

Feature Toggle

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About Me

- Around 15 years of rich technical experience
- Senior Technical Architect with Pitney Bowes
- Extensive experience in Software Architecture, Design, Development and Performance Optimization
- Lectures in several forums and universities including Delhi University
- Presented papers at several local and global conferences.
- Gold Medalist in Electronics (Graduate) and Computer Applications(Post Graduate) Courses both from Delhi University

AGENDA

- What is Feature Toggle ?
- Why we need Feature Toggle ?
- Types
- Frameworks
- How to implement ?
 - Demonstration
- Key Considerations
- Lessons Learnt
- Variants in Industry

What is Feature Toggle

- Technique in [software development](#) that attempts to provide an alternative to maintaining multiple [source-code](#) branches.

Why we need Feature Toggle

- CI/CD: Avoid Branches and Merges

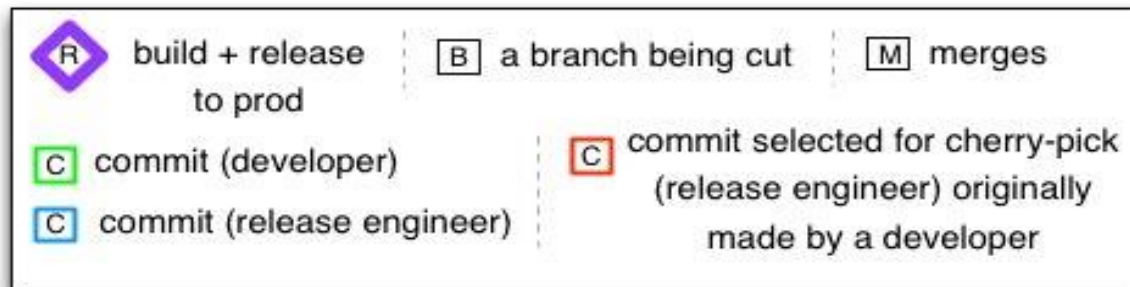
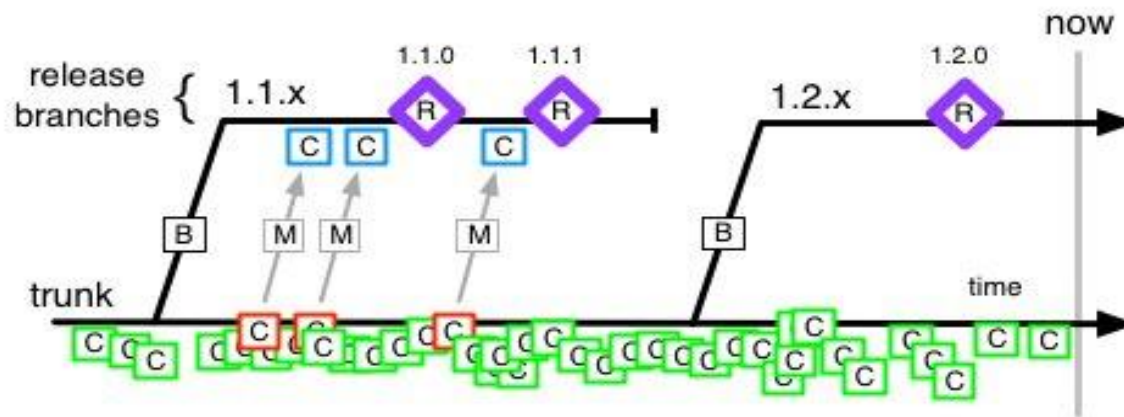


Image courtesy: <http://paulhammant.com/2013/04/05/what-is-trunk-based-development/>

