Overview of

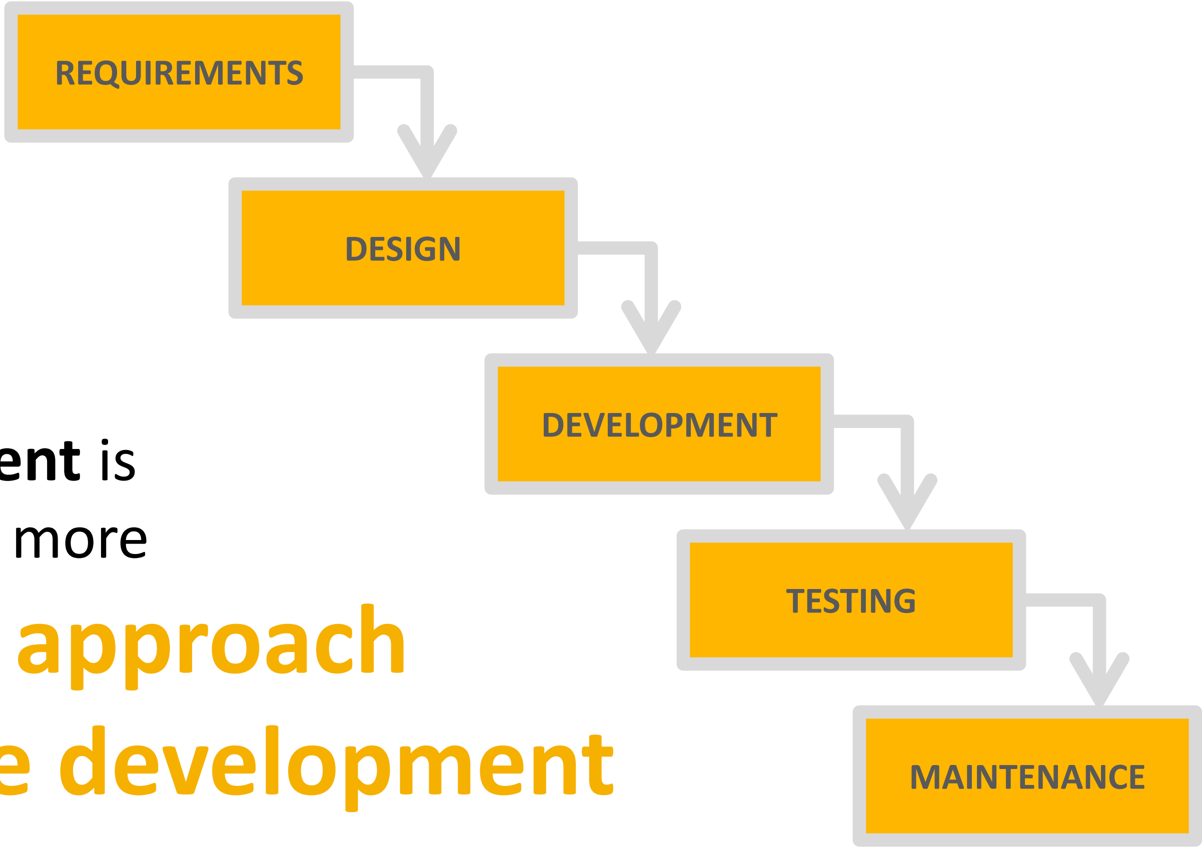
Agile Methodology

Prepared by: Haresh Karkar [Information Architect]

A [really] short history of

Software development processes

Waterfall Development



Waterfall Development is another name for the more

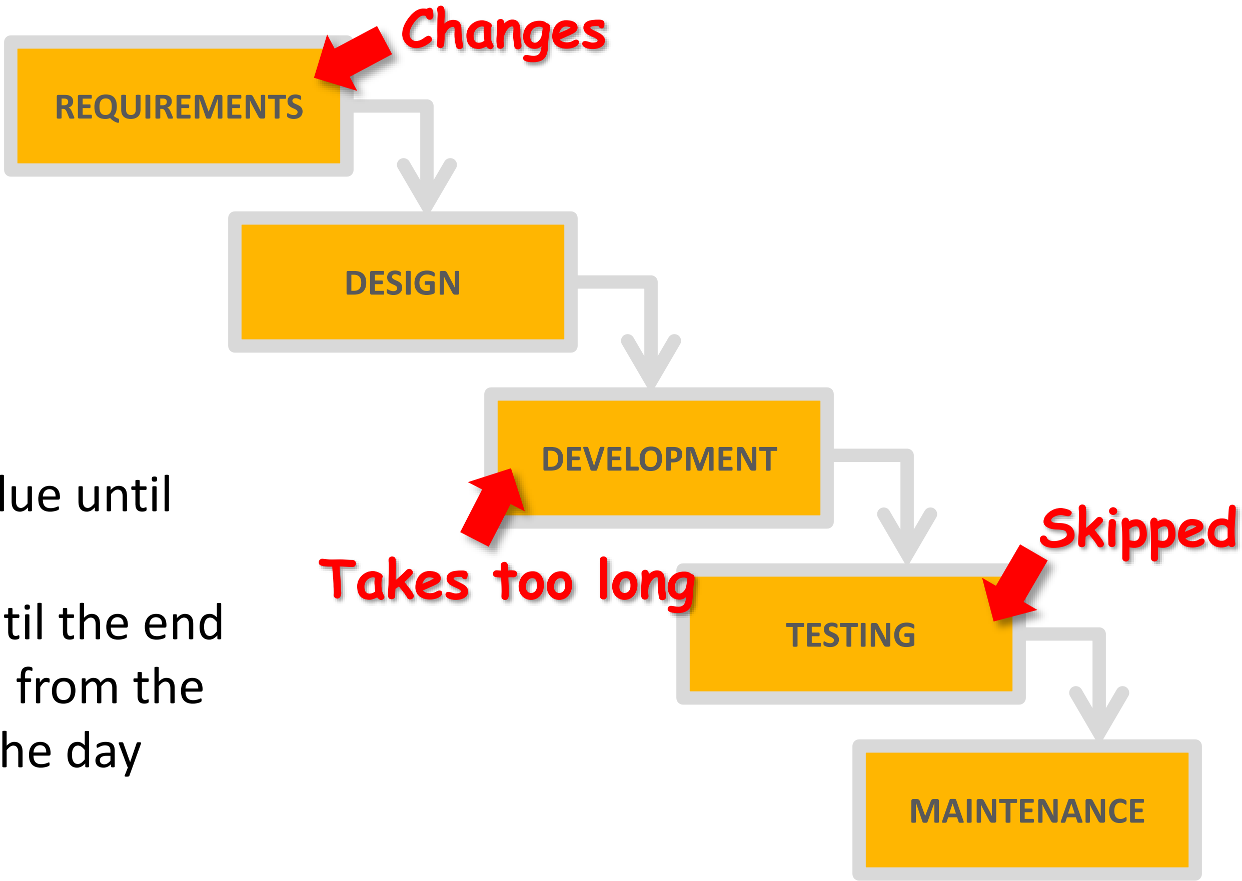
traditional approach to software development

