Collaborative Software Development

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Disclarimer!
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Introduction

Projects

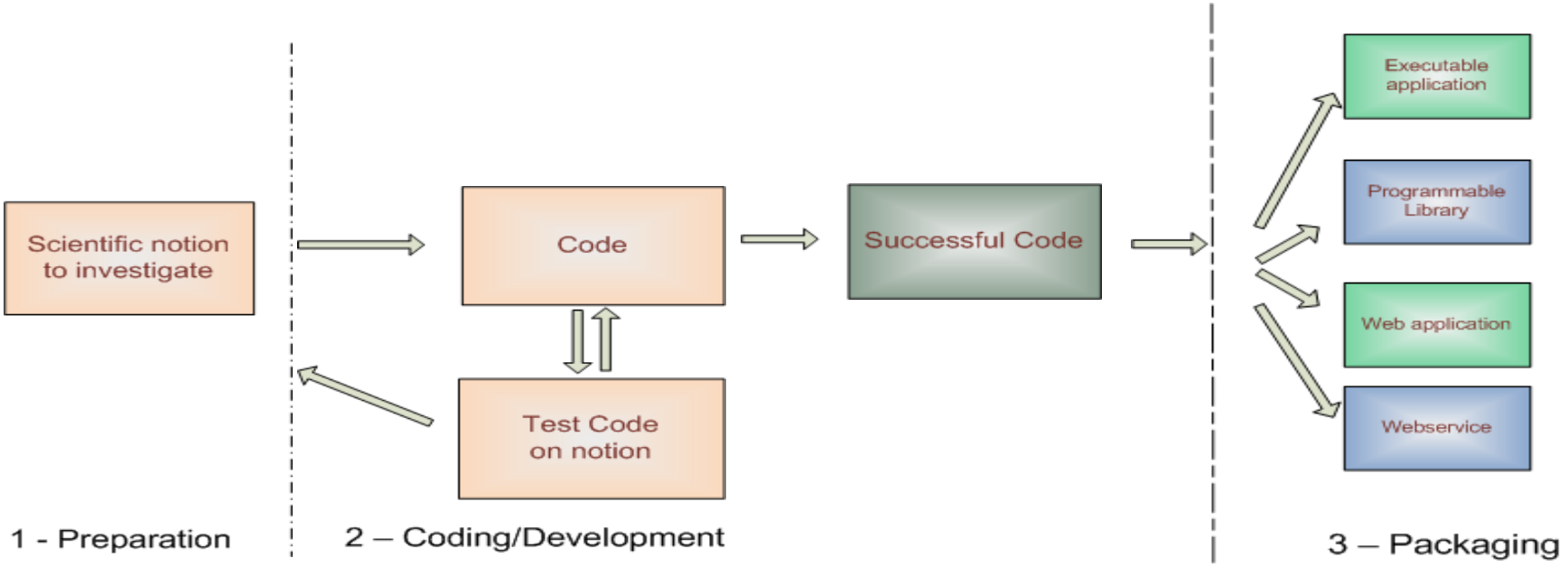
Software Project Life Cycle

Agile Methodology

An example

Summary

Introduction: Academic software



Introduction: Customer need driven software

- ✓ Customer has some requirement they are willing to pay for
- ✓ Project is defined, contract signed
- ✓ Software is:
  - Developed
  - Tested
  - Deployed
  - Maintained
  - Evolved

Introduction: Start ups / Product development

- ✓ Have software idea / competence to be marketed
- ✓ Raise capital
- ✓ Software is:
  - Developed
  - Tested
  - Deployed
- ✓ Market product
  - Maintain
  - Evolve

Introduction: A mixture of domains

Domain Knowledge
- Science
- Finance
. . .

Computing
- Bare metal
- Hypervisor
- Virtual machines
- Containers
- HPC
. . .

Management
- Project management
- Team management
. . .

Critical Factors
✓ Mindset
✓ Skillset
✓ Toolset

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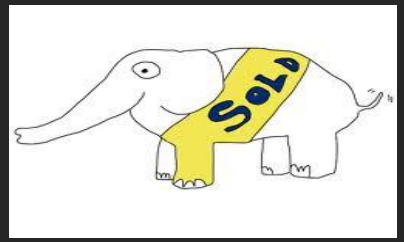
Projects: What is a project ?