Why we need Feature Toggle

- A/B Testing

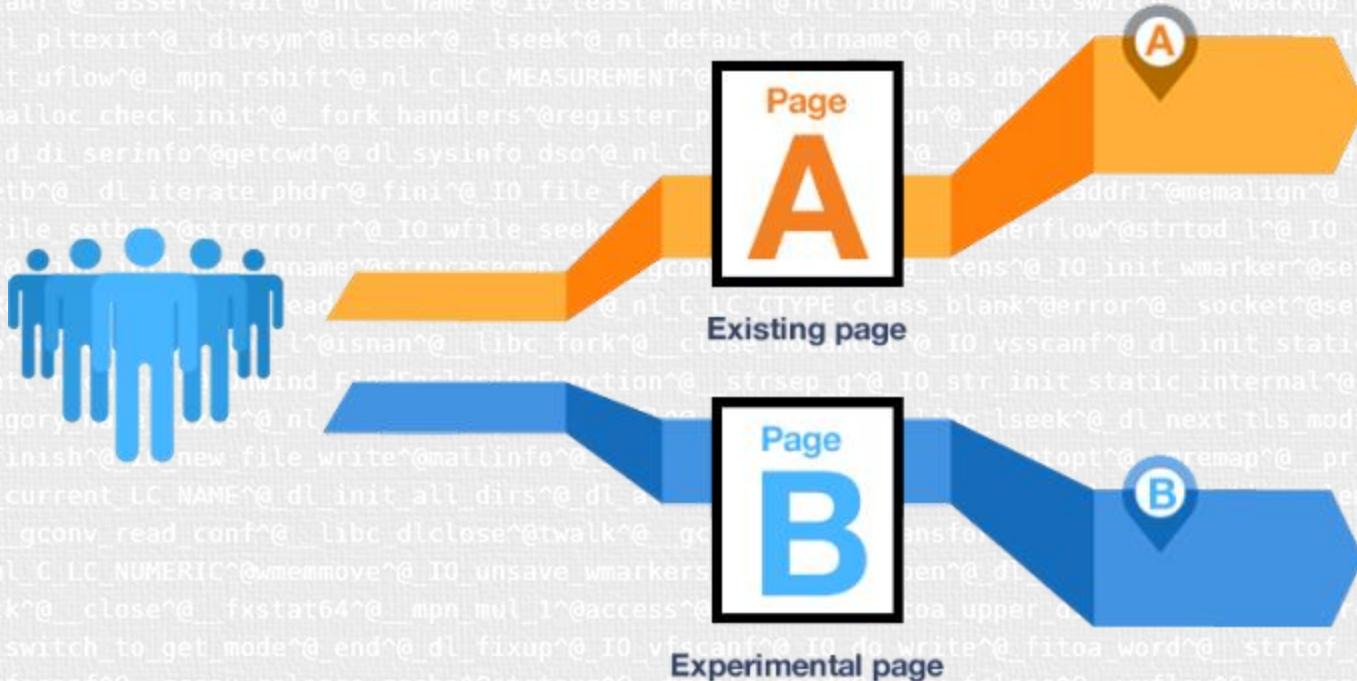


Image Courtesy: <http://www.mazeberry.com/en/blog-ab-testing-is-it-a-good-idea/>

Why we need Feature Toggle

- Unfinished Code in production



Image courtesy: <http://mission17.org/exhibits/unfinished/index.htm/>

Why we need Feature Toggle

- Reducing risk associated with large change



Image courtesy: <http://csrc.nist.gov/organizations/fissee/2015-conference/presentations/march-24/fissee-2015-toner.pdf/>

Why we need Feature Toggle

- Turning a resources heavy feature OFF in high load conditions



Image courtesy: <http://www.mxmindia.com/2013/07/will-the-ad-switch-off-get-broadcasters-to-revert-to-weekly-ratings>