Waterfall Development (contd..)

You **complete one phase** (e.g. design) **before** moving on to the **next phase** (e.g. development)

You **rarely aim to re-visit a ‘phase’ once it’s completed**. That means, you **better get whatever you’re doing right the first time!**

But…



- You don’t realize any value until the end of the project
- You leave the testing until the end
- You don’t seek approval from the stakeholders until late in the day

This approach is **highly risky**, often more **costly** and generally **less efficient** than **Agile** approaches

Rapid Adaptable

AGILE

Quality-driven

Cooperative Iterative

Not a process, it's a **philosophy** or **set of values**

Agile Manifesto

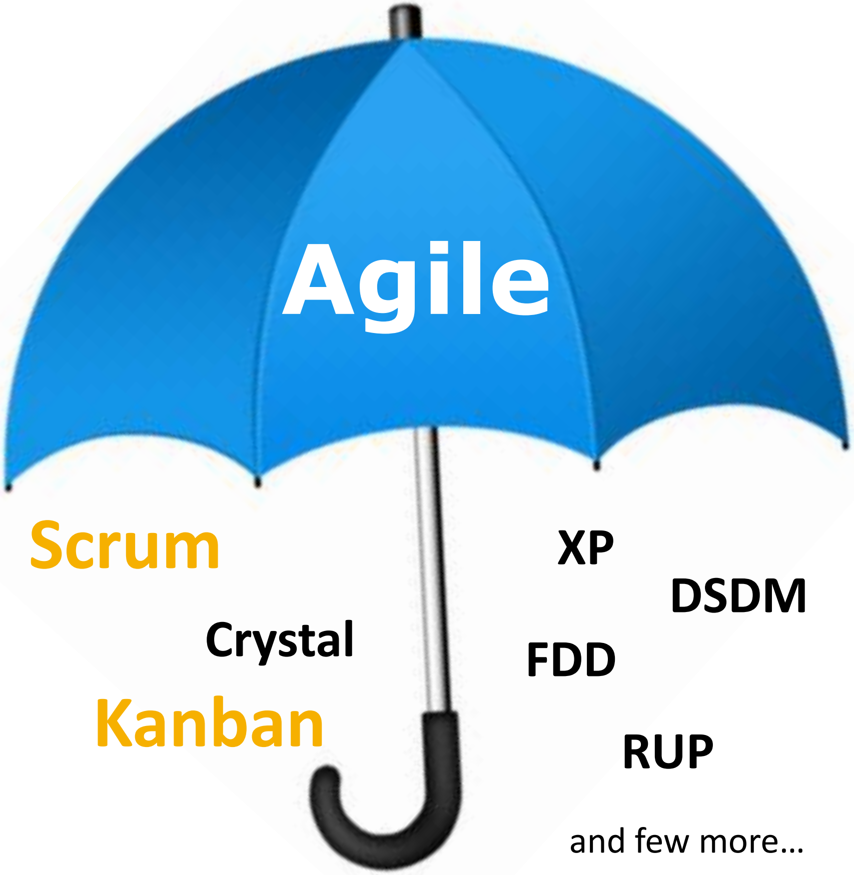
Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

Agile Umbrella



Scrum

Crystal

Kanban

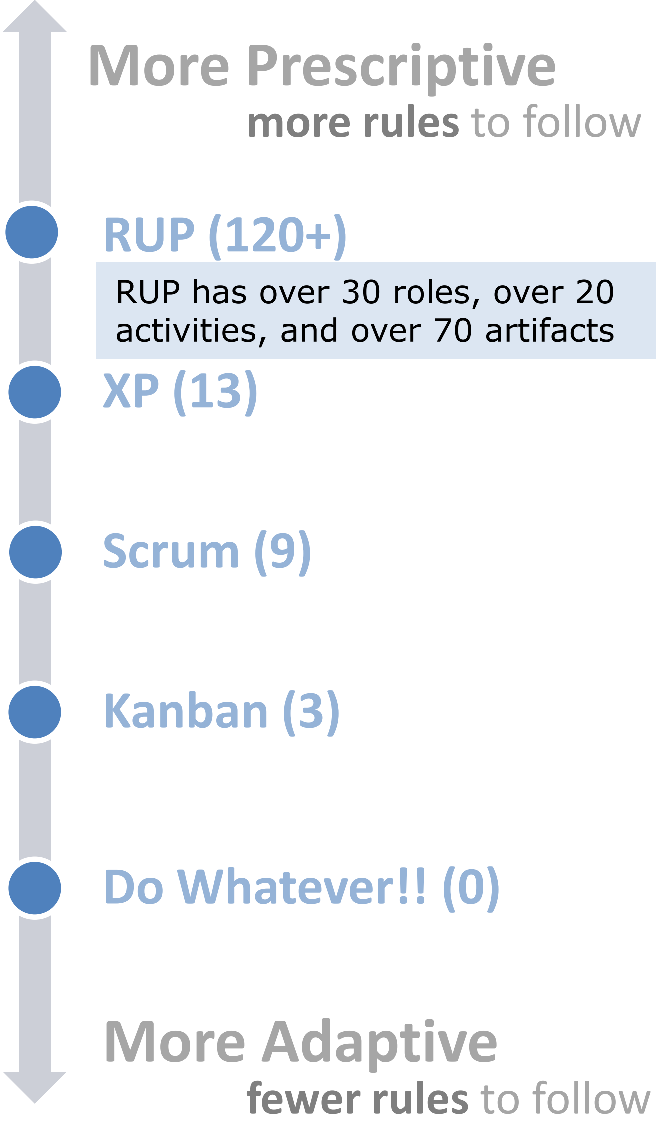
XP

DSDM

FDD

RUP

and few more…



More Prescriptive
more rules to follow

RUP (120+)

