Thinking and Discovering by Writing

Stephen Mizell

What is the first thing you do when you start a project?

Writing should be the first thing

Think about what you're going to do before doing it

Write about what you're going to do before doing it

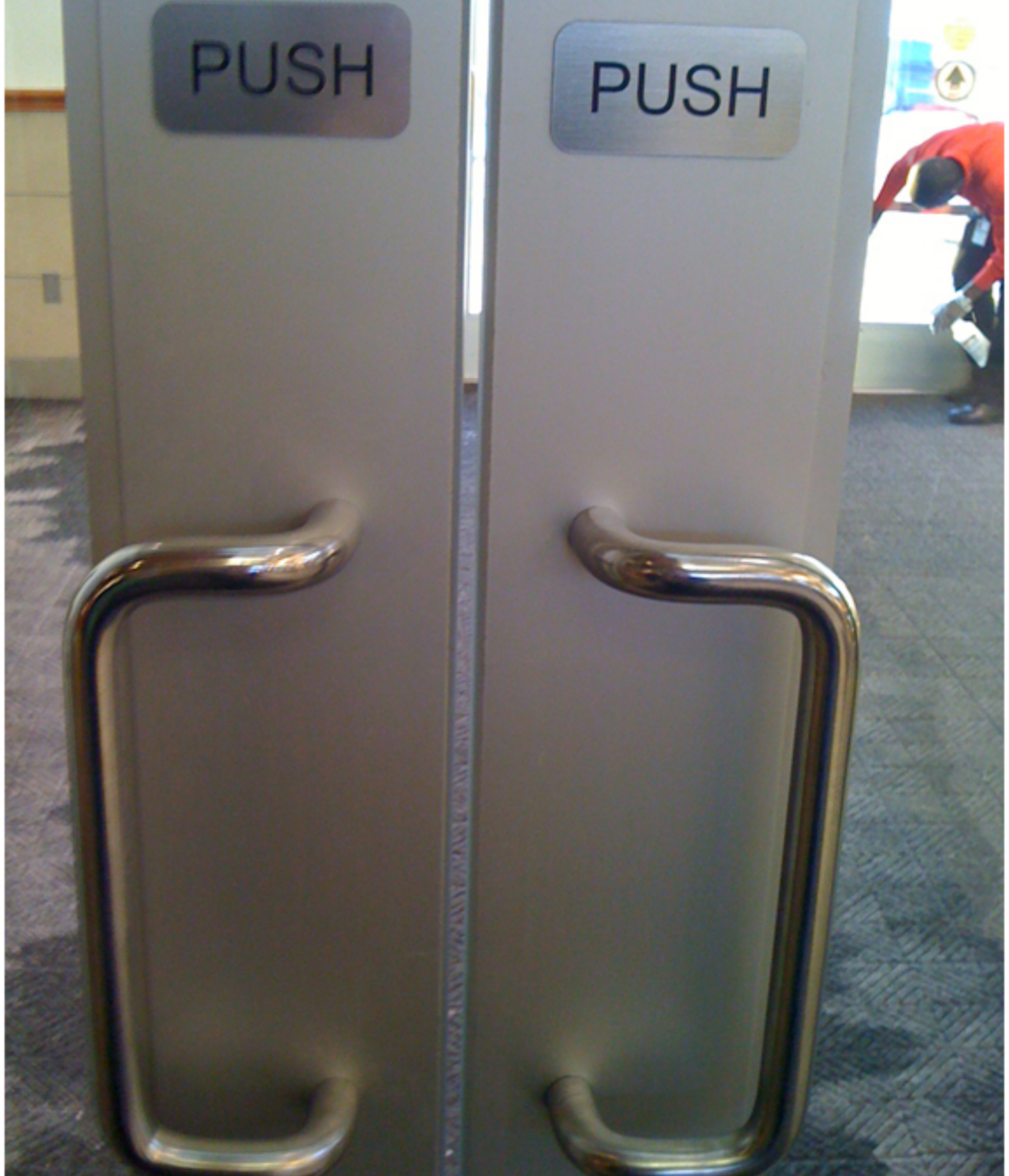
Writing Stages

- Design
- User Stories
- Implementation
- Documentation

Design

Design the way the world works

- "Design of Everyday Things" by Donald Norman
- We know when something we encounter is wrong
- "Norman Doors"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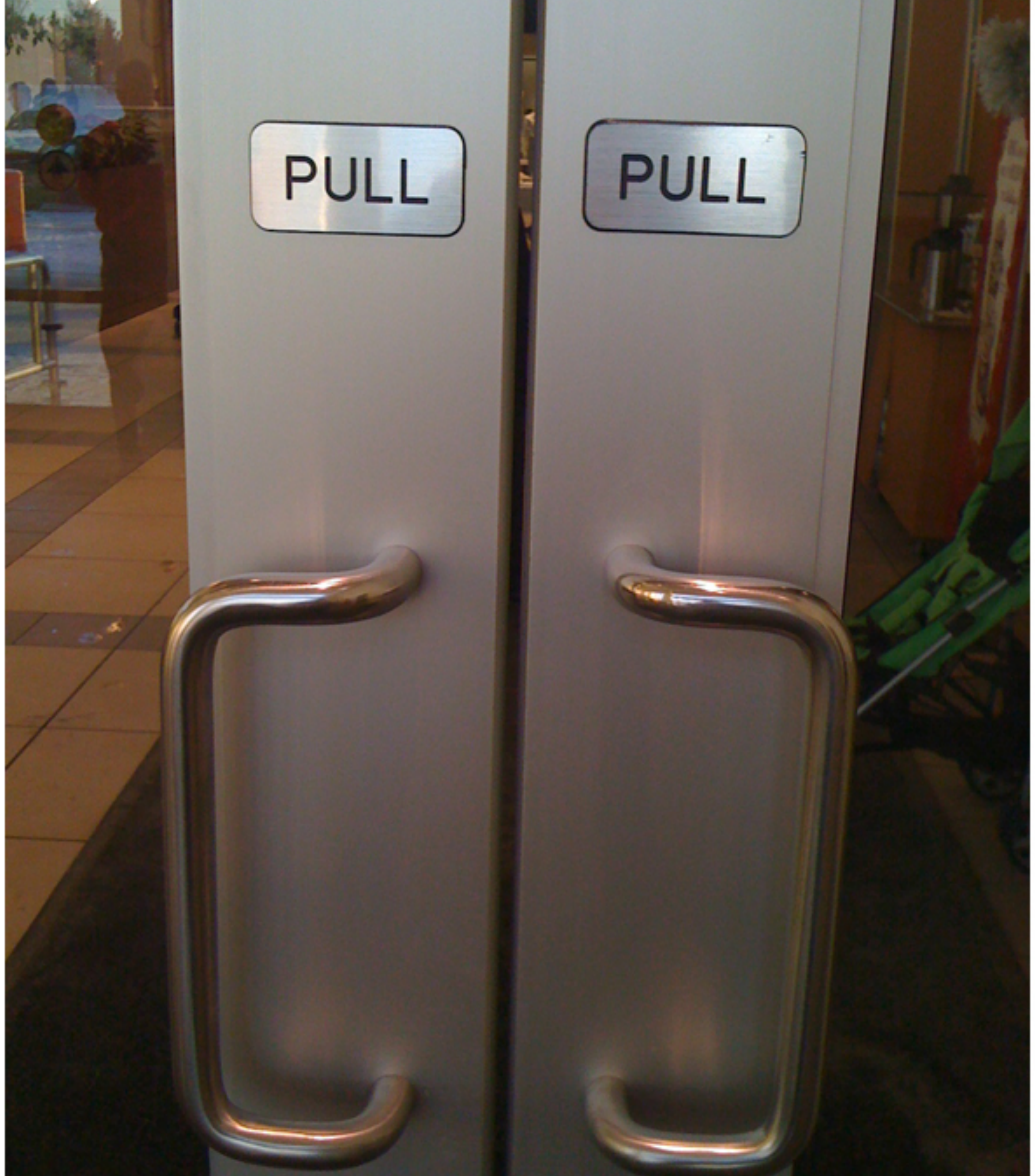
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Write the way the world works

Example: designing a door

What did we design?

- A physical door?
- A door application?
- A door API?

State Machine with Affordances

State Machine

- States and affordances for designers to use
- Foundation for user stories to drive implementation
- States and affordances to convey in API responses

Ubiquitous Language

Ubiquitous Language

By using the model-based language pervasively and not being satisfied until it flows, we approach a model that is complete and comprehensible, made up of simple elements that combine to express complex ideas.

— Eric Evans

Ubiquitous Language

Domain experts should object to terms or structures that are awkward or inadequate to convey domain understanding; developers should watch for ambiguity or inconsistency that will trip up design.

— Eric Evans

But naming is hard

> There are two hard things in computer science: cache invalidation, naming things, and off-by-one errors.
>
> — Jeff Atwood

Summary on Writing for Design

- Writing helps you think about design
- Writing helps you surface a common vocabulary
- Writing helps you understand the application's logic
- Writing helps you have a discussion apart from implementation

User Stories

User Stories

- Describes a user, what they want, and why
- Captures a deliverable feature
- Template for capturing simple requirements

User Stories

- Independent
- Negotiable
- Valuable