Why we need Feature Toggle

- Phased rollout

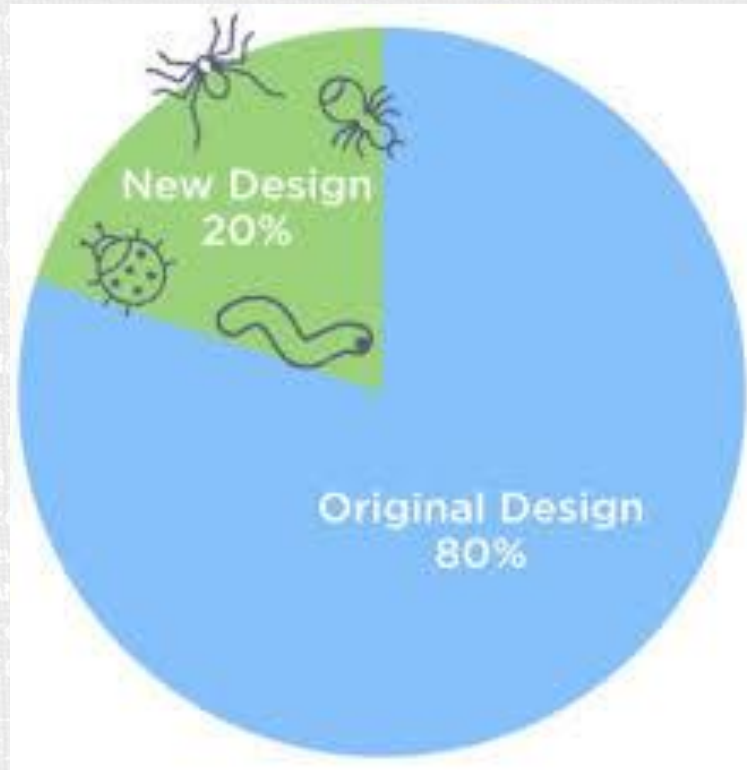


Image courtesy: <https://blog.optimizely.com/2014/11/11/5-ways-phased-rollouts-will-protect-your-ios-app/>