RUP has over 30 roles, over 20 activities, and over 70 artifacts

XP (13)

Scrum (9)

Kanban (3)

Do Whatever!! (0)

More Adaptive
fewer rules to follow

* Check wikipedia for list of all Agile methods

A **light-weight agile process tool**

Scrum

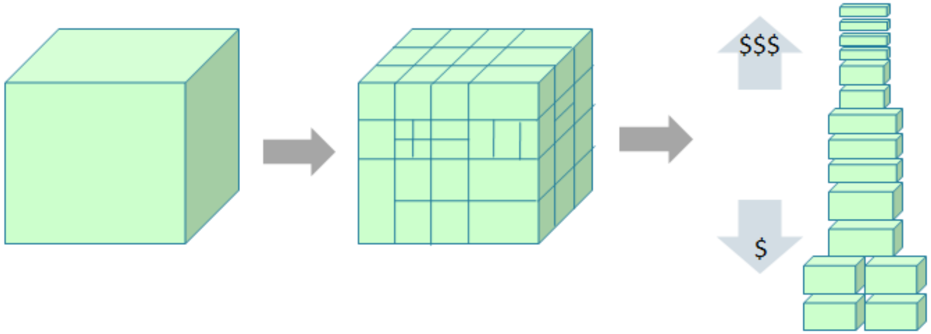
Split your organization into small, cross-functional, self-organizing teams.

Product/ Project Owner

Scrum Master

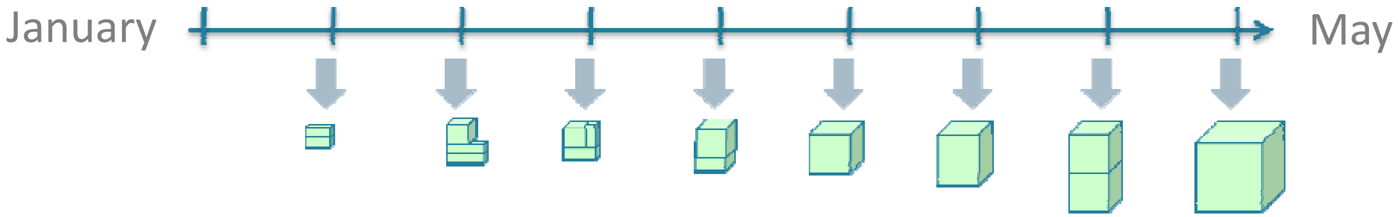
Scrum Team

Split your work into a list of small, concrete deliverables. Sort the list by priority and estimate the relative effort of each item.



Scrum (contd..)

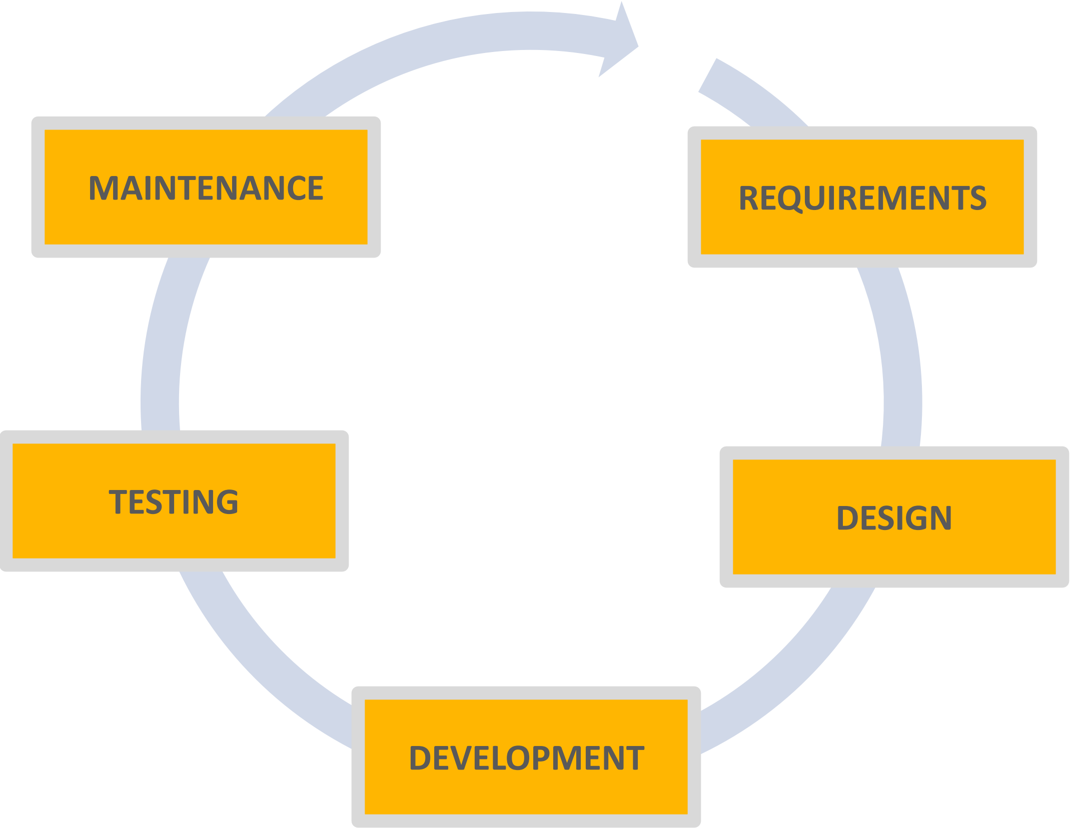
Split time into short fixed-length iterations/ sprints (usually 2 – 4 weeks), with potentially shippable code demonstrated after each iteration.



