Development Methodologies
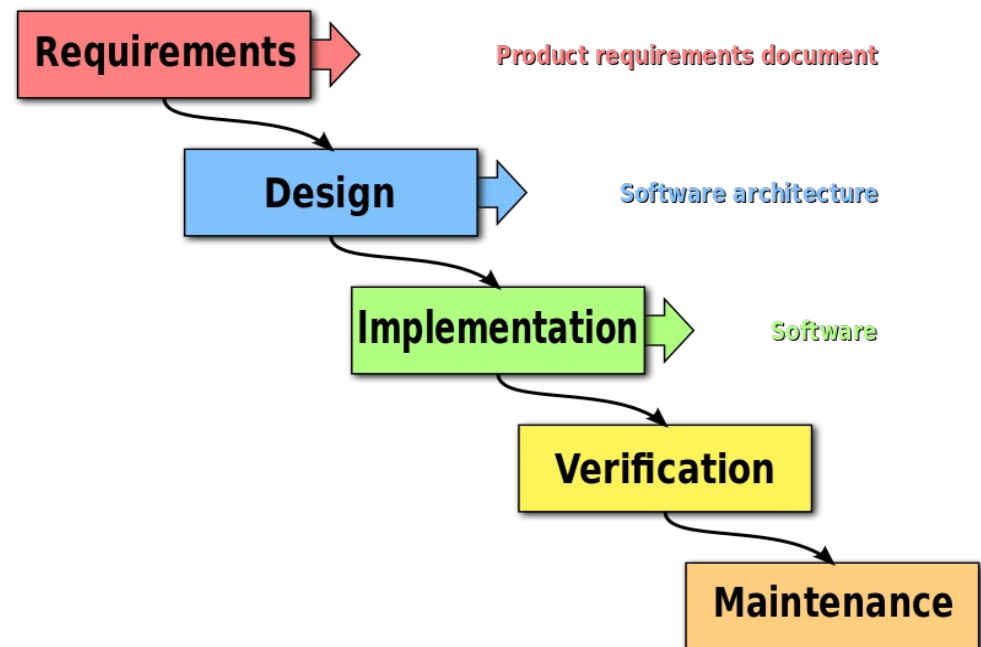## And the Tech They Run On

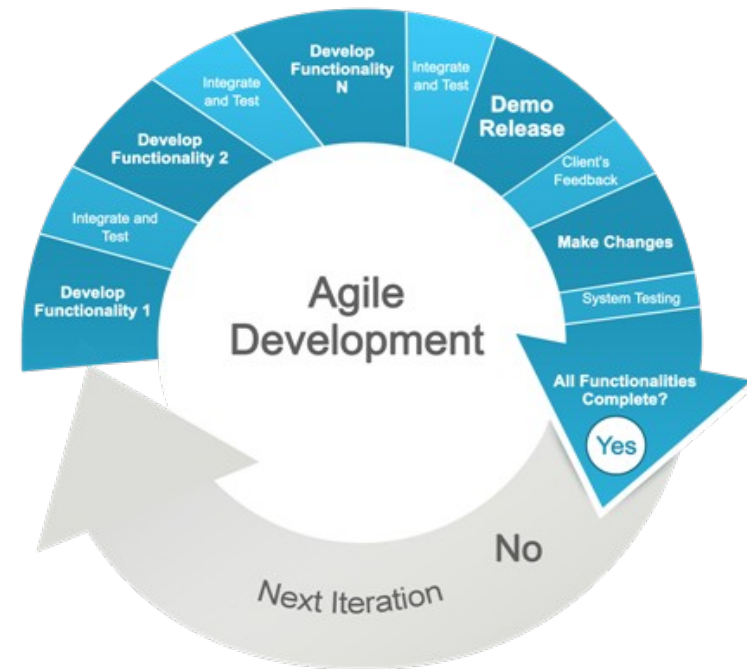Bryan Healey

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Paradigms

- Waterfall (old-school)
  - progress flows from conception to completion
  - each phase dependent on the prior
  - one delivery

Paradigms

- Agile
  - early + often delivery; **incremental**
  - continuous improvement
  - cross-functional

What is Agile?

- Iterative, incremental improvements
  - *"Move fast and break things"*
- Feedback early and often
- Multiple teams, tasks in parallel

- Emphasis on quality
  - Test-driven development
- Drive to full automation
  - Continuous integration, continuous deployment

Scrum

- product owner runs the show
  - gathers requirements
  - manages stakeholders
  - builds backlog
  - helps manage planning, grooming, retro
- sprints: 1wk, 2wk, (4wk?)
  - planning determines scope of work
  - select from backlog, build deliverables
  - daily scrum, burndown tasks
  - retrospective and reporting

Lean?

- Brought to you by: **Toyota!**
  - The Toyota Way:

    "a system designed to provide the tools for people to continually improve their work"

- Scrum with extra efficiency
  - eliminate all waster: code, features, customers
  - focus on the narrow needs of the primary
  - decide late, deliver fast

- Think in whole deliverable
  - features must sum to a whole

What is Kanban?

- just in time! *phew...*
- based on Agile principles, improved process
    - remove the classic sprint structure
    - continuous planning, grooming, developing
    - backlog is essential
    - People roles mostly remain in tact
- Kanban board: a must
    - no pre-assignment
    - grab and go!

Extreme?

- Paired programming
  - code reviews gone extreme
- Continuous deployment
  - deployments gone extreme
- Frequent communication
  - requirement gathering gone extreme
- Emphasis on testing
  - QA gone extreme

etc. etc. etc...

not so extreme, really...

Deployments

- Test-driven development
  - Unit tests, integration tests
  - Pipeline triggers
- Continuous deployment
  - Integration
  - Tests
  - n-box (smoke test)
  - Roll-back or Deploy

Deployments

- Software Needs:
  - git/svn
  - building, configuration
  - scripting
    - unit and integration tests
    - phased release?
- So many options...
  - Jenkins (favorite)
  - Continuum
  - Shippable

Requirements

- Sprint, story, task tracking
- Defect tracking
- Reporting, monitoring
  - Burndown
  - Velocity
  - Sprint reports
- Exportable
- Accessible

Old-school

- Basecamp
  - Released in 1999
  - 37signals (now Basecamp)
  - Project management
  - Not really what you want...

- Trac
  - Released in 2006
  - Edgewall software
  - Mostly bug-tracking but pluggable
  - Works, but not the best...

The upstarts

- Rally
  - Laser-focus on Scrum
  - Business oriented
  - Limited extensibility
  - Can be expensive

- Trello
  - Laser-focus on Kanban
  - Project management oriented
  - Limited extensibility

These work, but...

The standard!

- Three cheers for JIRA!
  - Released in 2002 by Atlassian
- Does it all; highly pluggable, ready for action
  - Scrum, Kanban boards
  - source control
  - pipeline management
- Generally less expensive...
- Can be integrated with other Atlassian tools:
  - Confluence
  - Stash (git)
  - FishEye
  - HipChat
  - etc. etc.

Conclusion

Software is hard;

Make sure your tools and process

don't make it harder!