Agile Management of Software Development

Dictionary

Search for a word

ag·ile

/ˈajəl/

adjective

1. able to move quickly and easily.
   "Ruth was as agile as a monkey"
   synonyms: nimble, lithe, spry, supple, limber, sprightly, acrobatic, dexterous, deft, willowy, graceful, light-footed, nimble-footed, light on one's feet, fleet-footed; More

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2. relating to or denoting a method of project management, used especially for software development, that is characterized by the division of tasks into short phases of work and frequent reassessment and adaptation of plans.
   "agile methods replace high-level design with frequent redesign"

Agile Project Management for Software Development

Senior Design II

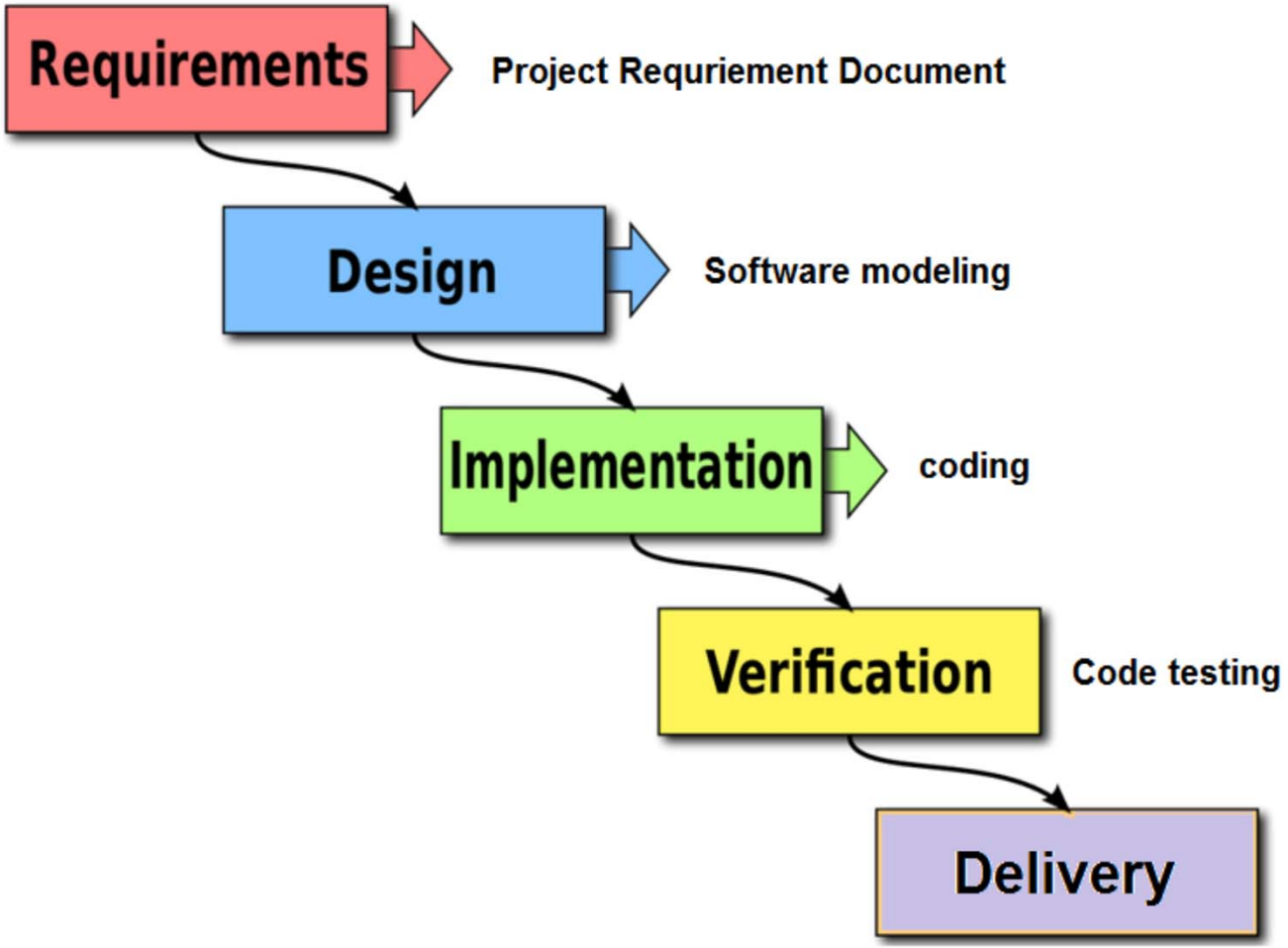
Electrical Engineering and Compute Science