Optimize the release plan and update priorities in collaboration with the customer, based on insights gained by inspecting the release after each iteration.

Optimize the process by having a retrospective after each iteration.

Scrum vs. Waterfall



REQUIREMENTS

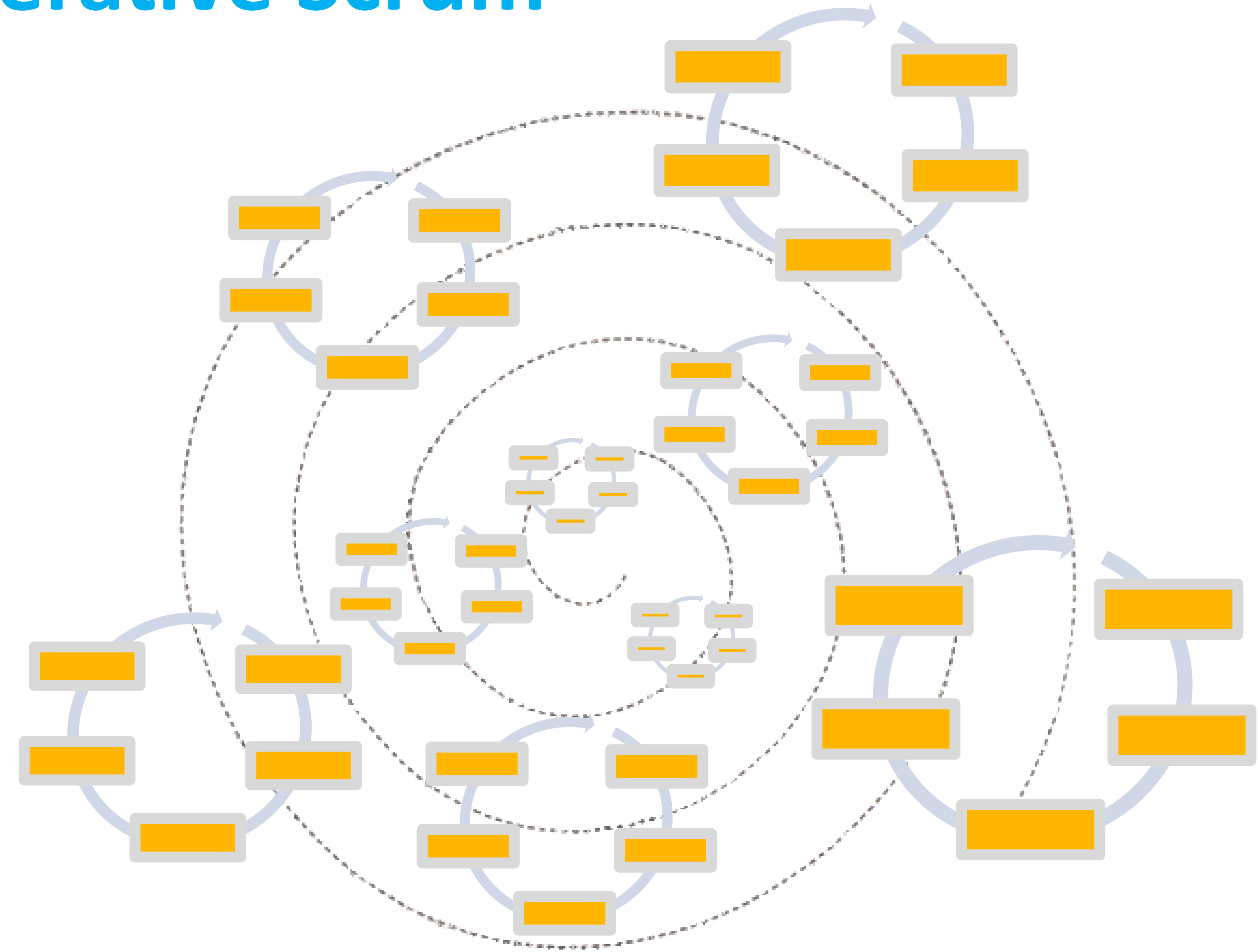
DESIGN

DEVELOPMENT

TESTING

MAINTENANCE

Iterative Scrum



Things we do in Scrum

a.k.a Scrum terminologies

The project/ product is described as a list of features: the **backlog**.

The features are described in terms of **user stories**.

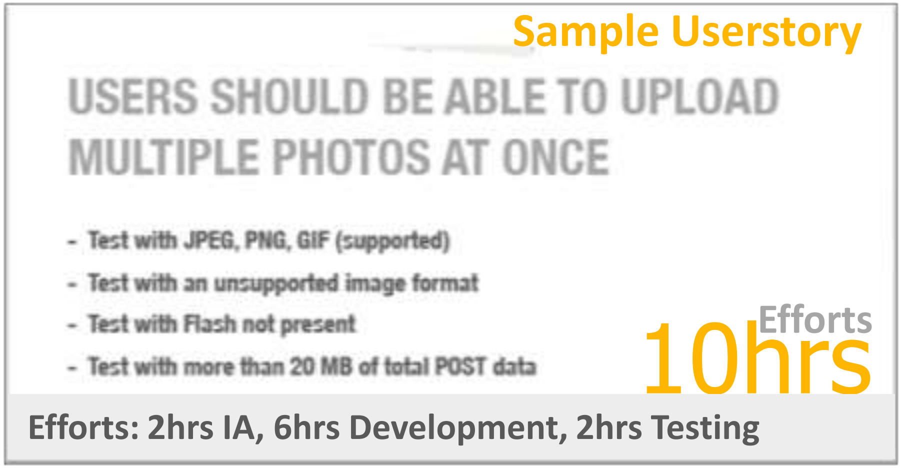
The scrum team **estimates** the **work** associated with each story.