Why we need Feature Toggle

- Safe To Fail

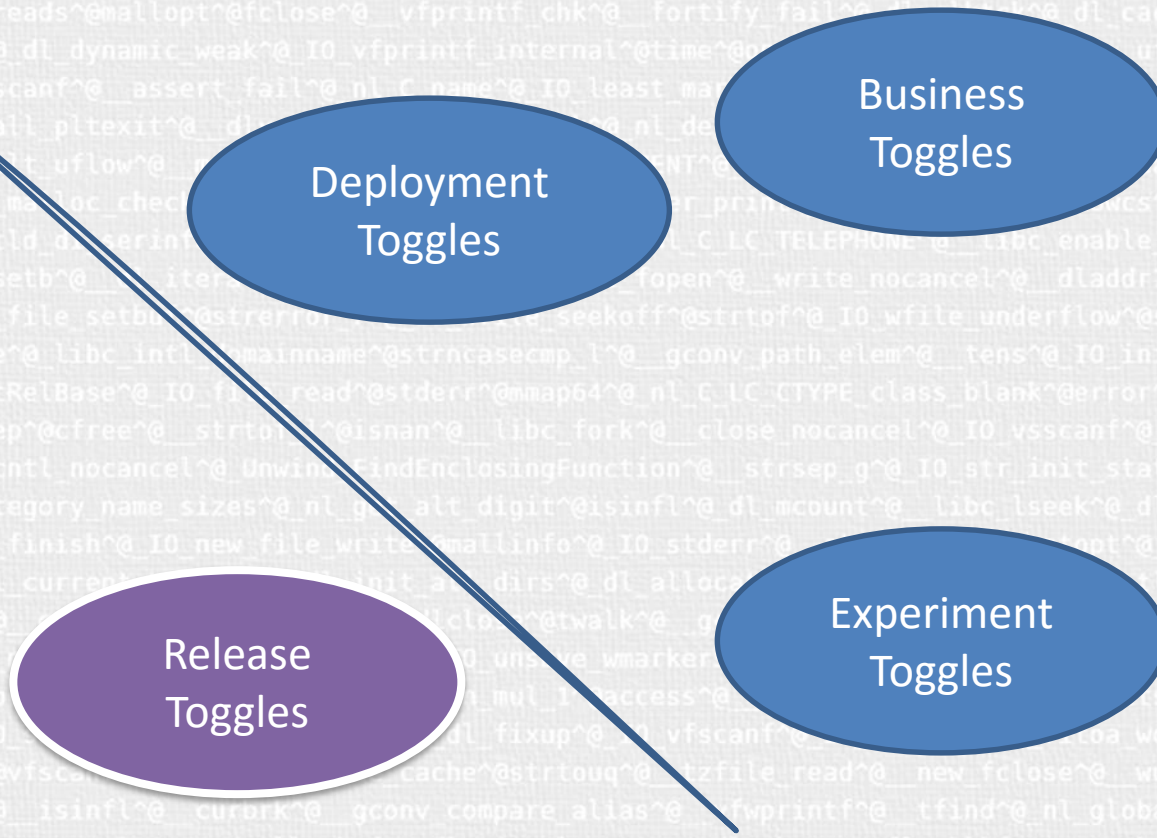


Image courtesy: <http://www.neatorama.com/2010/03/10/how-bomb-proof-suits-work/>

