UNIVERSITY INSTITUTE OF COMPUTING

Agile Methodology

(24CAT-656)

Unit-2- Syllabus

Unit-2	Agile	Lecture Hours:10
Agile Project Management	Project Management introduction, Agile Scrum, Project management methodology, Selection of right project management methodology, Continuous integration and continuous delivery (CI/CD) in agile development.	
Scrum	Scrum framework, Scrum Roles, Agile Kanban, Agile Vs. Scrum. Product Backlog, Scrum Practices, Process flow of Scrum Methodologies,\	
Agile Design	Agile Daily Stand-up, Sprint Review meeting vs Daily Stand-up meeting in Agile, Definition of Done, Agile Design, Retrospective in Agile development.	

CONTENT OF THE SYLLABUS

- **TEXT BOOKS**

T1 David J. Anderson and Eli Schragenheim, Agile Management for Software Engineering: Applying the Theory of Constraints for Business Results, Prentice Hall, 2003.

T2 Hazza and Dubinsky, Agile Software Engineering, Series: Undergraduate Topics in Computer Science, Springer, 2009.

T3 Agile Software Development Ecosystems by Jim Highsmith, Addison-Wesley 2002, ISBN 0201760436.

- **REFERENCES**

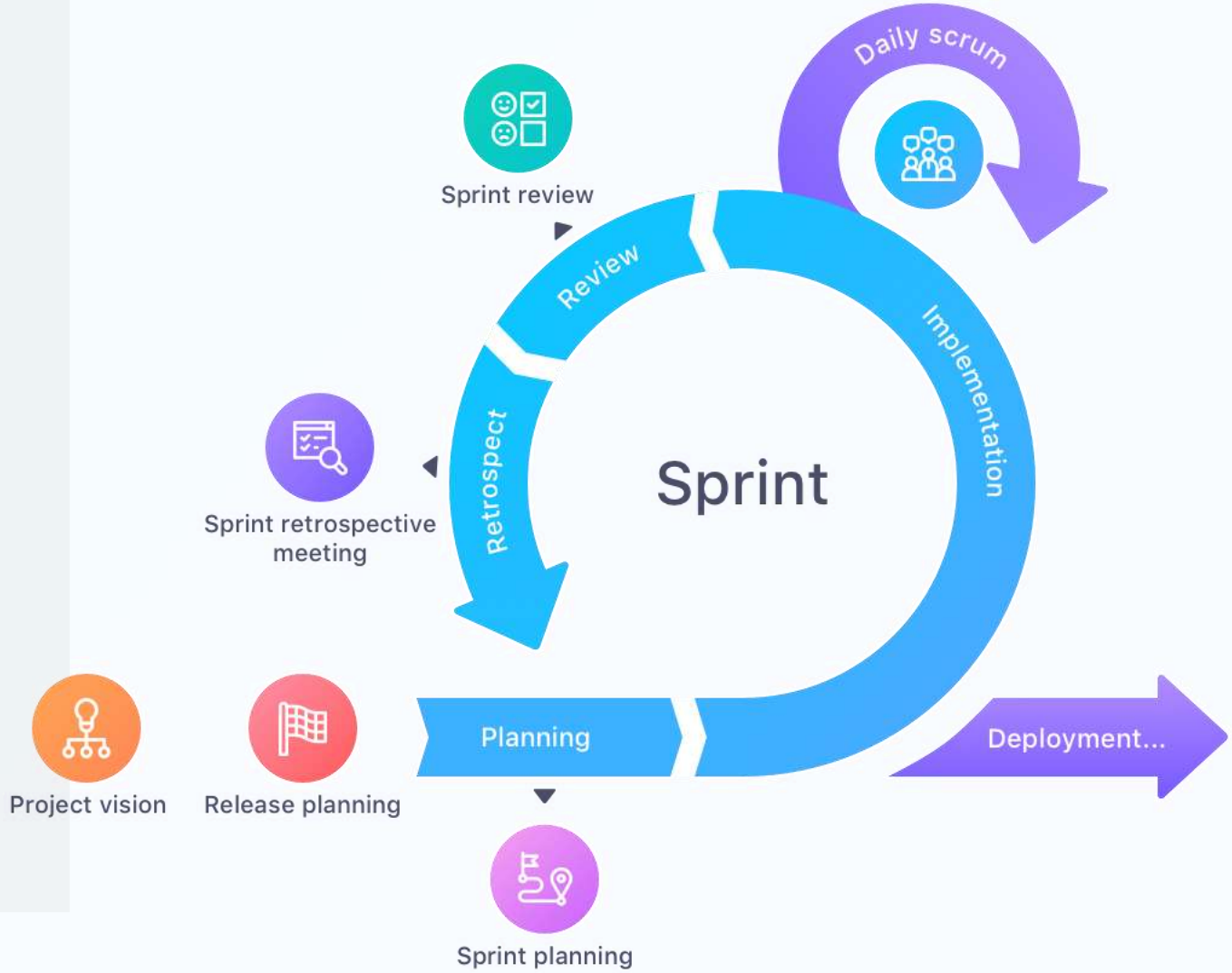
R1 Craig Larman, Agile and Iterative Development: A Managers Guide, Addison-Wesley, 2004.