Software Development

- Each Team project has software (coding) component
- Common Problems
  - Start big
  - Good model and good design
  - Curse of complexity
  - Incomplete software
  - Failed Delivery

Models for Software Development

- Waterfall Model



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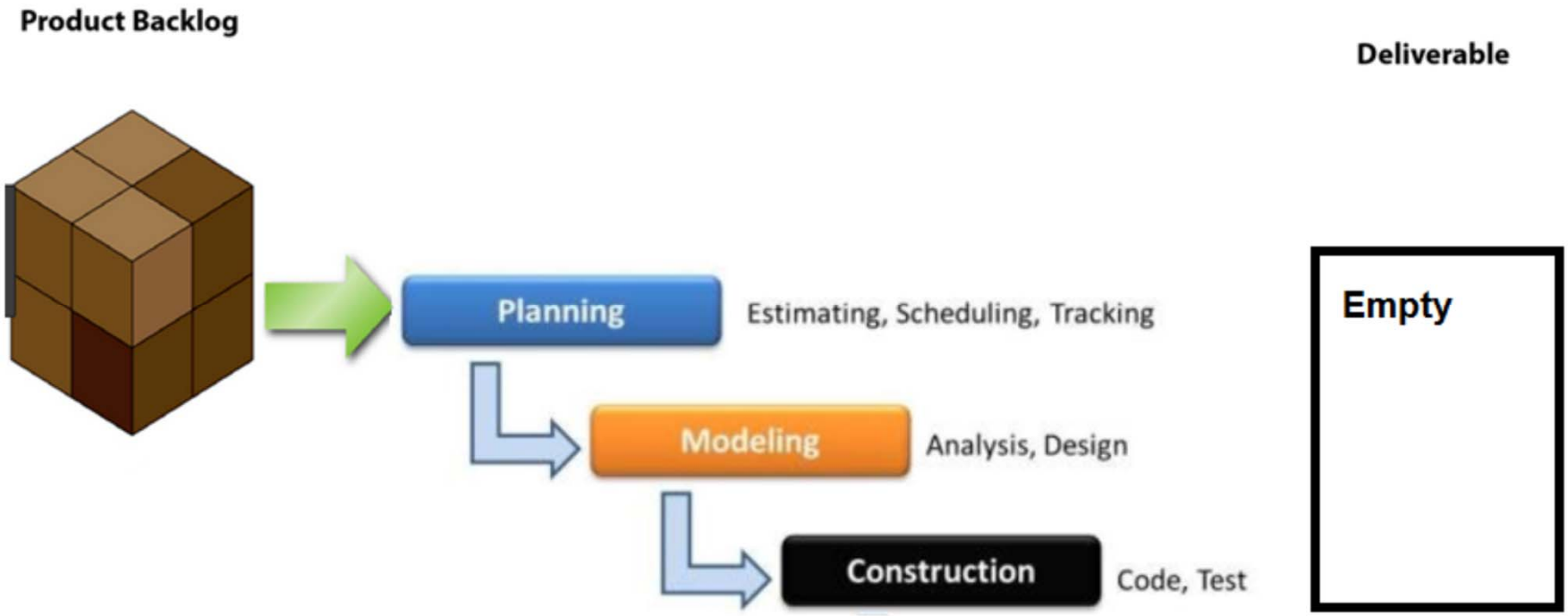
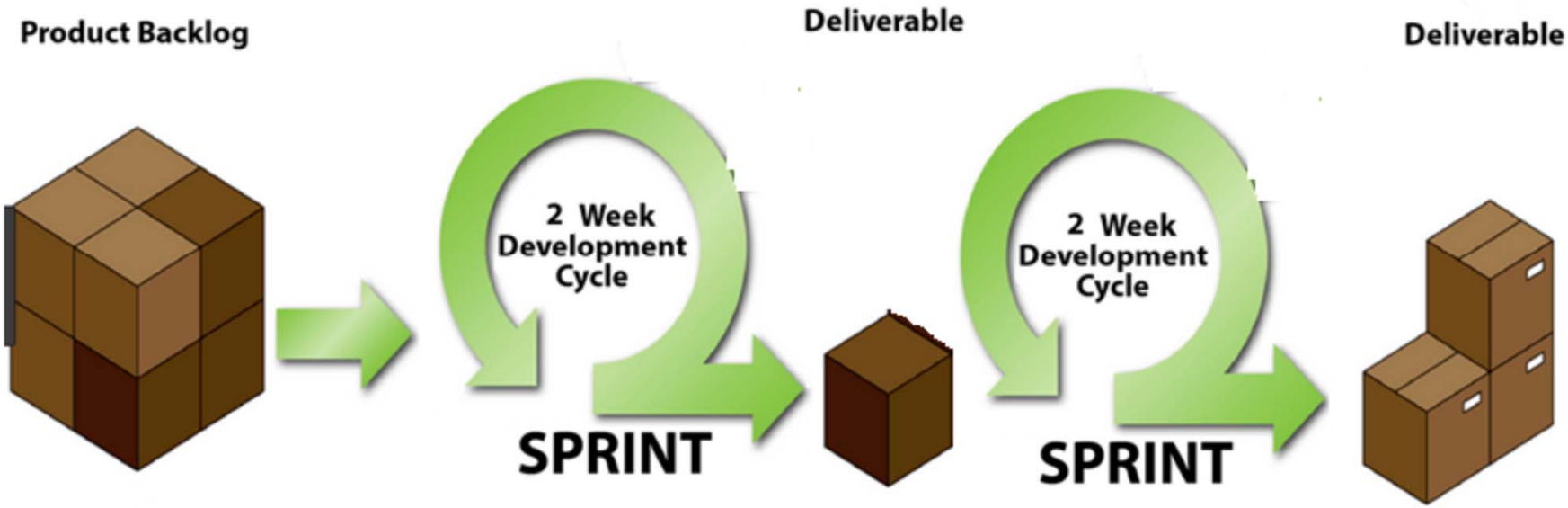
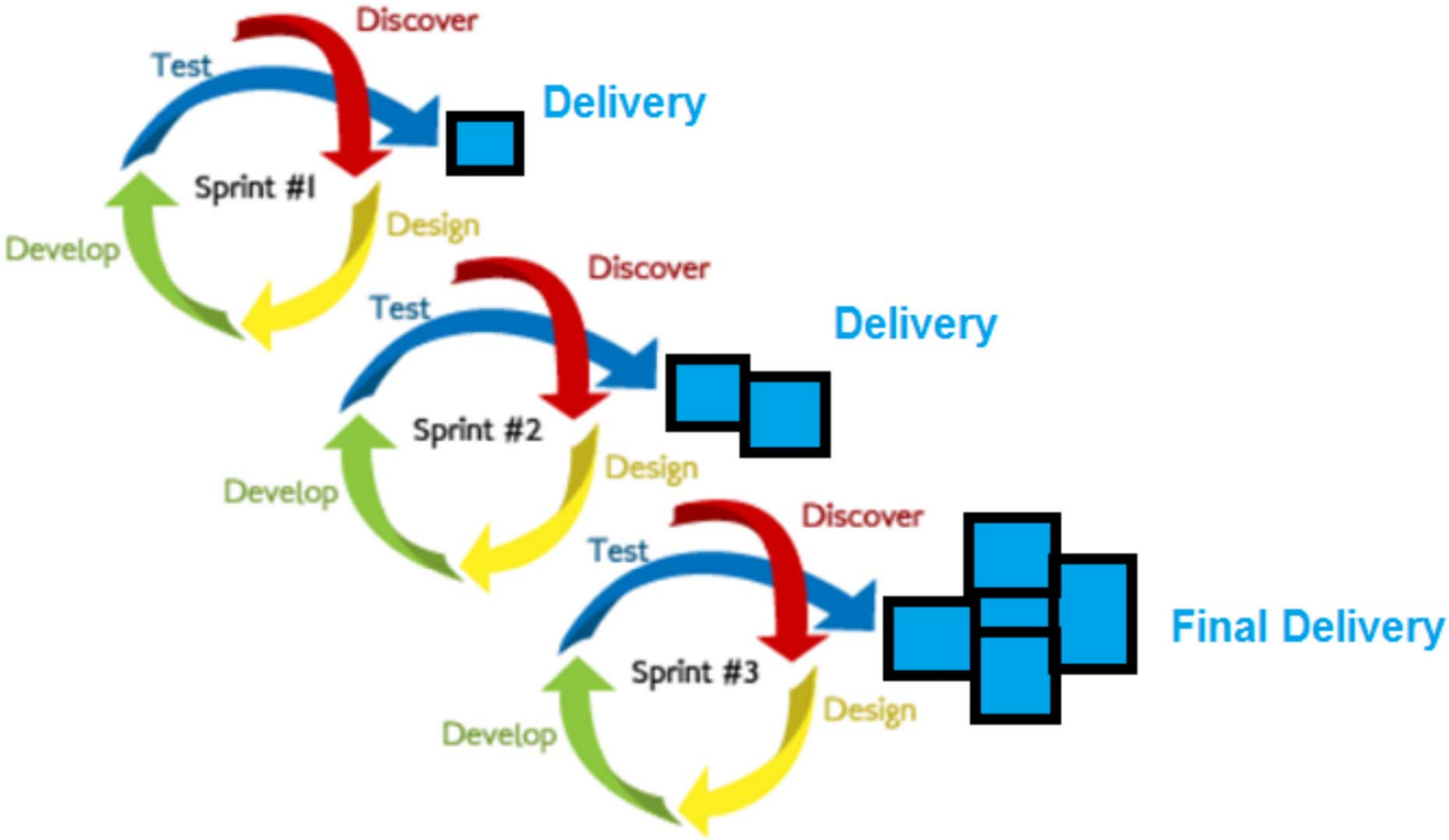