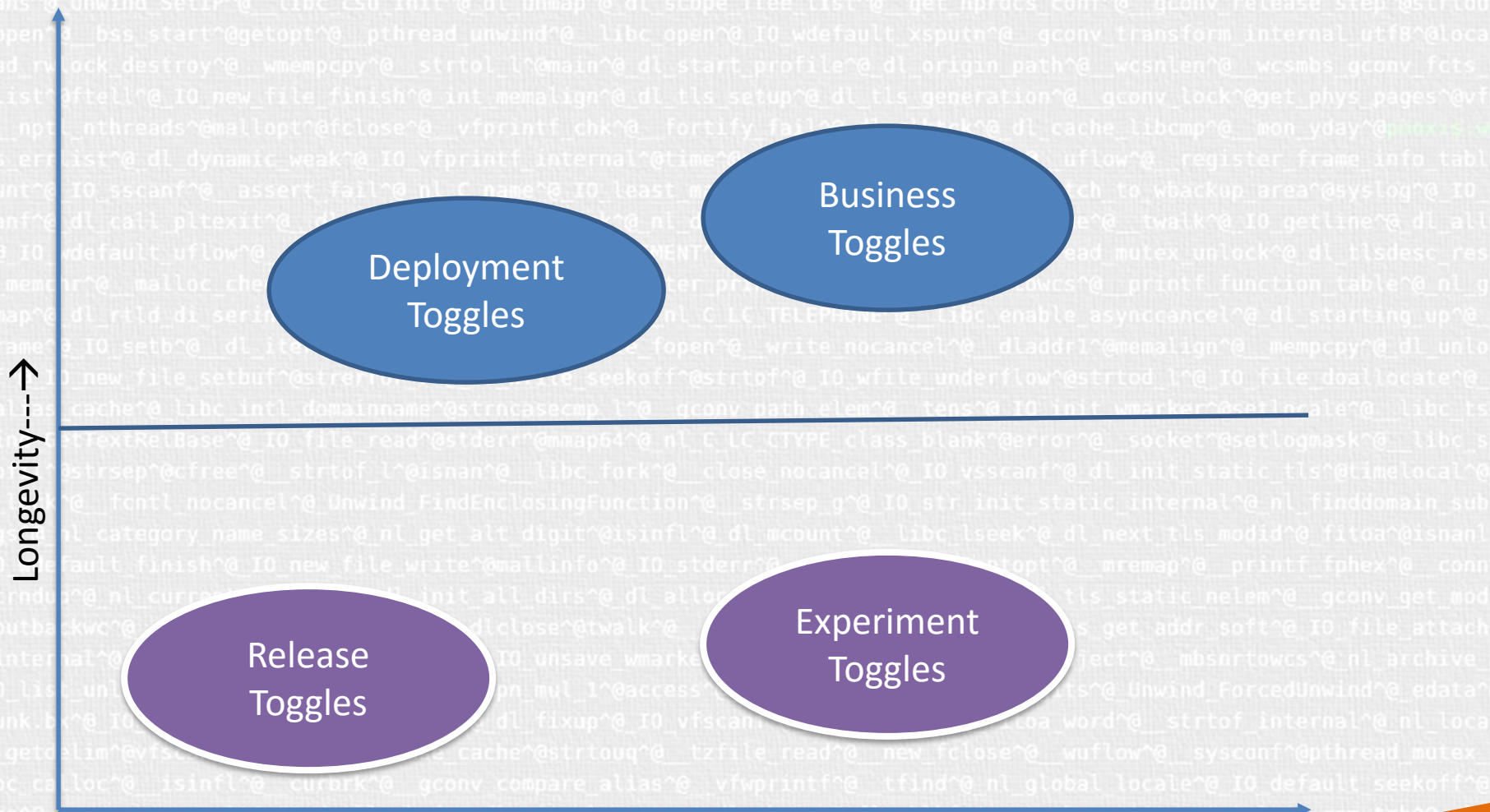
Types of Toggles

- Release Toggles
- Business Toggles
- Deployment Toggles (Ops Toggles)
- Experiment Toggles (Canary cohort)