- ✓ Has a specific set of objectives
- ✓ Is a structure to complete a specific set of deliverables
- ✓ Has specific dates (start . . . end)
- ✓ Has a specific set of resources (developer hands, budget . . .)

Projects: Generic Stages

✓Initiation



✓Planning

✓Execution

✓Closure

✓Reflection

Projects: Views on project management

1. Common beliefs
   - Management views
     - Is a way to control people
     - Is a way to micro manage the teams
   - Team views
     - A way for ”management” to control what we do
     - Is unnecessary bureaucracy

2. It should be a way for:
   - Efficient processes and procedures
   - Planning & resource allocation
   - Effective communication
   - Execution
   - Collaborative success !

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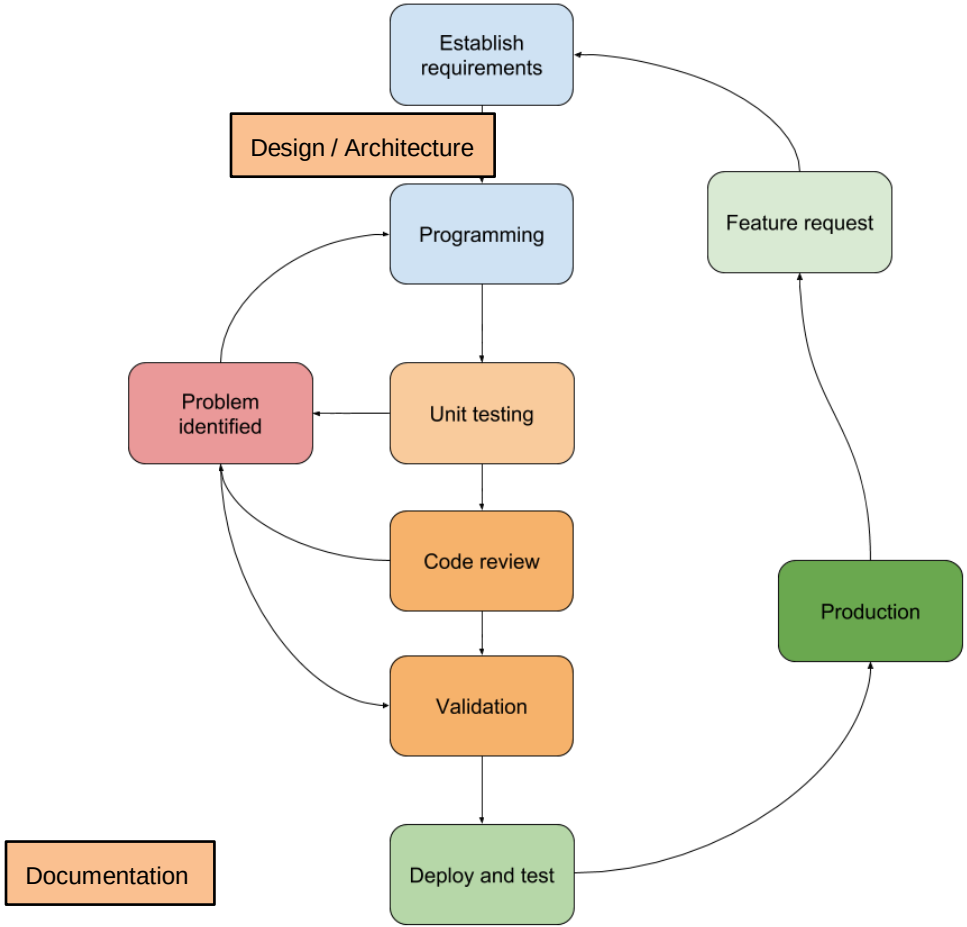
Ideal Life cycle