Features in the backlog are **ranked** in order of importance.

Result: a **ranked** and **weighted** list of product features, a **roadmap**.

Daily scrum meeting to discuss **What did you do y'day**? **What will you do today**? **Any obstacles**?

Scrum Artifacts



Sample Userstory

USERS SHOULD BE ABLE TO UPLOAD MULTIPLE PHOTOS AT ONCE

- Test with JPEG, PNG, GIF (supported)
- Test with an unsupported image format
- Test with Flash not present
- Test with more than 20 MB of total POST data

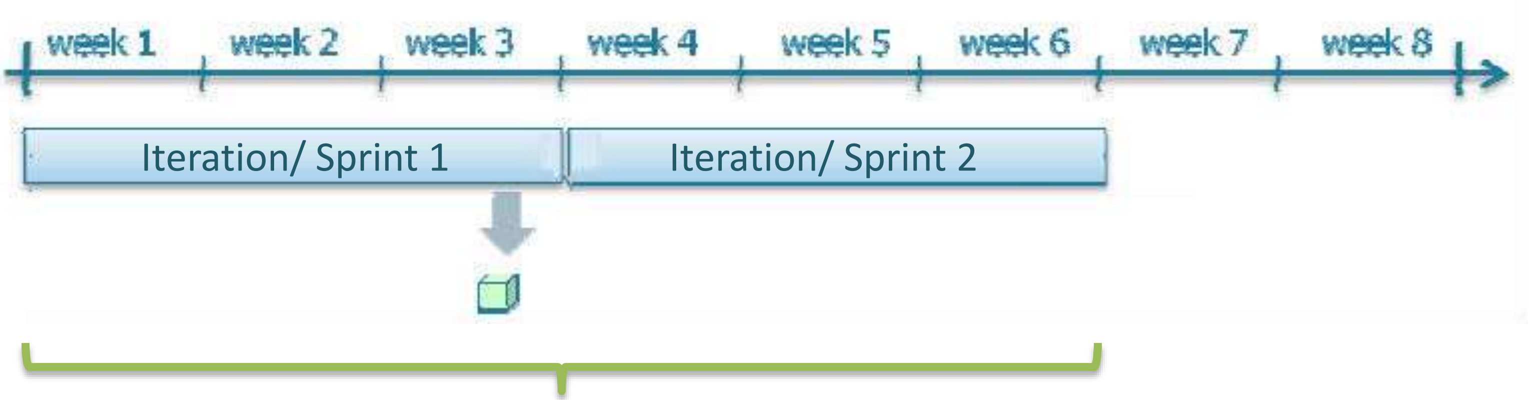
Efforts

10hrs

Efforts: 2hrs IA, 6hrs Development, 2hrs Testing

The total effort each iteration can accommodate **leads to** number of user story per iteration

Iterations View



Release

One **release** may contains **number of iterations**

Scrum planning example

Iteration cycle of **3 weeks**

Working hours per day is **8**

Total hours of **work iteration can accommodate**

8hrs x 5days x 3weeks = **120hrs**

Product backlog of **20 stories**

Each story effort is **10 hrs**

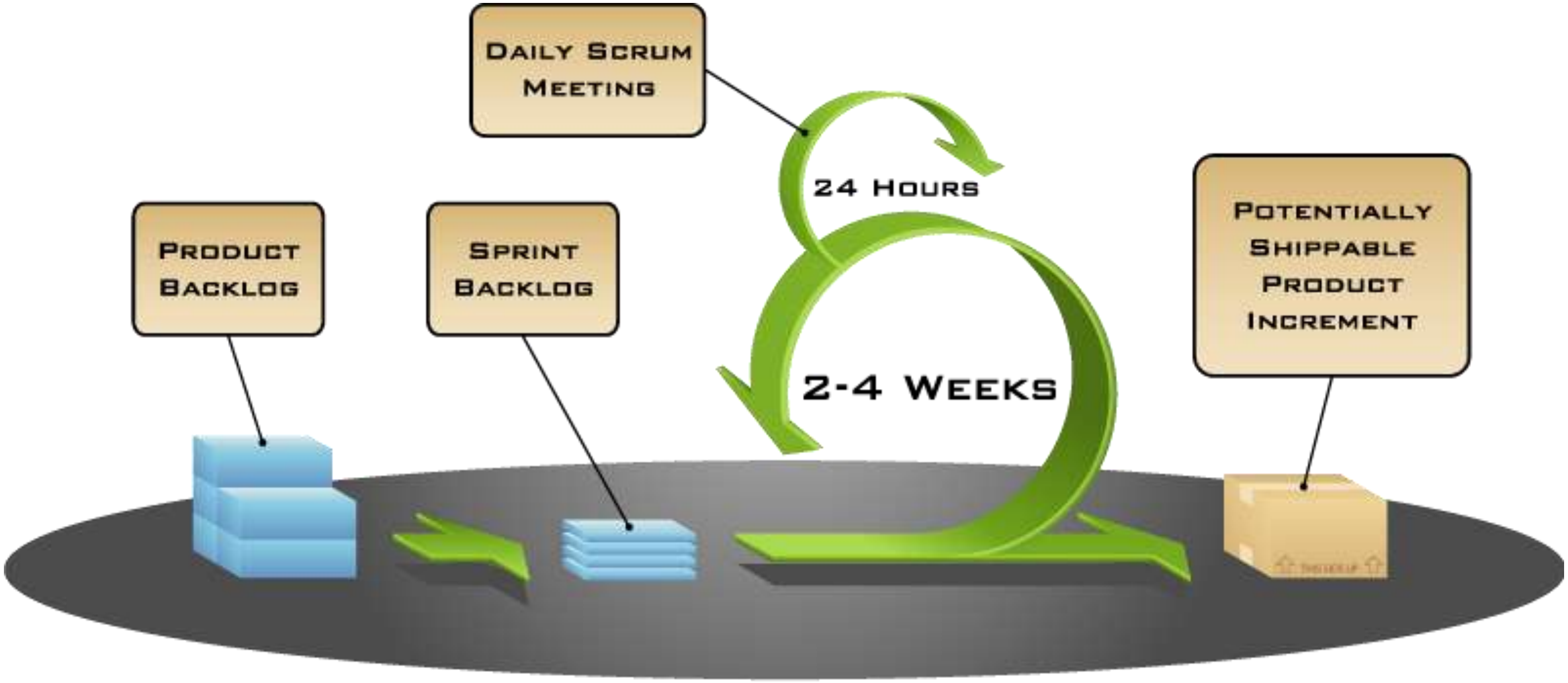
Iteration backlog or **number of stories per iteration**

12 user story

Scrum in a nutshell

So instead of a **large group** spending **a long time** building a **big thing**, we have a **small team** spending a **short time** building a **small thing**.