R2 Kevin C. Desouza, Agile Information Systems: Conceptualization, Construction, and Management, Butterworth-Heinemann, 2007.

Agile Scrum

- **Scrum is a framework** that helps agile teams to work together. Using it, the team members can deliver and sustain the complex product.
- It encourages the team to learn through practice, self-organize while working on the problem. Scum is a work done through the framework and continuously shipping values to customers.
- **Scrum and agile are not the same** thing because Scrum focused on continuous improvement, which is a core foundation of agile. Scrum framework focuses on ongoing getting work done.

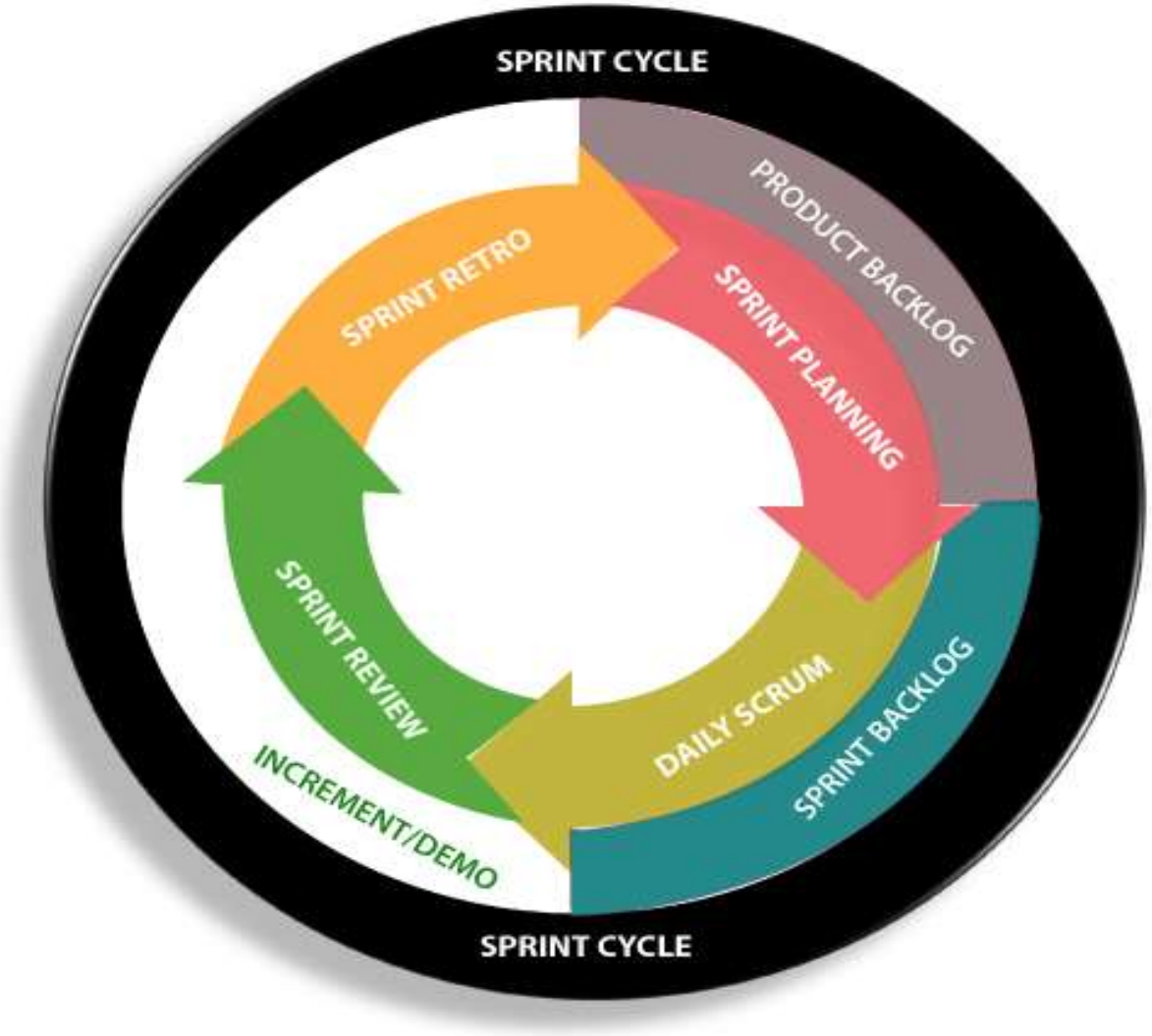
Scrum process



What are sprints?

- With scrum, a product is built in a series of repetition called **sprints**. It breaks down big complex projects into bite-size pieces. It makes projects more manageable, allows teams to ship high quality, work faster, and more frequently. The sprints give them more flexibility to adapt to the changes.
- Sprints are a short, time-boxed period for Scrum team that works to complete a set amount of work. Sprints are the core component of Scrum and agile methodology. The right sprints will help our agile team to ship better software.