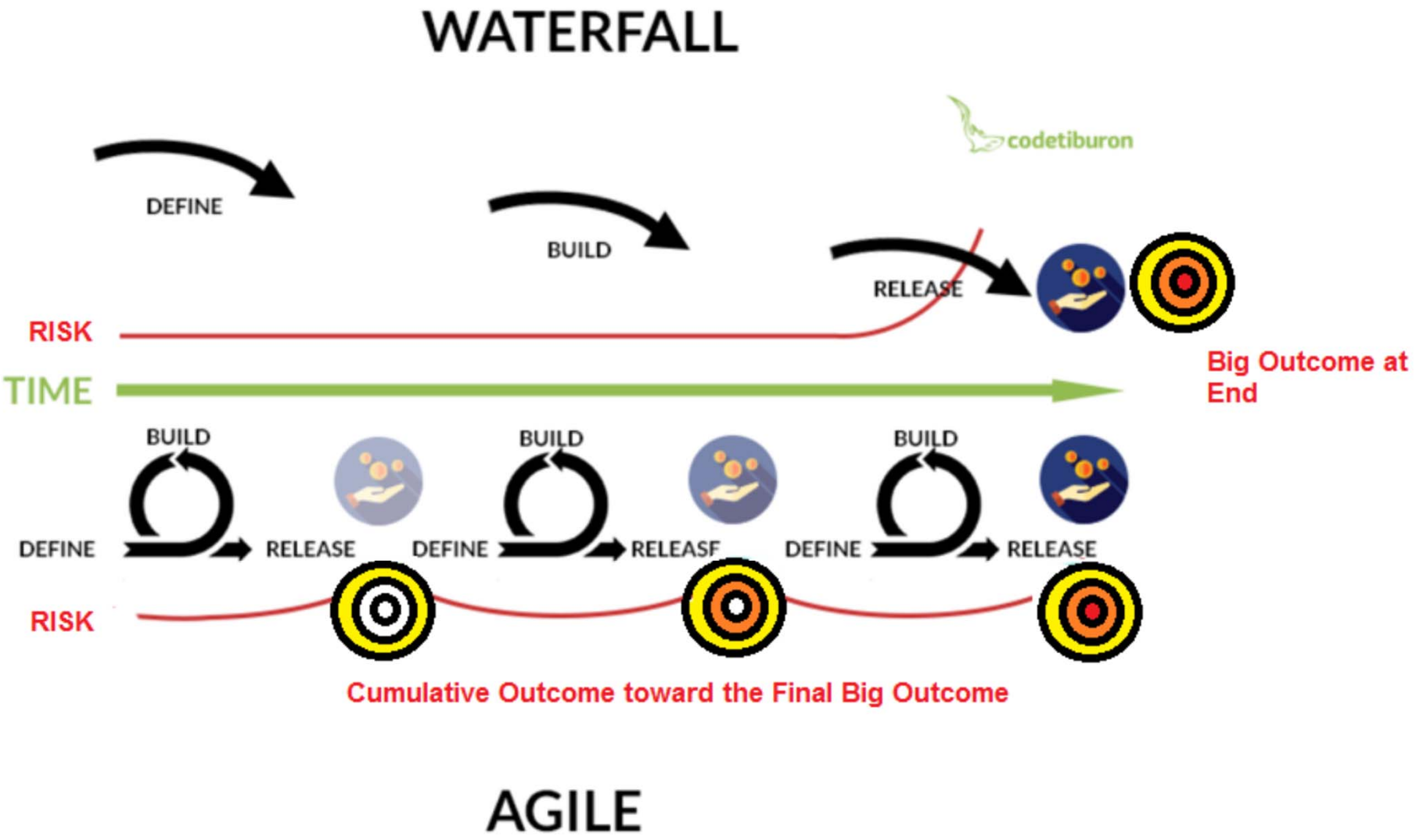
Agile Model


Product Backlog
Deliverable
Deliverable
2 Week Development Cycle
SPRINT
2 Week Development Cycle
SPRINT