But integrating regularly to see the whole.



Limit Work-In-Progress

Visualize the Work

Visual Card

Signboard

KANBAN

Measure & Manage Flow

Just-in-time (JIT)

Lean approach to agile **development** Kanban

Similar to Scrum in the sense that you **focus on features as opposed to groups of features** – however Lean takes this one step further again.

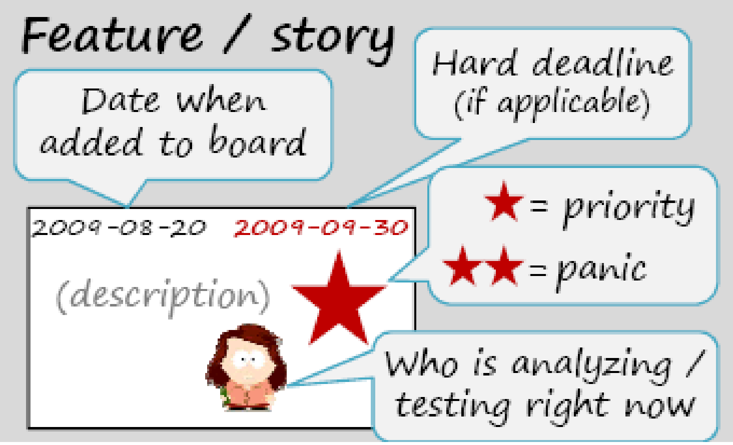
You **select, plan, develop, test and deploy one feature** (in its simplest form) **before you select, plan, develop, test and deploy the next feature**.

Aim is to **eliminate ‘waste’** wherever possible…

Kanban (contd…)

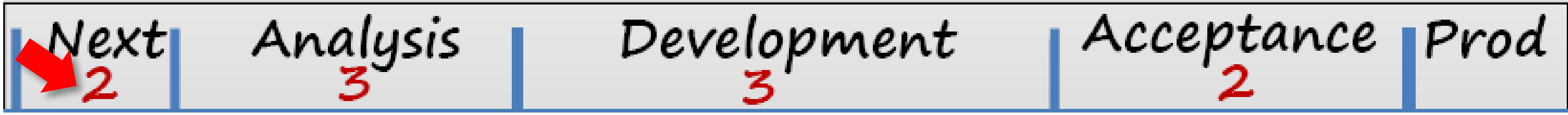
Visualize the workflow

- Split the work into pieces, write each item on a card and put on the wall
- Use named columns to illustrate where each item is in the workflow



Limit WIP (work in progress)