Static vs Dynamic



Long-lived vs Transient



Baseline Architecture

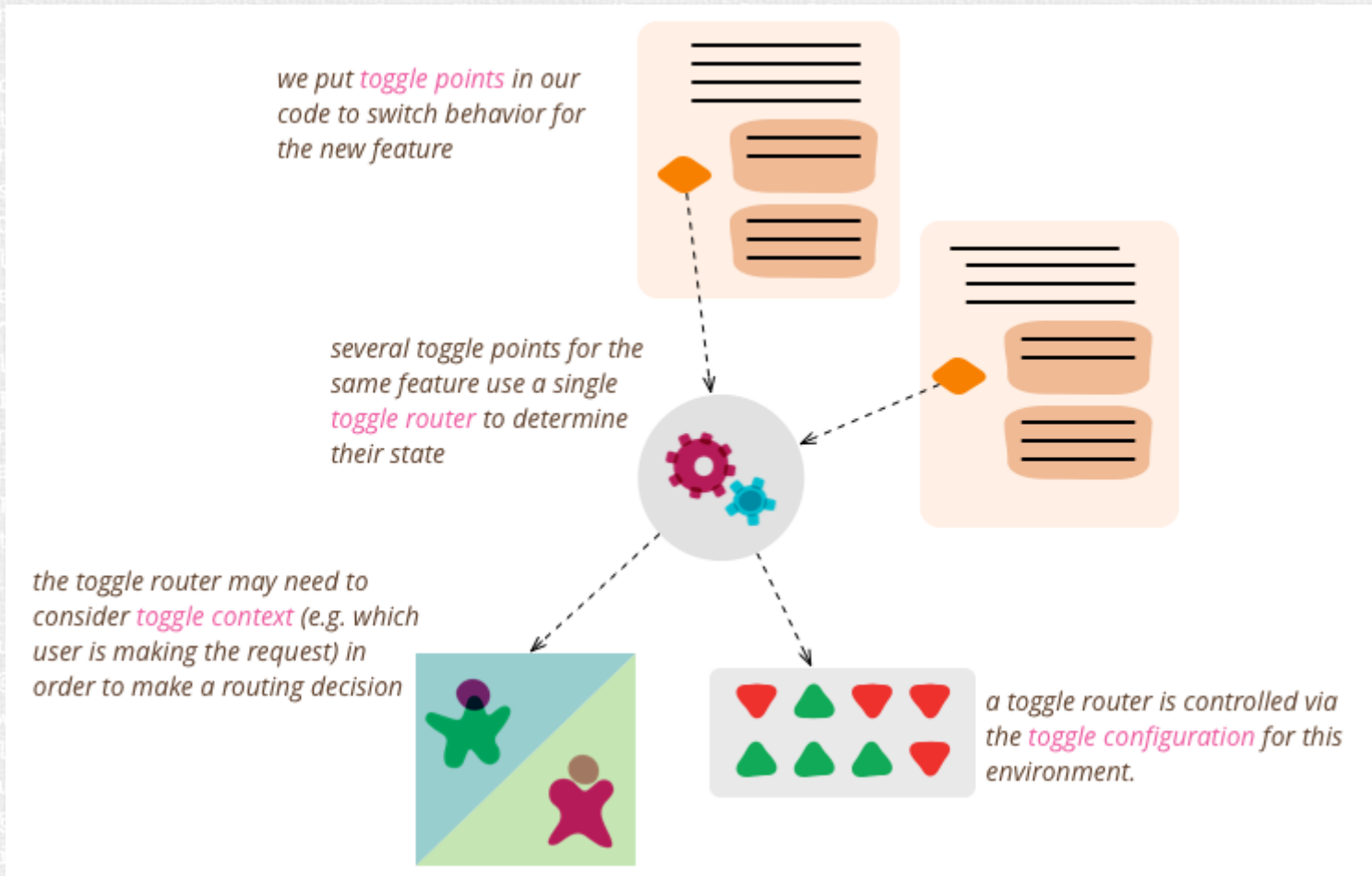


Image courtesy: <http://martinfowler.com/articles/feature-toggles.html#>

Design Patterns

- Parallel change Pattern
- Strategy Pattern
- Factory Pattern
- Chain of Responsibility Pattern

Frameworks Available



Ruby

- [Flip](#)
- [Rollout](#)
- [Degrade](#)



PHP

- [FeatureToggle \(Symfony\)](#)



Python

- [Gargoyle \(Django\)](#)
- [Django Waffle \(Django\)](#)
- [Nexus admin](#)



JavaScript:

- [FeatureFlipperJS \(Node\)](#)



.Net:

- [FeatureToggle](#)



Groovy

- [GrailsFeatureToggle](#)



Java

- [Togglelz](#)

Demonstration

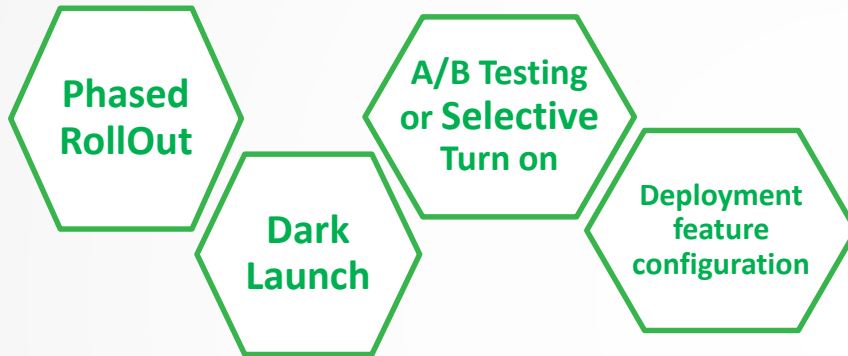
- Import greeting message from a template file and wish the admin of the organization. The message may vary and can be changed. We also need to expose this greeting to the world so that some one else may use it.

Steps in development –spanning several sprints

- Import greeting message with hardcoded admin name
- Allow greeting message to be editable
- Allow the Admin name to be changed in database and read from there
- Allow the API to be exposed to be used as a service

