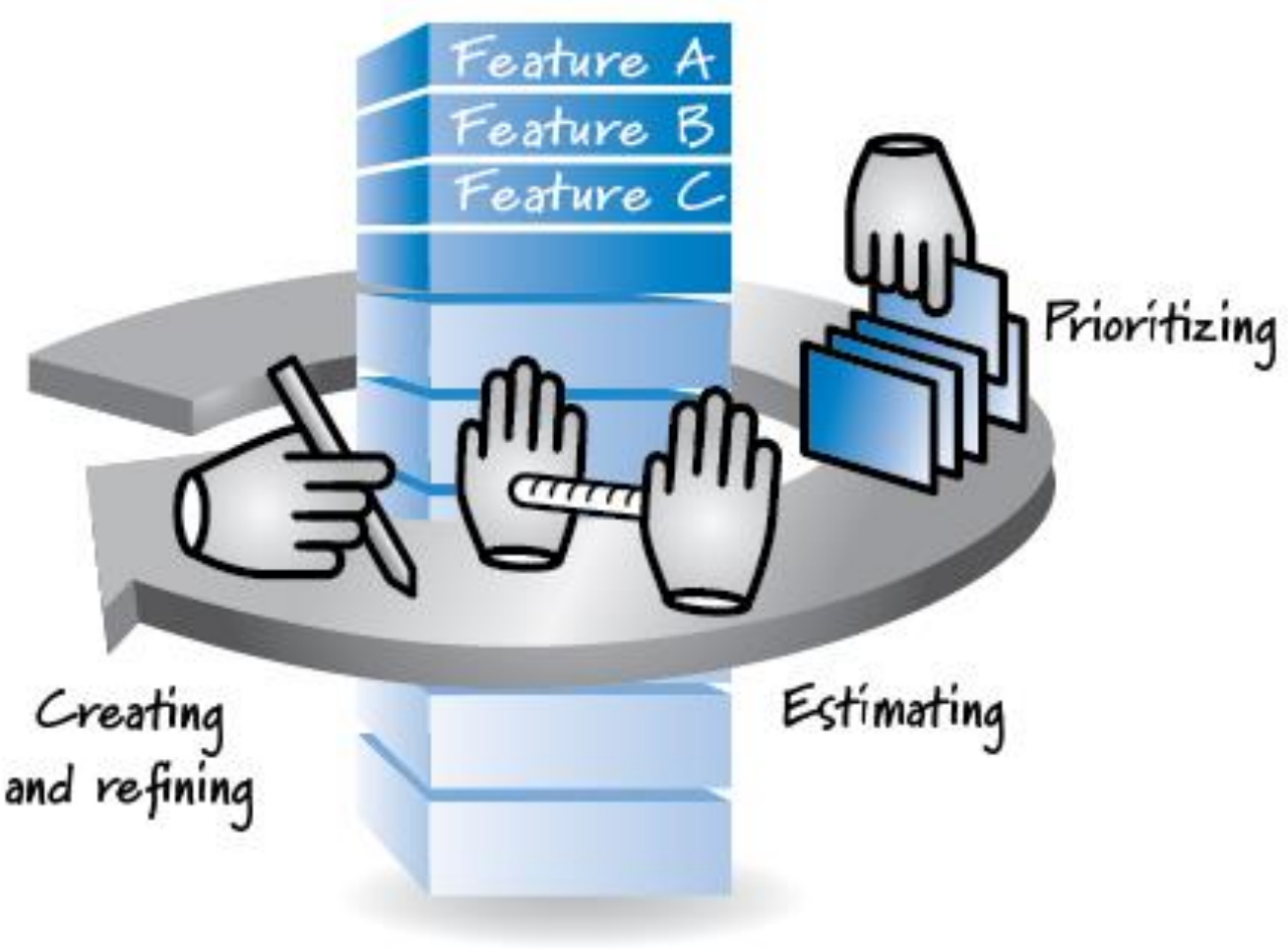
http://www.c-sharpcorner.com/UploadFile/d9c992/the-agile-scrum-framework/