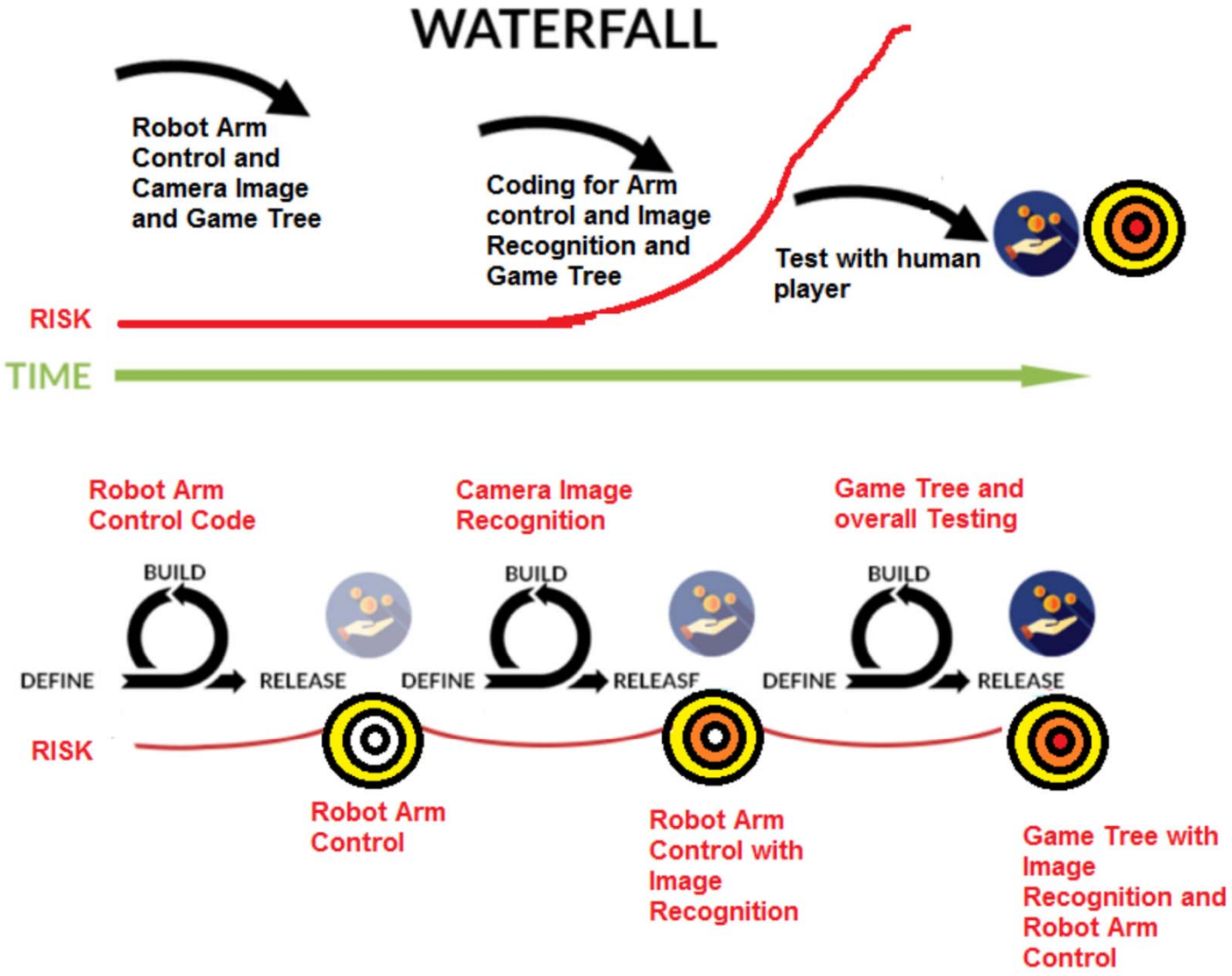
Agile Model


Discover
Test
Delivery
Sprint #1
Design
Develop
Discover
Test
Delivery
Sprint #2
Design
Develop
Discover
Test
Final Delivery
Sprint #3
Design
Develop