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Agile: Definition

https://www.dictionary.com/browse/agile

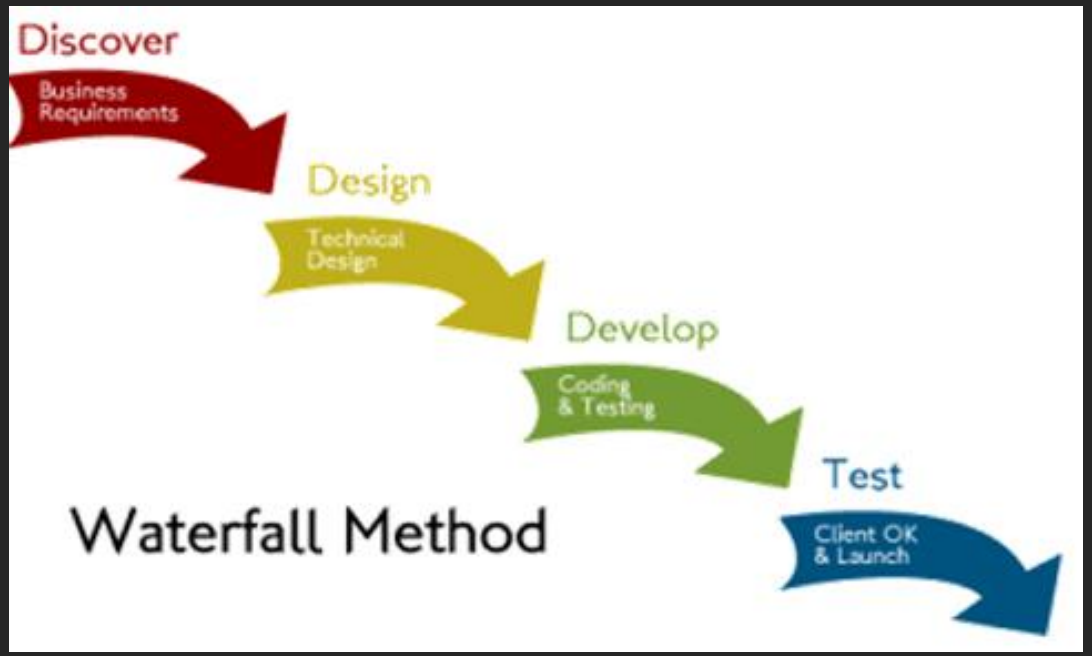
agile [aj-uhl, -ahyl]

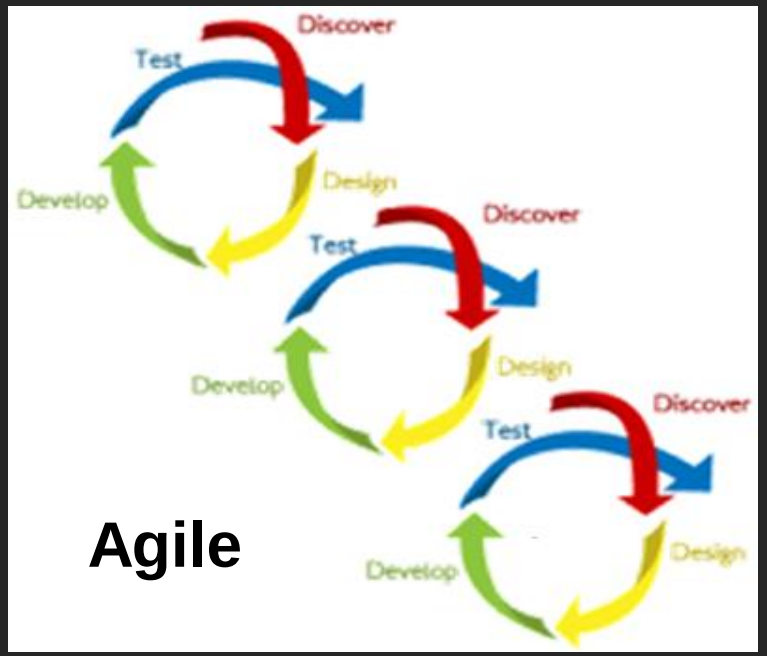
SYNONYMS | EXAMPLES | WORD ORIGIN

adjective

1. quick and well-coordinated in movement; lithe:
   an agile leap.
2. active; lively:
   an agile person.
3. marked by an ability to think quickly; mentally acute or aware:
   She's 95 and still very agile.