- Assign explicit limits to how many items may be in progress at each stage

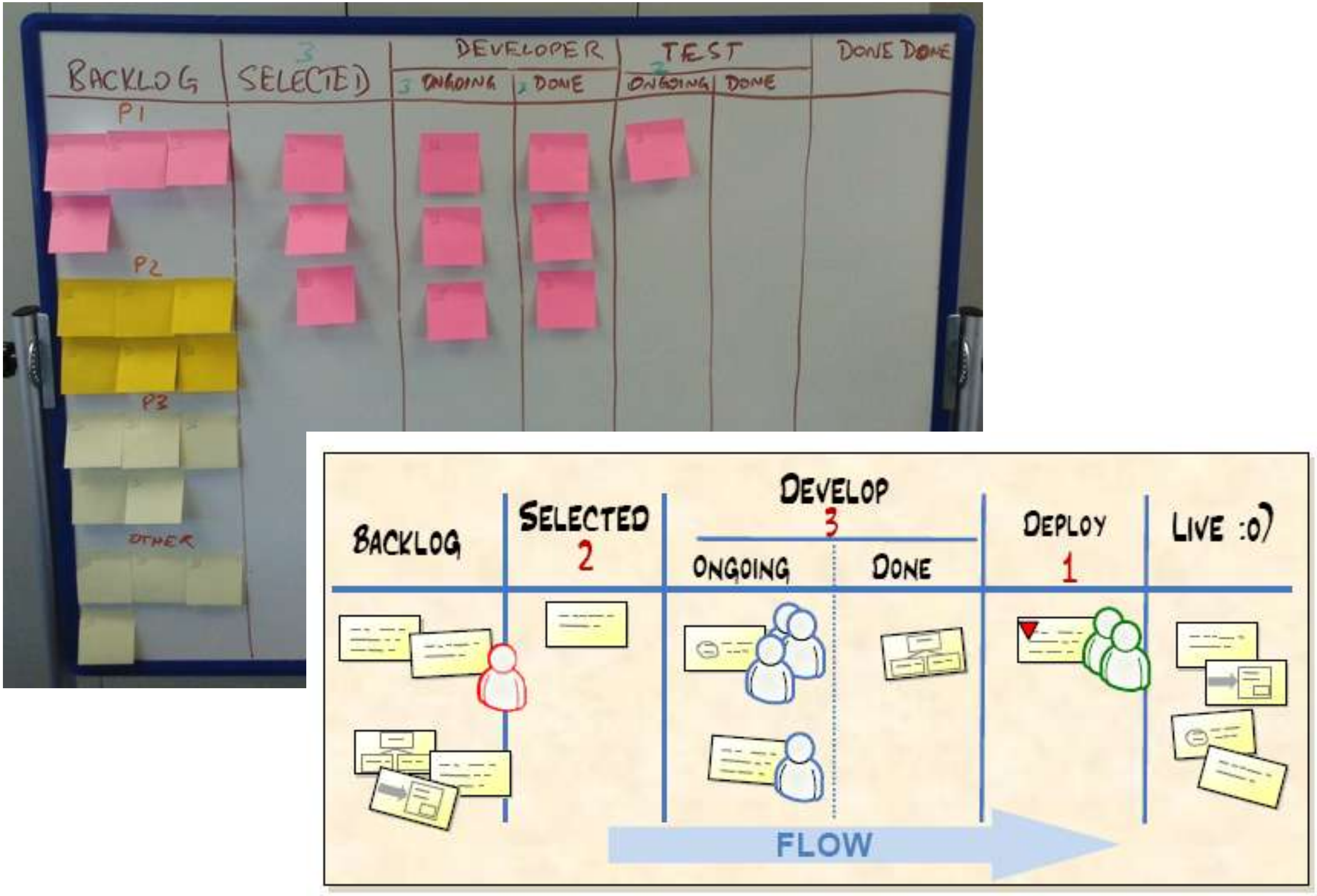


Next	Analysis	Development	Acceptance	Prod
2	3	3	2	

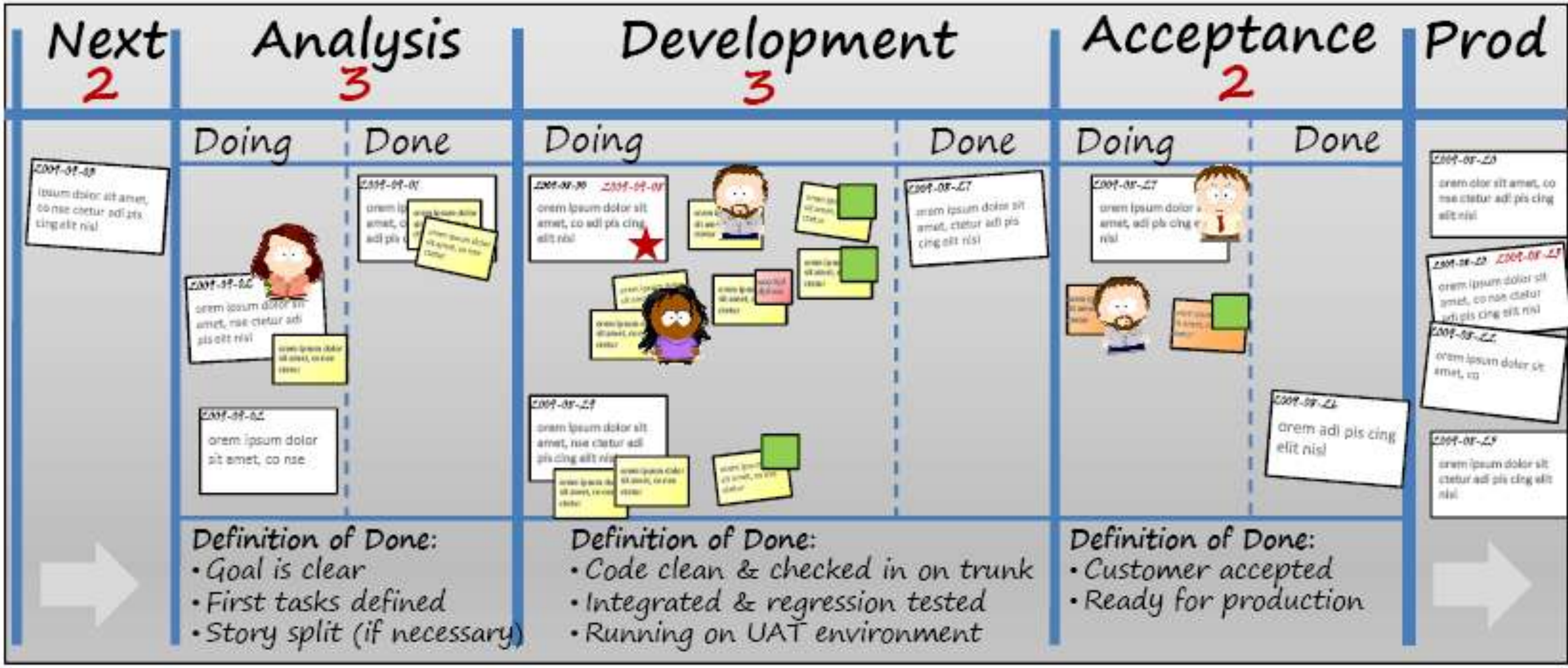
Measure the lead time (average time to complete one item, sometimes called “cycle time”)

