# Agile Methods III

**Overview**

- Today we'll look at **Kanban**, another lean agile method.
  - The Kanban method used in software development was adapted from the lean manufacturing Kanban method that was used at Toyota
- The content of today's lecture is based on the Kanban resources available at:
  - https://www.atlassian.com/agile/kanban
  - https://kanbanize.com/kanban-resources/getting-started/what-is-kanban

# What is Agile?

- Agile is a set of values and principles that guide and shape development.
- There are a number of agile development methods that embody these values and principles in their practices:
  - Extreme Programming (XP)
  - Scrum
  - Kanban
  - Crystal Agile Framework
  - Dynamic System Development Method (DSDM)
  - Feature-Driven Development (FDD)

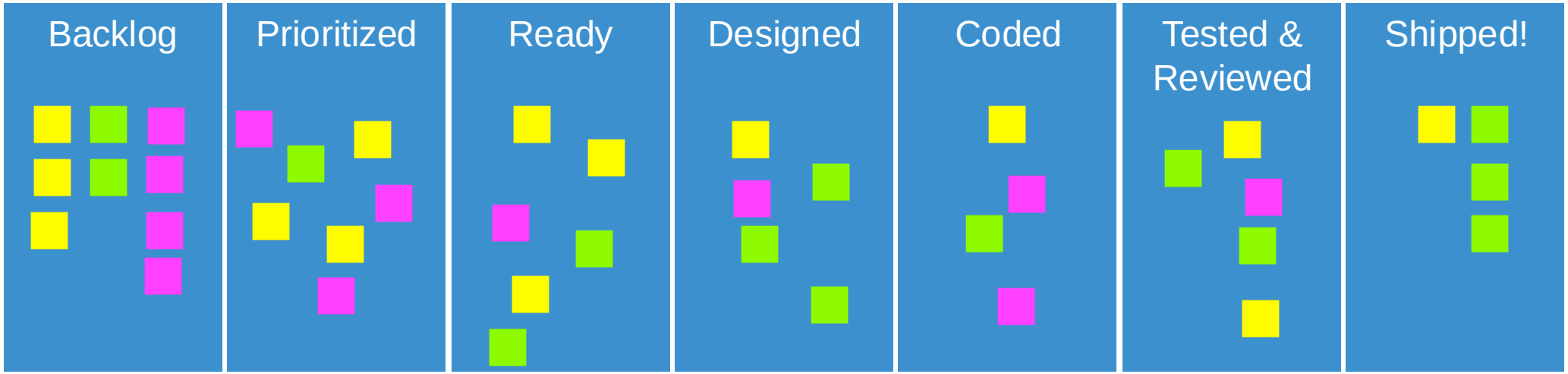
# Kanban

"Kanban is all about visualizing your work, limiting work in progress, and maximizing efficiency(or flow). Kanban teams focus on reducing the time it takes to take a project(or user story) from start to finish. They do this by using a kanban board and continuously improving their flow of work."