- Estimatable
- Small
- Testable

From Write a Great User Story

As a <role>, I want <goal>
so that <benefit>

Given… When… Then…

Gherkin

```
Feature: Some terse yet descriptive text of what is desired
  As an explicit system actor
  I want to gain some beneficial outcome which furthers the goal
  So that I realize a named business value

  Scenario: Some determinable business situation
    Given some precondition
    And some other precondition
    When some action by the actor
    And some other action
    And yet another action
    Then some testable outcome is achieved
    And something else we can check happens too
```

Summary on Writing User Stories

- Capture small chunks of requirements
- Understand logic and value added before implementation
- Communicate with non-technical stakeholders

Implementation

Notice we haven't written code yet

Summary of Writing to Drive Implementation

- Understand logic and vocabulary before coding
- Defined scope of project requirements
- Defined behavior to drive development

Documentation

Good Documentation

- **Introduction** - General concept, feel, and understanding
- **Explanation** - How to actually use your project/software
- **Reference** - Reference material for drilling down
- **Troubleshooting** - True frequently asked questions

From How Great Documentation Drives Developer Adoption

Documentation Practices

- Readme Driven Development
- Contract First
- Documentation lives alongside code
- Documentation with Continuous Integration Build

Summary of Writing Documentation

- Provides help for your users
- Byproduct of good product design and implementation
- Part of your deliverable to the end users

References

Writing

- Markdown - for all kinds of writing
- API Blueprint - for APIs
- Cucumber - for Gherkin
- How to Write Well-Formed Stories

References

Software Architecture

- Martin Fowler
- Uncle Bob
- Ruby Midwest 2011 - Keynote: Architecture the Lost Years - Robert Martin

References

Documentation

- Read the Docs
- Sphinx
- Jekyll
- How GitHub uses GitHub to document GitHub