NODE Technical Book Club

Tidy First - Kent Beck

Tidy First? describes:

- When to tidy messy code before changing what it computes
- How to tidy messy code safely and efficiently
- How to stop tidying messy code
- Why tidying works

PART I - Tidyings

Guard Clauses

From

```
if (condition)
    if (not other condition)
        ...some code...
```

To

```
if (not condition) return
if (other condition) return
...some code...
```

Dead Code

DELETE IT!

Normalize Symmetries

Commonize coding styles.

Example: Lazily initialized variables

```
foo()
return foo if foo not nil
foo := ...
return foo
```

```
foo()
if foo is nil
foo := ...
return foo
```

New Interface, Old Implementation

Implement the interface you wish you could call

Similar to TDD

Reading Order

Reorder the code as a reader would prefer to encounter it

Cohesion Order

Reorder the code so the elements you need to change are adjacent

Move Declaration and Initialization Together

From

```
fn()
    int a
    ...some code that doesn't use a
    a = ...
    int b
    ...some more code, maybe it uses a but doesn't use b
    b = ...a...
    ...some code that uses b
```

To

```
fn()
    int a = ...
    ...some code that doesn't use a
    ...some more code, maybe it uses a but doesn't use b
    int b = ...a...
    ...some code that uses b
```

Explaining Variables

From

```
return new Point(
    ...big long expression...,
    ...another big long expression...
)
```

To

```
x := ...big long expression...
y := ...another big long expression...
return new Point(x, y)
```

Explaining Constants

Name the magic numbers

```
PAGE_NOT_FOUND := 404
if response.code = PAGE_NOT_FOUND
...blah blah blah...
```

Explicit Parameters

Make the parameters explicit by splitting functions:

```
function foo(params)
    foo_body(params.a, params.b)

function foo_body(a, b)
    ...a... ...b...
```

Chunk Statements

Put a blank line between parts of the code

Extract Helper

From

```
routine()
...stuff that stays the same...
...stuff that needs to change...
...stuff that stays the same...
```

To

```
helper()
    ...stuff that needs to change...

routine()
    ...stuff that stays the same...
    helper()
    ...stuff that stays the same...
```

Also if you see following frequently:

```
foo.a()
foo.b()
```

Then, create:

```
ab()
    a()
    b()
```

One Pile

When tidying went wrong and ended up too many small pieces with symptoms:

- Long, repeated argument lists
- Repeated code, especially repeated conditionals
- Poor naming of helper routines
- Shared mutable data structures

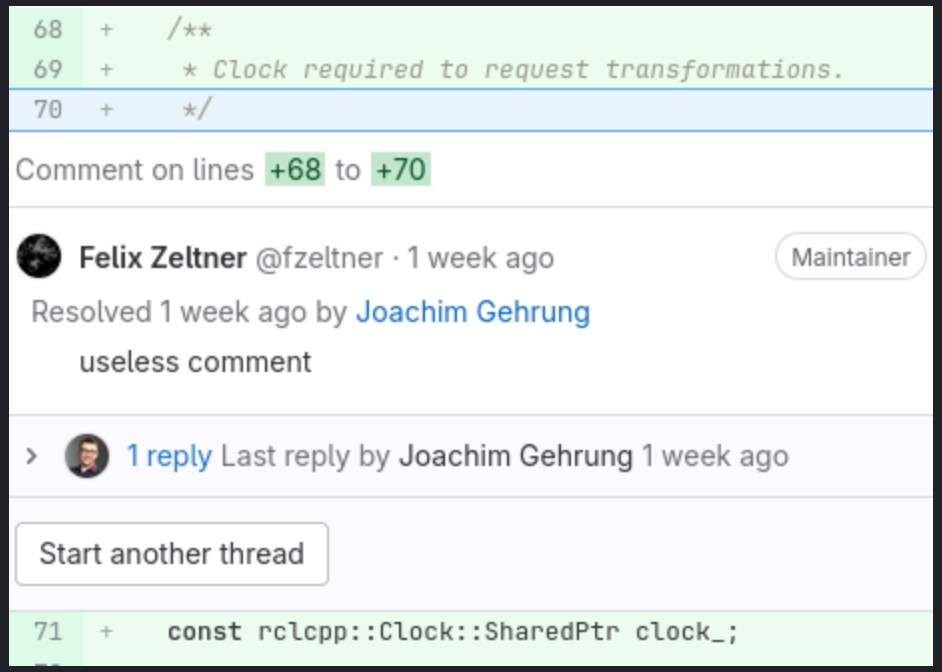
To regain clarity, the code must first be mooshed together so new, easier-to-understand parts can then be extracted.

Explaining Comments

You know that moment when you're reading some code and you say, "Oh, so that's what's going on!" That's a valuable moment. Record it.

Help future yourself and explain what isn't obvious from the code.

Delete Redundant Comments



PART II - Managing

- When do you start tidying?
- When do you stop tidying?
- How do you combine tidying, changing the structure of the code, with changing the behavior of the system?

Separate Tidying

Tidyings should go in their own PRs, with as few tidyings per PR as possible

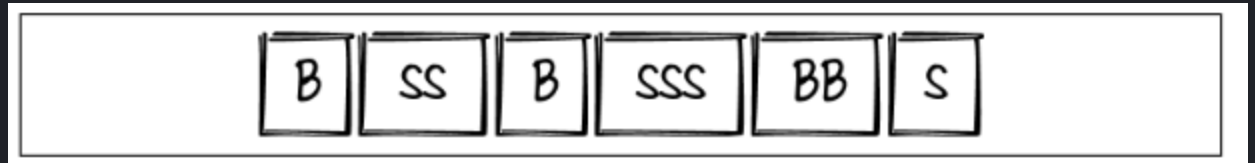


Figure 16-4. Behavior and structure changes in separate PRs

Chaining

Each tidying move creates possibilities for tidying further.