Important to recognize

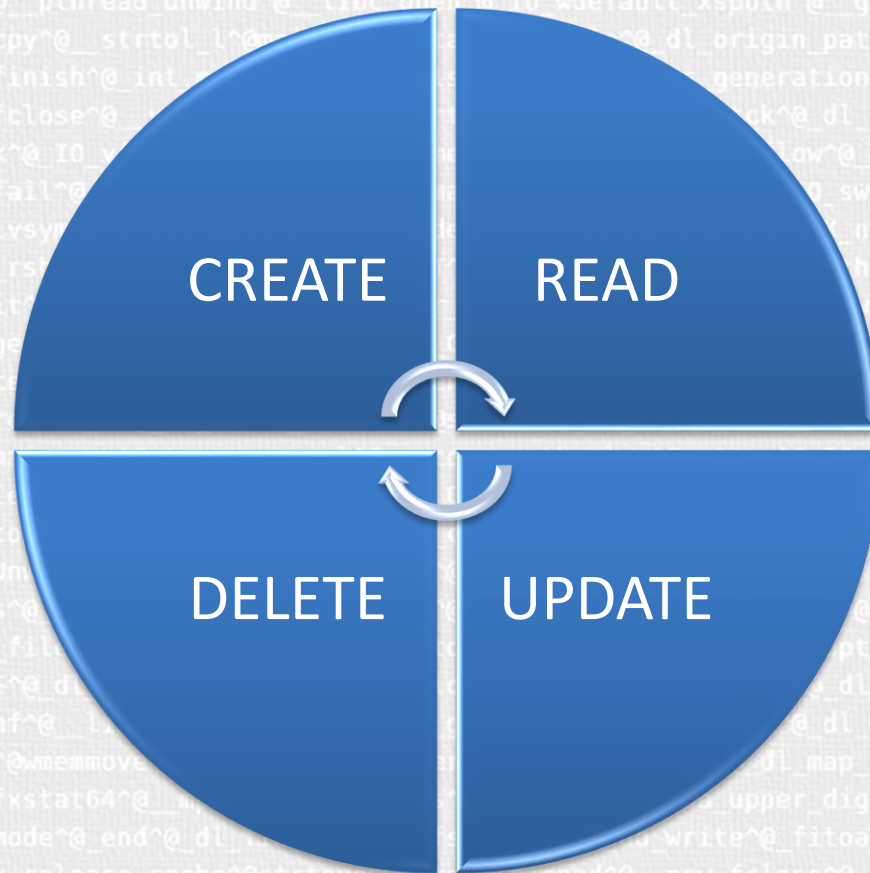
When to use Feature Toggle?



When NOT to use?



Life Cycle of a Toggle



Not Removing Toggles!!!



Biggest Tech Debt



Software will be harder to improve, maintain, test and deploy.



Loose control of toggles



Chaos!!!

Excessive use of toggles



Overcomplicated



Unmaintainable



Buggy



Quick hacks and fixes



Untested



Poor Quality

Lessons Learnt!!!



Image courtesy: <http://www.directindustry.com>

Lessons Learnt!!!