What are sprints?



What is sprint plan?

- Sprint plan is an action in Scrum that kicks off the sprint. The primary purpose of sprint plan is to define what can deliver in the sprint. It also focuses on how the work will be achieved. It is done in combination with the whole Scrum team members.
- The sprint is a set of the period where all the work to be done. Before we start the development, we have to set up the sprint. We need to describe how long time is required to achieve the sprint goal and where we are going to start.

Factors affecting Sprint planning

- **The What:** The product owner describes the goal of the sprint and the backlog items which contribute to achieve that goal.
- **The How:** Agile development team plans its necessary work on how to achieve and deliver the sprint goal.
- **The Who:** The product owner defines the goal based on the value that the customers seek. And the developer needs to understand how they can or cannot deliver that goal.
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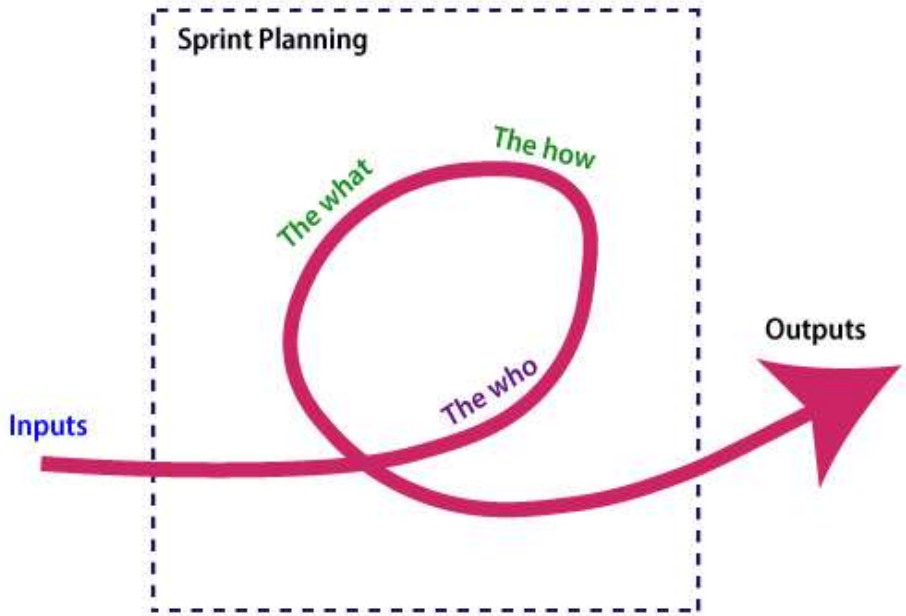