– https://www.atlassian.com/agile/kanban/kanban-vs-scrum

# Kanban Overview

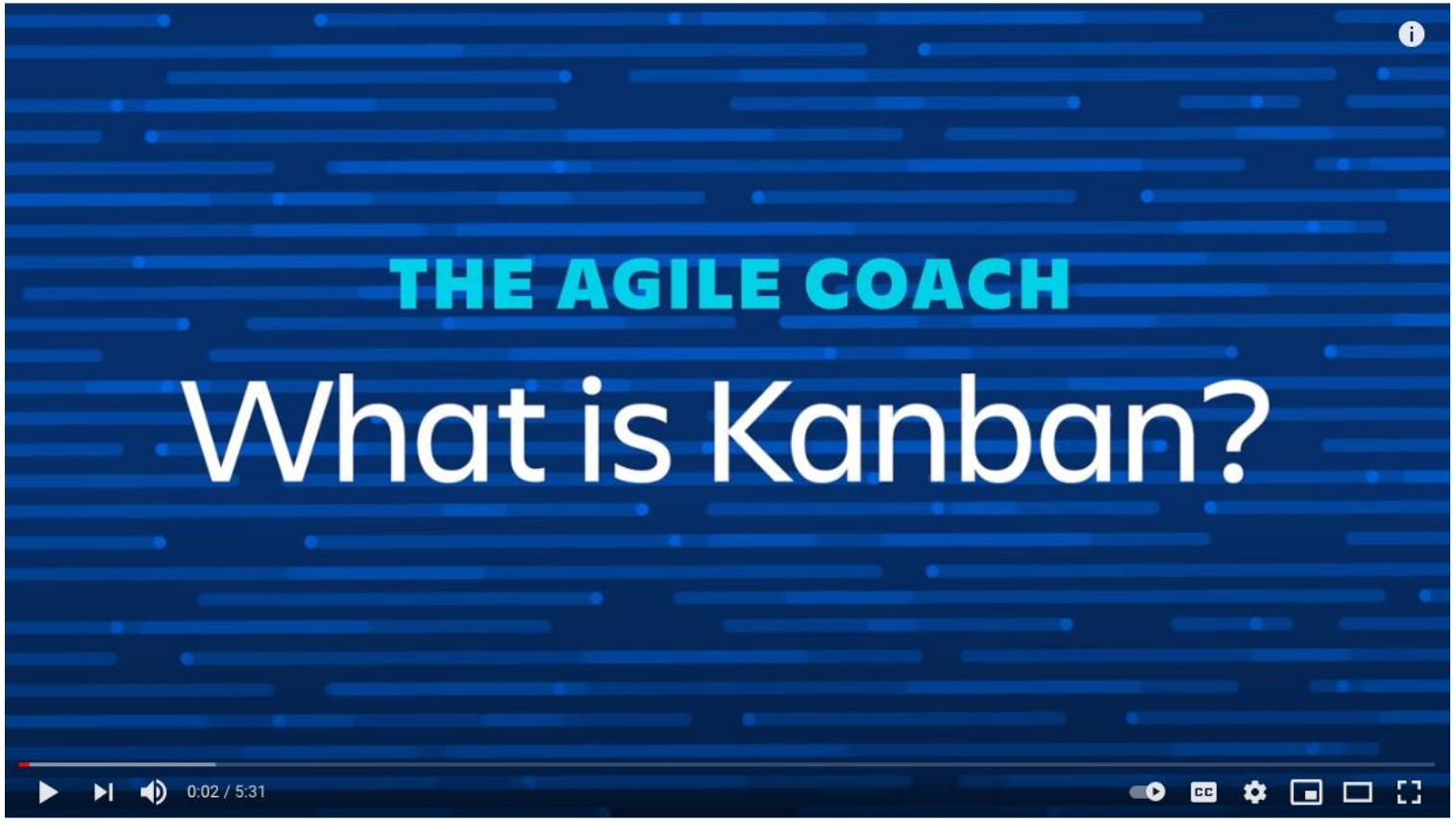
- A card is used to represent each work item (task) in a project
- The cards are organized on a Kanban board
  - Multiple columns each represent stages of workflow
  - The stages of workflow represented in the board will vary across projects
  - Done rules are used to move cards to the next step



# Kanban Overview

- The Kanban method ascribes to the principle of continuous release and collective ownership
  - Releases can happen at anytime and should be frequent
  - The entire team is responsible for delivery and for ownership of the Kanban board
- Bottlenecks in a workflow stage can be managed with Work in Progress (WIP) limits – maximum number of cards in a stage. When a WIP limit is reached the team works collectively to move items in that stage forward.