Sprint Retrospective Meeting

Start – Stop – Continue

http://www.c-sharpcorner.com/UploadFile/d9c992/the-agile-scrum-framework/

Product Backlog refinement



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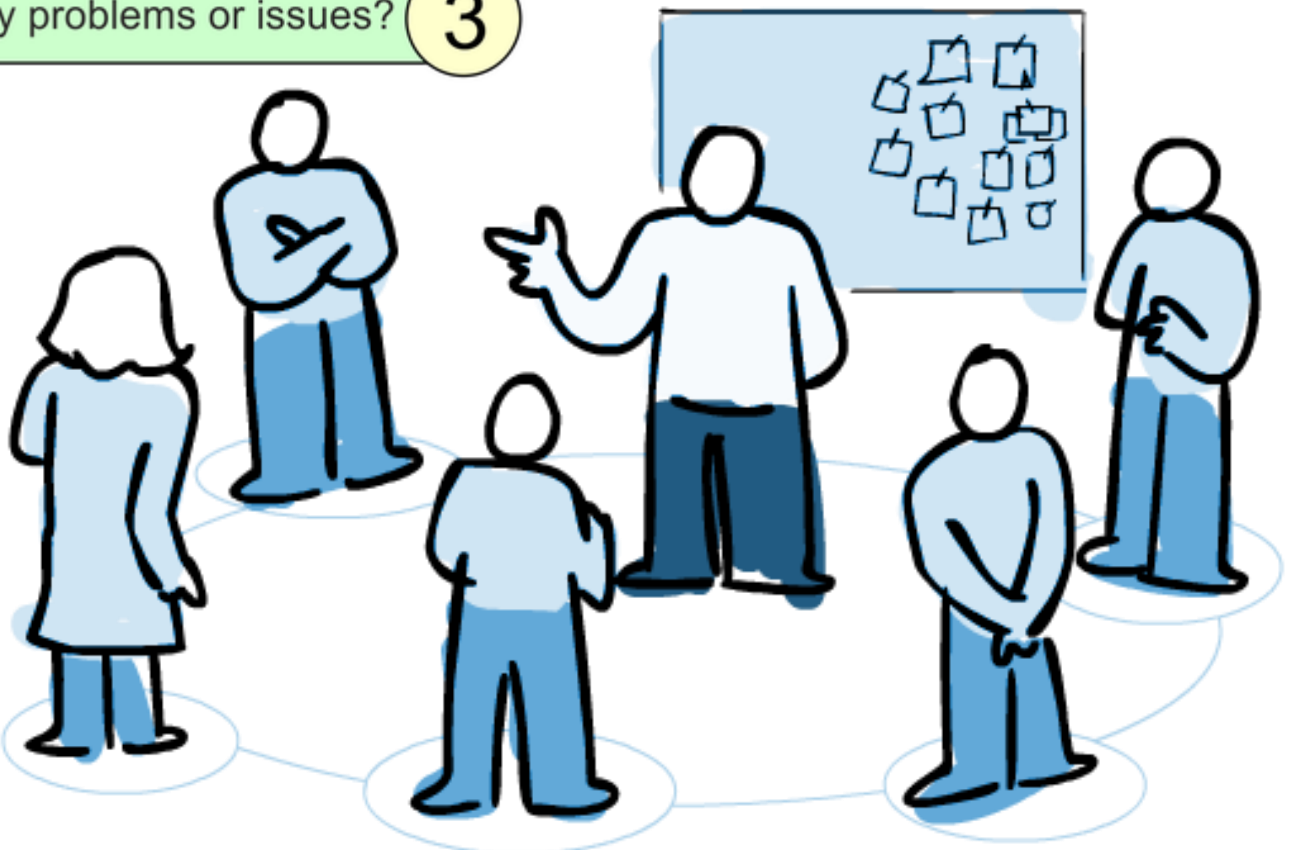
Daily Scrum Meeting