Agile: Software development

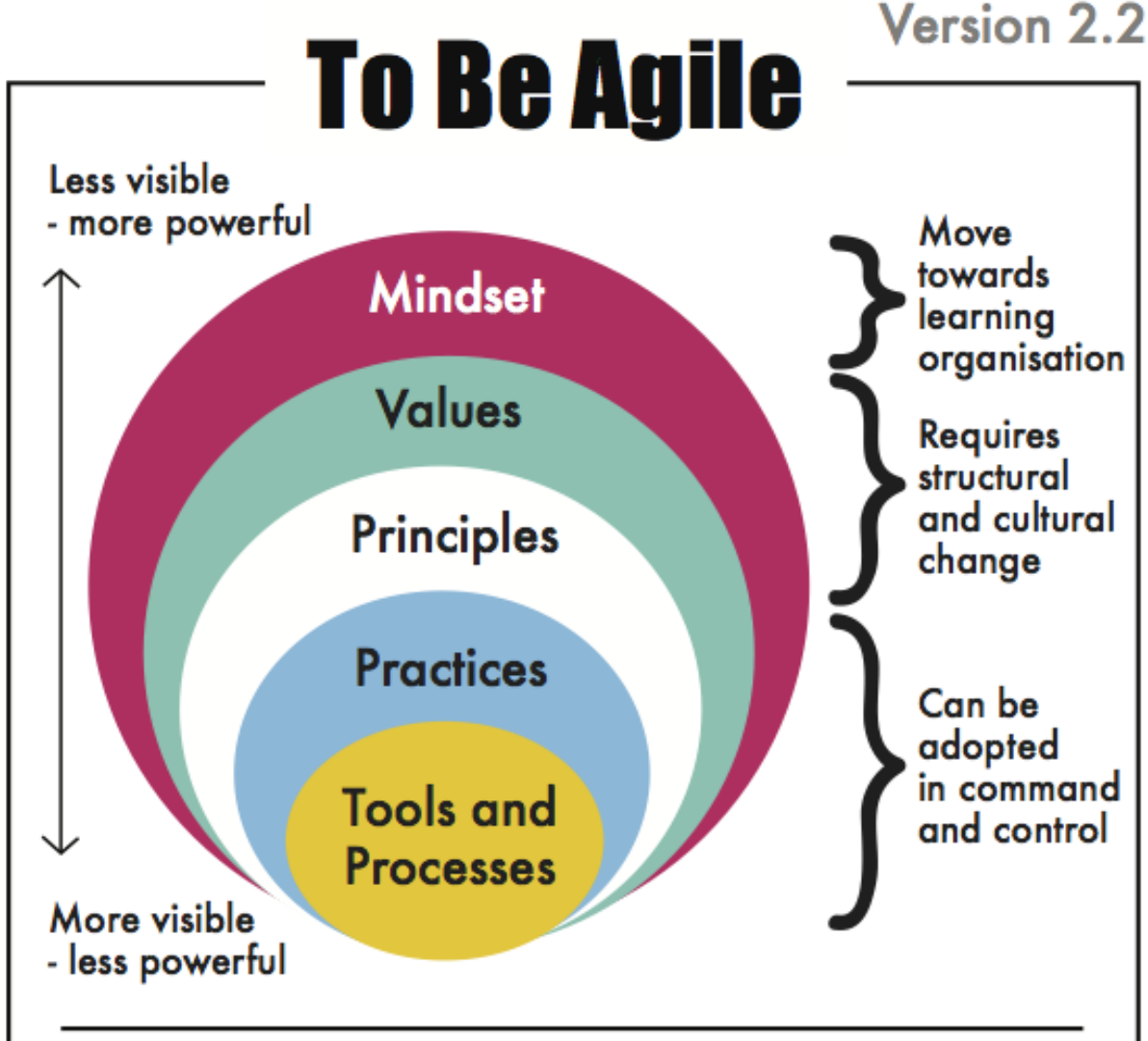




Agile: so much myth

1. Agile is new
2. Implementing agile is easy
3. Agile gives instant benefit
4. Agile means no documentation
5. Agile means "hacking" code together with little thought of architecture or design
6. Agile is a silver bullet
7. To be agile, just read a book
8. Agile only relates to software delivery
9. Agile should replace everything all at once in a big bang transformation
10. Agile means no planning, just do it ✓