# What is Kanban?

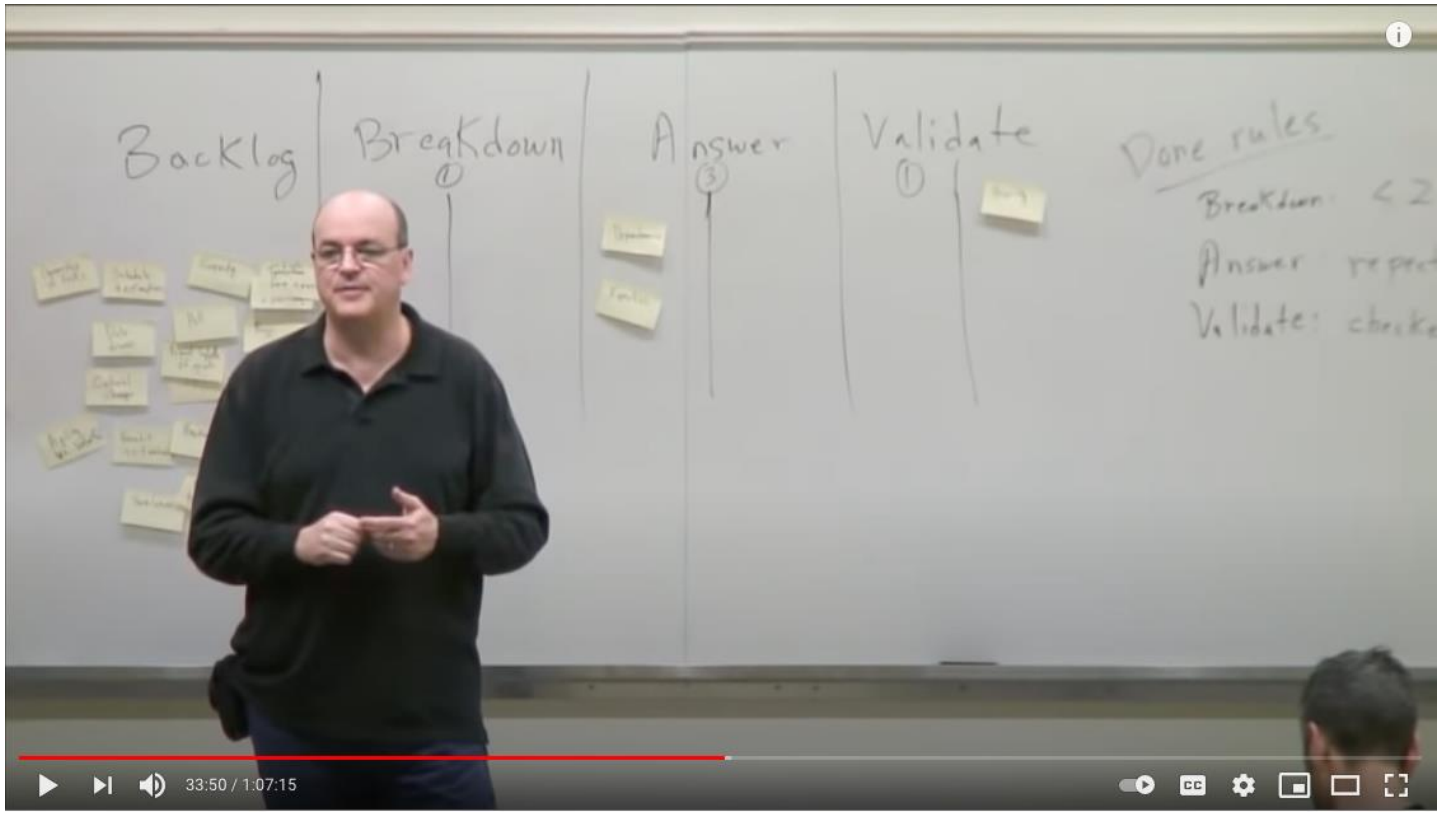


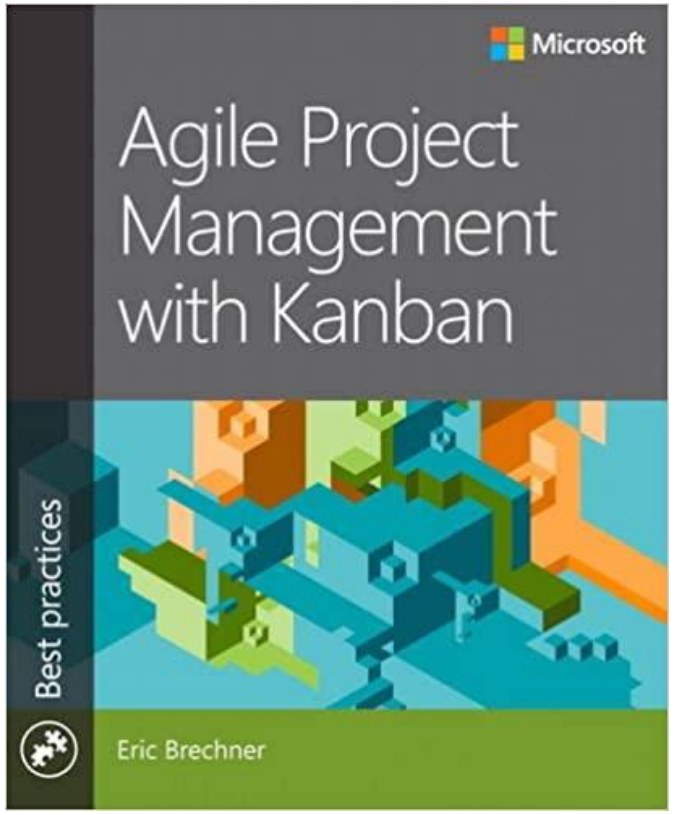

https://www.youtube.com/watch?v=iVaFVa7HYj4

# Measuring Success in Kanban

- The key Kanban metrics are:
  - Lead time: total time from when the client requests an item to when it is done
  - Cycle time: total time it takes for a work item/task to move through the workflow
  - Cumulative Flow Diagram (CFD): visualizes the numbers of work items in each stage over time. A CFD is used to identify workflow bottlenecks and understand the amount of work at each stage

# An Example of Kanban from Microsoft




https://www.youtube.com/watch?v=CKWvmiY7f_g

# Scrum vs. Kanban

| | Scrum | Kanban |
|---|---|---|
| **Cadence** | Sprints (1-4 weeks) | Continuously |
| **Release Methodology** | At the end of each sprint | Continuously |
| **Roles** | Product owner, Scrum master, developer | - |
| **Metrics** | Velocity | Lead time, cycle time, CFD, WIP |
| **Change Philosophy** | Changes made between sprints | Change happens anytime it is needed |

Source: https://www.atlassian.com/agile/kanban/kanban-vs-scrum

# Agile Methods III

**Summary**

- In general, agile methods have become a dominant software development approach
- Kanban is a lean agile method that is built around the use of a Kanban board and maximizing flow.

**References**


- https://www.atlassian.com/agile/kanban
- https://kanbanize.com/kanban-resources/getting-started/what-is-kanban