Waterfall vs Agile

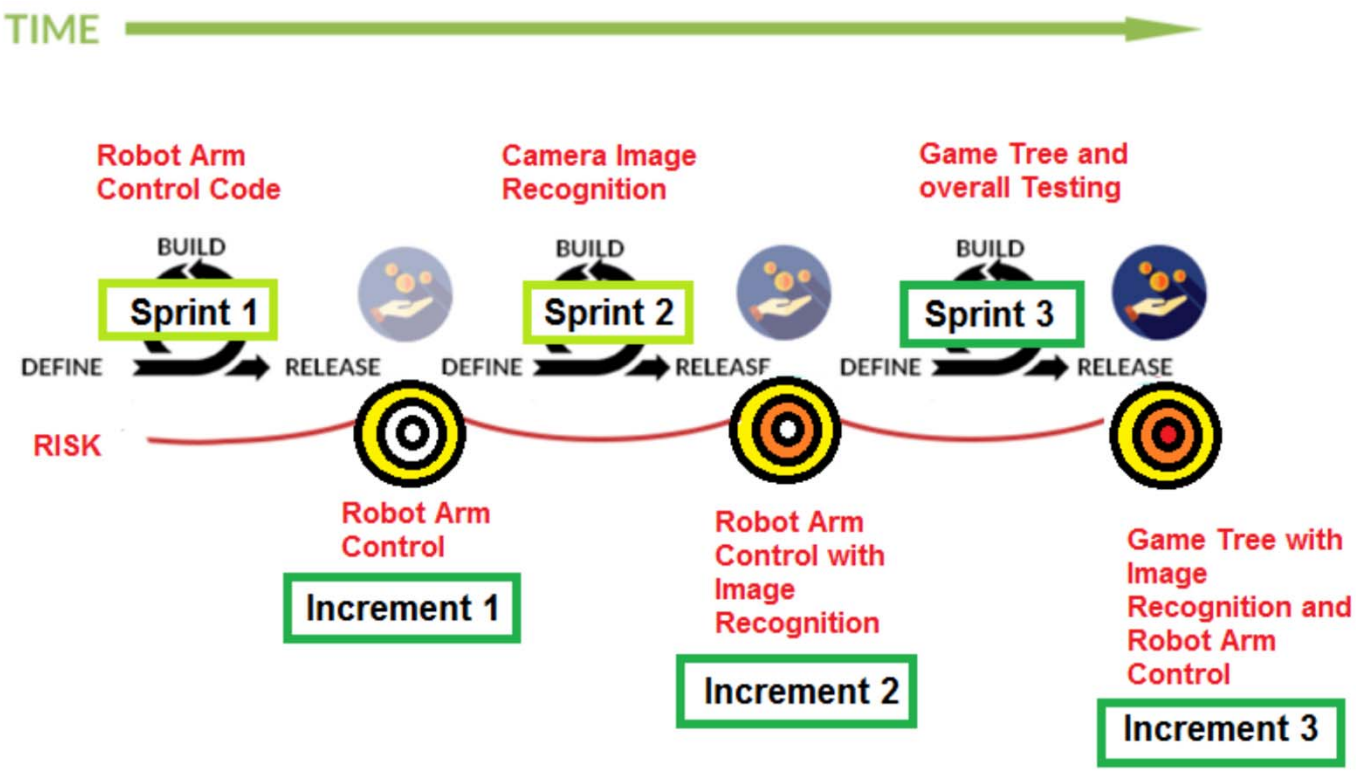


Waterfall vs Agile (Illustration with Terminator project)



Agile Management

- **Essence**
  - **Sprint**: Short Iteration (2 weeks in the class)
  - **Increment**: Some shippable (deliverable or class demonstrable) functionality