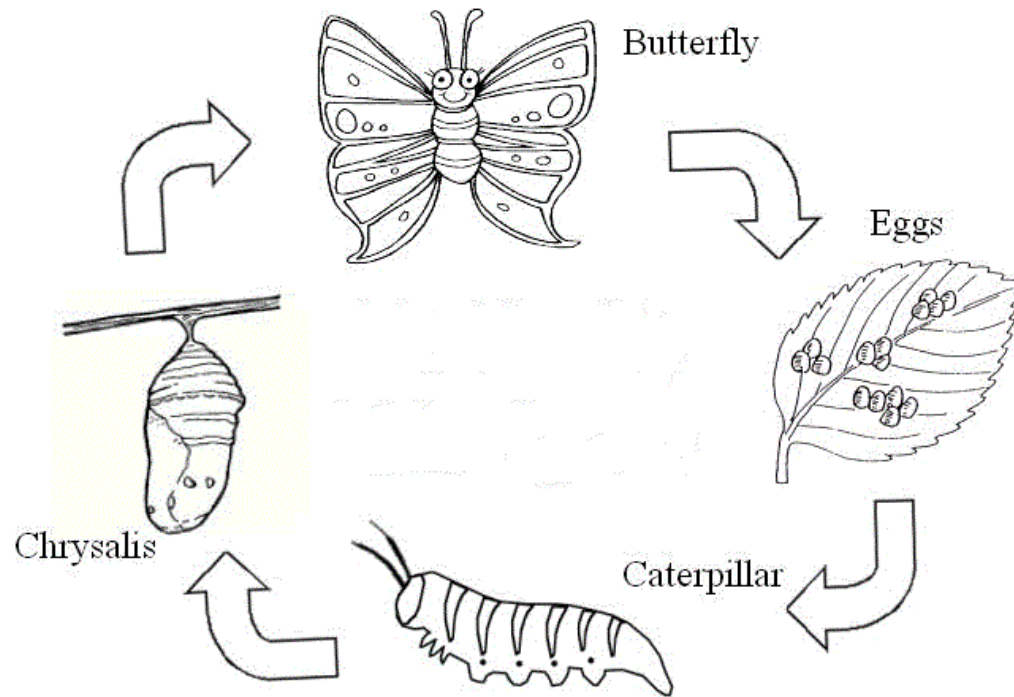


Image courtesy: http://www3.canisius.edu/~grandem/butterflylifecycle/The_Lifecycle_of_a_Butterfly_print.html

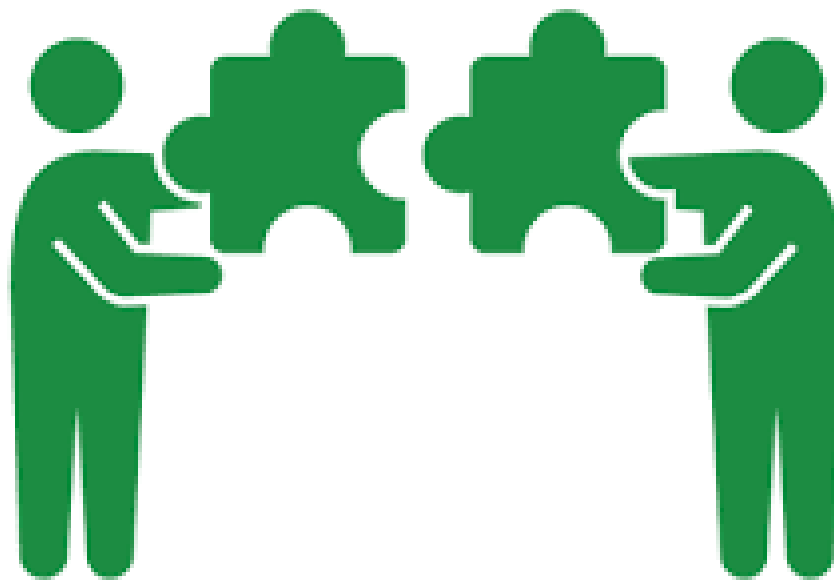
Lessons Learnt!!!

Quality vs. Quantity



Image courtesy: <http://www.ajbubb.com/the-struggle-between-quantity-and-quality/#>

Lessons Learnt!!!



Lessons Learnt!!!



Image courtesy: <http://beforeitsnews.com/alternative/2013/12/the-right-name-makes-a-difference-2856136.html>

Lessons Learnt!!!



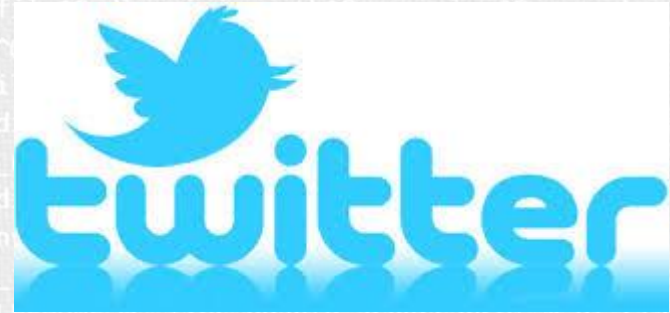
Image courtesy: <https://www.flickr.com>

Lessons Learnt!!!



Image courtesy: <https://www.customisedesigns.co.uk>

Latent Code Variants





References

- [Martin Fowler – Feature Toggle](#)
- https://en.wikipedia.org/wiki/Feature_toggle
- <http://www.paulhammond.org/2009/06/velocity/10deploys.pdf>
- <http://www.beautifulbuilds.com/feature-toggle-frameworks-list/>
- [Feature Flipping for Java](#)



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