https://www.computerweekly.com/opinion/The-top-10-s-about-agile-development



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An example

1. Define a project
   i. Master document
   ii. Features document (test outline)
2. Collaboration strategy
   i. Setup a task flow system (Trello / JIRA)
      - Team, board, cards (focus on flow, not keeping lists)
   ii. Setup an engagement tool (Slack / Gitter.im)
      - Team / Group, channel (resist temptation to use it as a documentation tool)
   iii. Efforts harmonization strategy
      - Routine meetings, Sprints, stand-ups (stick to your routines, change them consciously)
3. Rest of the stuff . . .

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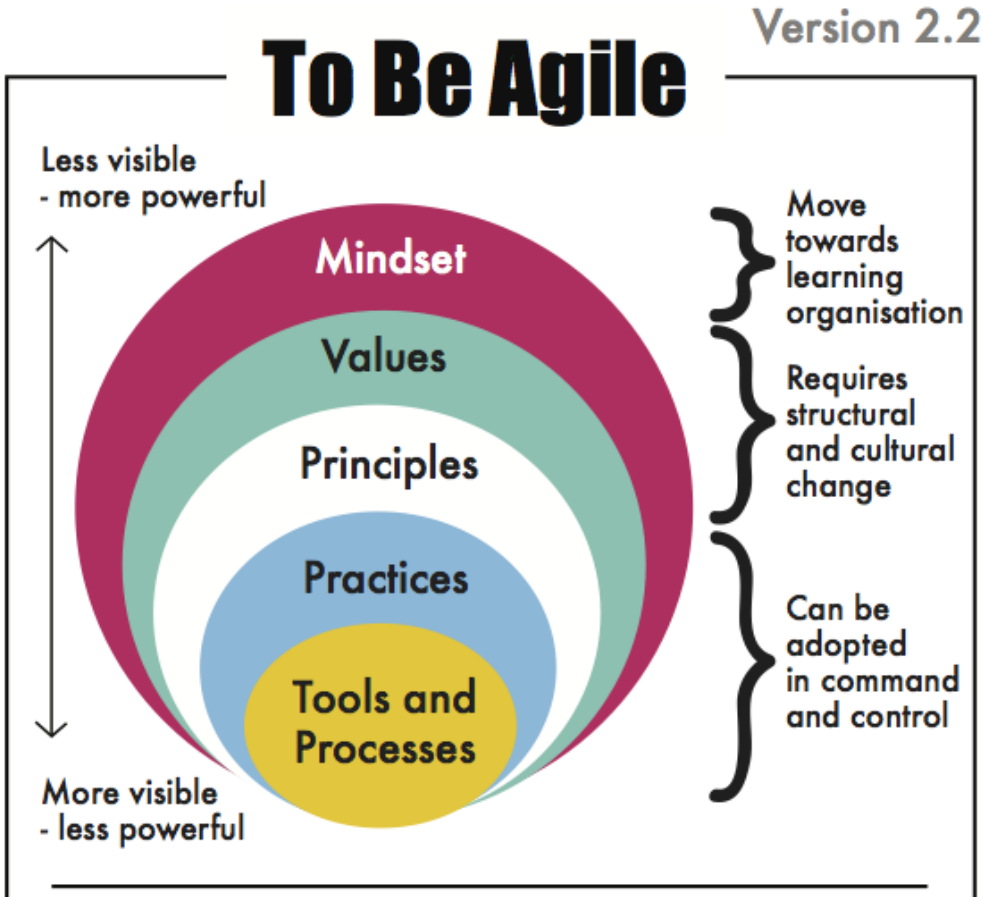
Summary