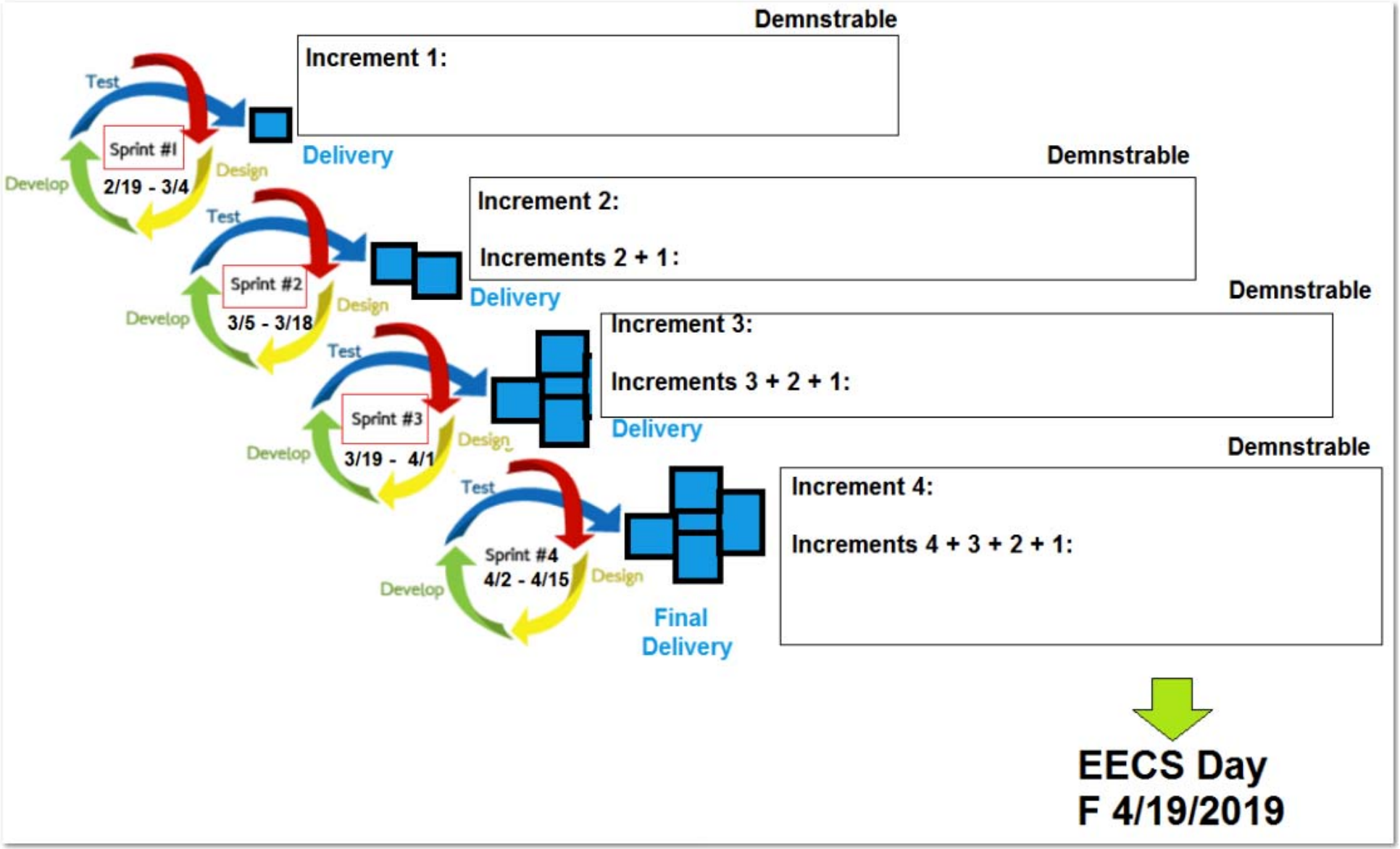
Agile Management

- Agile Workflow
  - Sprint 0: Problem Statement, Design Requirement (for the entire product), Design Requirement (for software); Divide software into a few small pieces
  - Sprint 1: A small piece > design and build > test > showcasing the increment 1
  - Sprint 2: Another small piece > design and build > connect to increment 1 . > test> showcasing the increment 2
  - Sprint 3 > Sprint 4 > ...
  - Final Product

Agile Management

- Advantages
  - Cyclic iterative process
  - Coordinated and organized with specialists (assigned students)
  - Value-driven prioritization: important component has to be prioritized for the entire software
  - Continuous incremental delivery and continuous integration
  - On budget, on goal, and on-time delivery

Class Activity for Agile Management of Software Development – for each team

- Specify the software requirement of the team project/product
- Describe the final software deliverables (in the product)
- Divide the software in to a few segments/components
- Apply Sprint and Increment every 2 weeks
- From Feb 19 (After 2nd progress presentation)
- Sprint 1: Feb 19 – Mar 4
- Sprint 2: Mar 5 – Mar 18
- Sprint 3: Mar 19 – Apr 1
- Sprint 4: Apr 2 – Apr 15
- Increment 1
- Increment 2 + Increment 1
- Increment 3 + Increment 2 + Increment 1
- Increment 4+ Increment 3 + Increment 2 + Increment 1

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