Factors affecting Sprint planning

- **The Inputs:** The product backlog provides the list of input stuff that could potentially be part of the current sprint. The team looks over the existing work done in incremental ways.
- **The Outputs:** The critical outcome of sprint planning is to meet described team goal. The product set the goal of sprint and how they will start working towards the goal.
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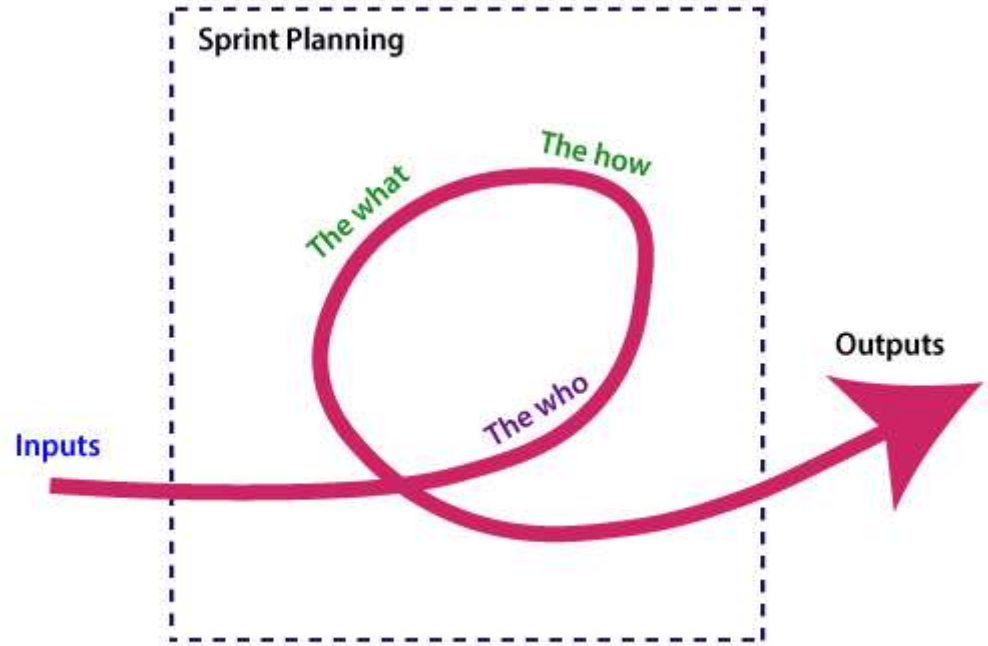

What is the product backlog?

- A product backlog is a registered list of work for the development team. It is driven from the roadmap and its requirements.
- The essential task is represented at the top of the product backlog so that the team member knows what to deliver first.
- The developer team doesn't work through the backlog from the product owner's side and product owner doesn't push the work to the developer team.
- The developer team pulls work from the product backlog.

What is a project management methodology?

- A project management methodology is a set of principles and practices that guide you in organizing your projects to ensure their optimum performance.
- No two projects are exactly the same (even when you're using handy features like project templates to replicate your past successes).
- And when you factor in the different goals, KPIs and production methods of not only different types of teams but also different types of *industries*, it makes sense that there's no one-size-fits-all approach to managing a project.

How do you choose the right project management methodology?

- **Cost and budget:** What sort of budget are you working with? Is there room for that to change if necessary, or is it essential that it stays within these predetermined limits?
- **Team size:** How many people are involved? How many stakeholders? Is your team relatively compact and self-organizing, or more sprawling, with a need for more rigorous delegation?
- **Ability to take risks:** Is this a huge project with a big impact that needs to be carefully managed in order to deliver Very Serious Results? Or is it a smaller-scale project with a bit more room to play around?

How do you choose the right project management methodology?

- **Flexibility:** Is there room for the scope of the project to change during the process? What about the finished product?
- **Timeline:** How much time is allotted to deliver on the brief? Do you need a quick turnaround, or is it more important that you have a beautifully finished result, no matter how long it takes?
- **Client/stakeholder collaboration:** How involved does the client/stakeholder need — or want — to be in the process? How involved do you need — or want — them to be?

The project management methodologies list

1. Waterfall methodology
2. Agile methodology
3. Scrum methodology
4. Kanban methodology
5. Scrumban methodology
6. eXtreme programming (XP) methodology
7. Adaptive project framework (APF) methodology
8. Lean methodology
9. Critical path method
10. Critical chain project management

The project management methodologies list

11. New product introduction (NPI)
12. Package enabled reengineering (PER)
13. Outcome mapping
14. Six Sigma
15. PMI's PMBOK
16. PRINCE2 methodology
17. Rapid application development (RAD) methodology

THANK YOU