1. What work did you complete yesterday?
2. What have you planned for today?
3. Are you facing any problems or issues?



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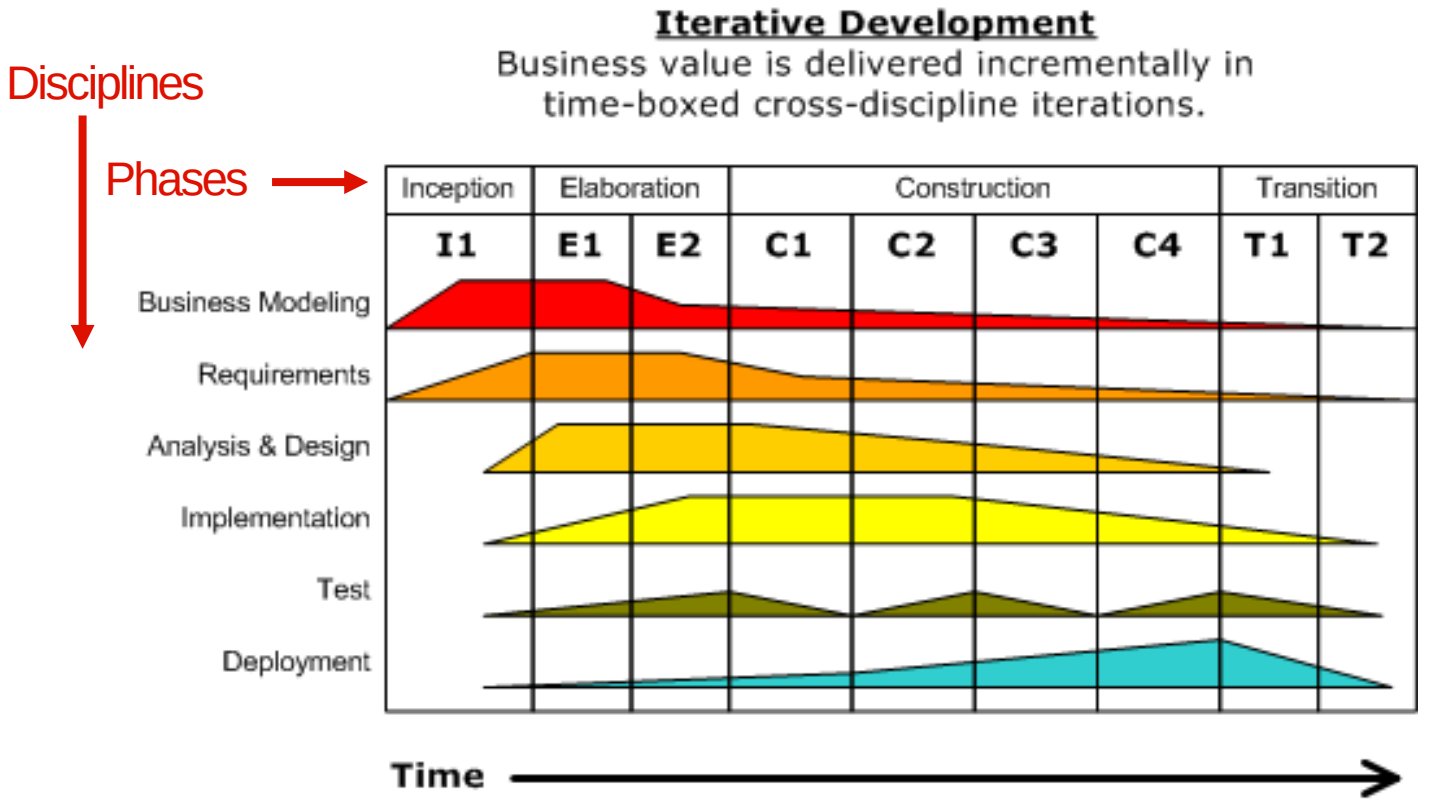
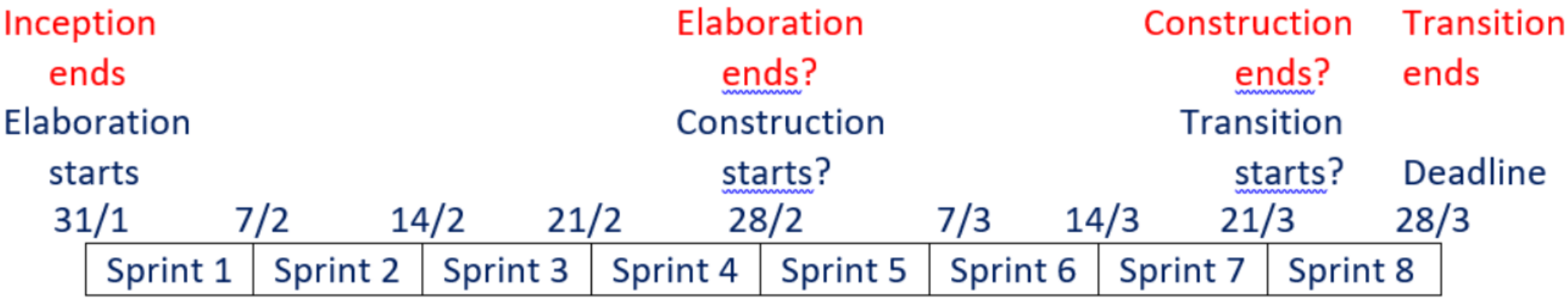
How to combine SCRUM and UP?

- How to fit SCRUM into UP (phases)
- How to fit UP (disciplines) into SCRUM



SCUM and UP



- Inception phase is before sprint 1
- Some sprints are in Elaboration, other in Construction and other in Transition
- The phase is defined by current system and what you do in a sprint (what is in the sprint backlog)
- In each sprint you go through all the UP disciplines

Inception phase

- Purpose
  - High level objectives, business case, vision and scope defined and agreed
  - 10% of the significant requirements defined in detail
  - Key risks identified
  - Elaboration effort estimated
- Possible activities
  - Requirements workshop
  - Start vision and risk list
  - Start Use Case model
  - Prototyping

Elaboration phase

- Purpose
  - Core architectural significant parts of system coded and tested
  - Significant risks detected
  - 80% of major requirements evolved and defined in detail
  - Enough stability and information to estimate duration and effort
- Possible activities
  - Testing, programming, designing in short time-boxed iterations
  - Requirements workshop, refining the vision
  - Refining the environment

Construction phase

- Purpose
  - System completed and ready for deployment
  - Efficient and predictable development, building on the stable architecture coded in elaboration
- Possible activities
  - Testing, programming, designing in short iterations
  - Create all documents

Transition phase

- Purpose
  - System verified as ready for deployment
  - Deployed system
- Possible activities
  - Beta or release candidate, testing and feedback
  - Final programming and documentation
  - Educating, marketing, ….
  - Deployment