- Optimize the process to make lead time as small and predictable as possible

Kanban Board Illustration - I



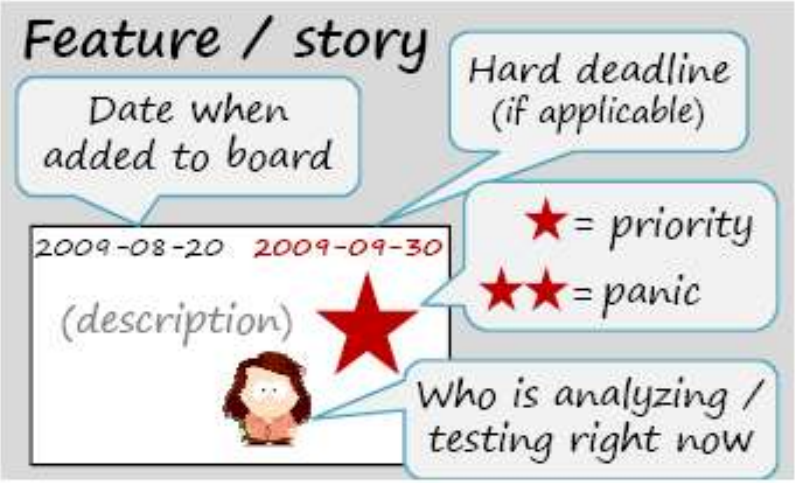
Kanban Board Illustration - II

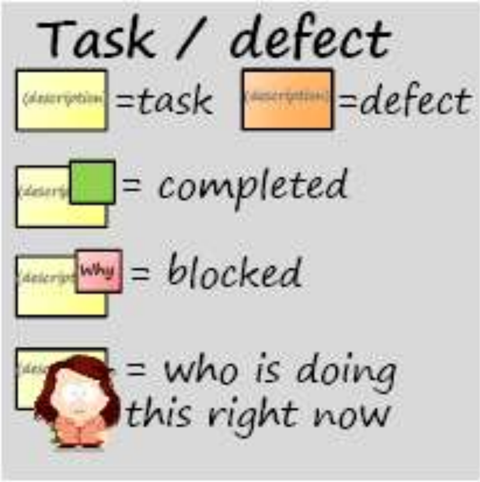


Definition of Done:
- Goal is clear
- First tasks defined
- Story split (if necessary)

Definition of Done:
- Code clean & checked in on trunk
- Integrated & regression tested
- Running on UAT environment

Definition of Done:
- Customer accepted
- Ready for production



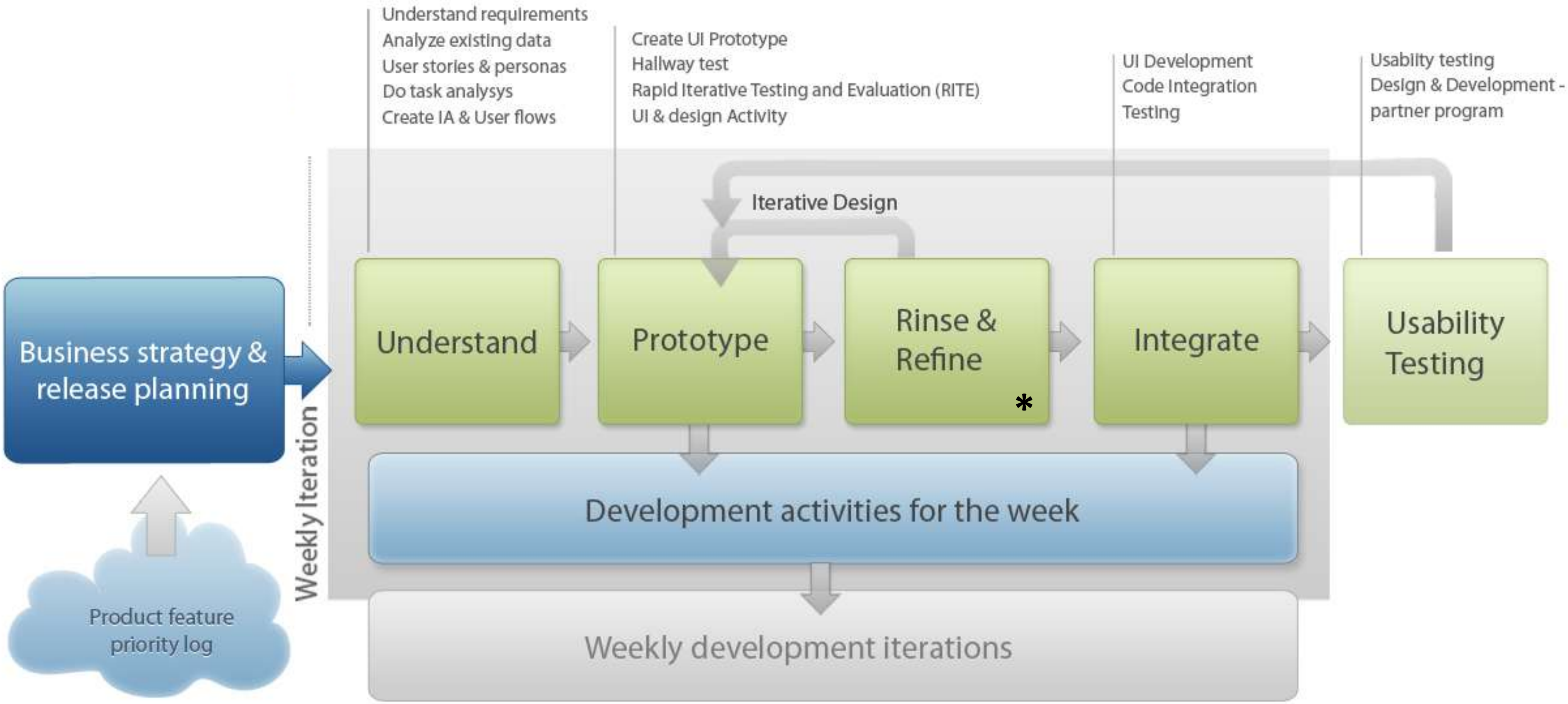


What to pull first

1. Panic features ★★
   (should be swarmed and kept moving. Interrupt other work and break WIP limits as necessary)
2. Priority features ★
3. Hard deadline features
   (only if deadline is at risk)
4. Oldest features

UX adopts Agile

Agile – UX Overlap



Understand requirements
Analyze existing data
User stories & personas
Do task analysys
Create IA & User flows

Create UI Prototype
Hallway test
Rapid Iterative Testing and Evaluation (RITE)
UI & design Activity

UI Development
Code Integration
Testing

Usability testing
Design & Development - partner program

Iterative Design
Business strategy & release planning
Understand
Prototype
Rinse & Refine *
Integrate
Usability Testing
Weekly Iteration
Development activities for the week
Weekly development iterations
Product feature priority log

* Evaluate internally (sales & marketing) and externally (prospects and clients)

Resources

- Agile 101
  http://agile101.net/2009/09/08/the-difference-between-waterfall-iterative-waterfall-scrum-and-lean-in-pictures/
- Kanban and Scrum - making the most of both
  http://www.infoq.com/minibooks/kanban-scrum-minibook
- Kanban kick-start example
  http://www.limitedwipsociety.org/tag/kanban-board/

Thank You