Flow tidyings together to achieve larger changes to the structure of your code

Batch Sizes

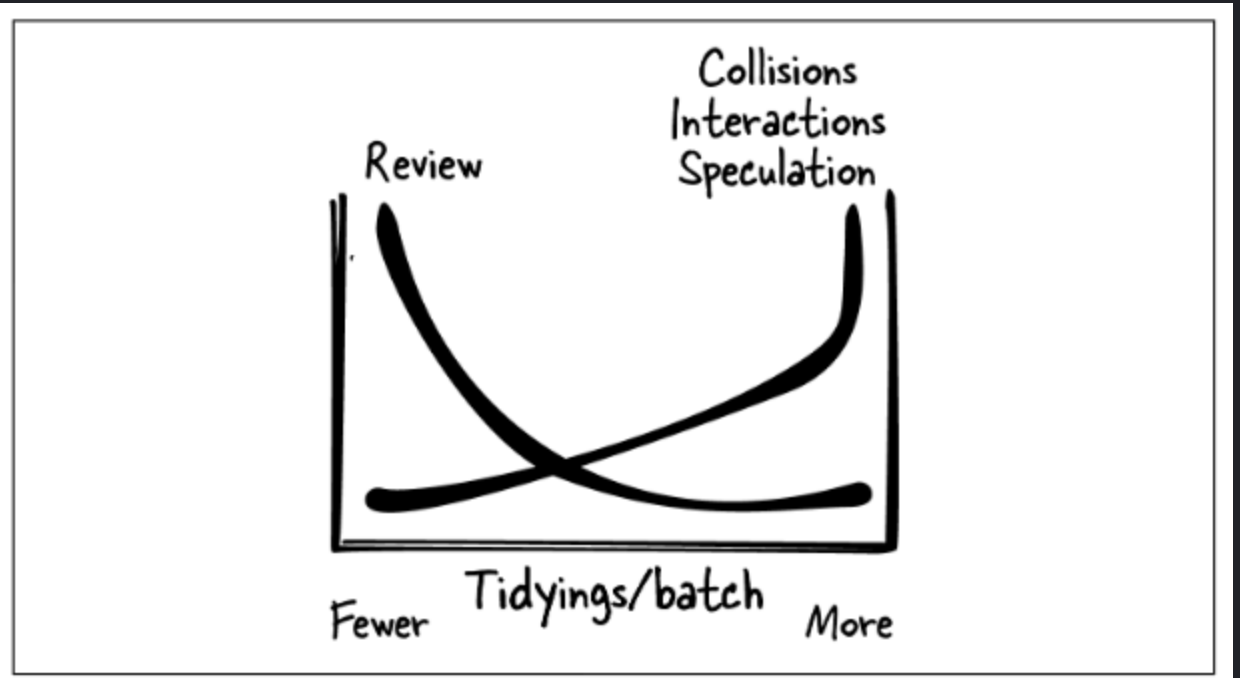


Figure 18-4. Review costs rise as batches shrink

Rhytm

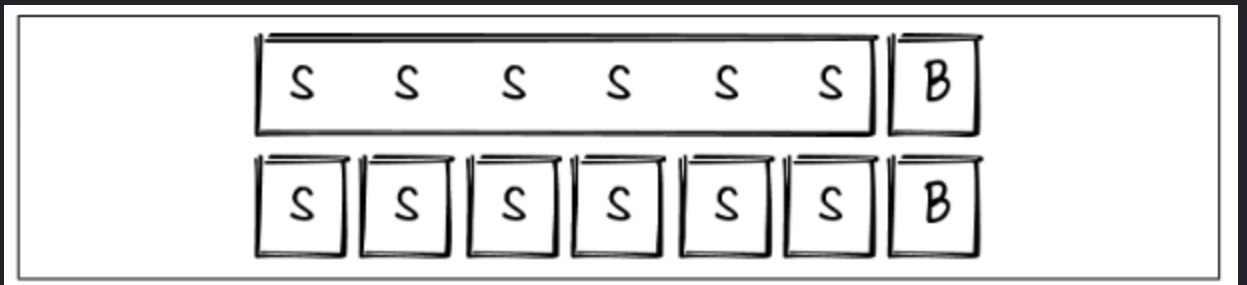


Figure 19-1. Structure changes batched together or separately

How much time is represented in one of those successions of structure changes followed by a behavior change?

Getting Untangled

What to do when you have a mess of tidyings and changes all tangled together?

Options:

- Ship it as is. This is impolite to reviewers and prone to errors, but it’s quick.
- Untangle the tidyings and changes into separate PRs, or a sequence of PRs, or a sequence of commits in a single PR. This is more polite, but it can be a lot of work.
- Discard your work in progress and start over, tidying first. This is more work, but it leaves a coherent chain of commits.

First, After, Later, Never

What should be the timing of tidying with respect to a behavior change?

- Never: is acceptable if the code is not going to need behavior changes at all.
- Later: is good when you have a big batch of tidying but no immediate payoff.
- After: is good if you will need to change same code again soon or it is easier to do than later.

Should you Tidy First as the title of the book suggests?

IT DEPENDS.
Do it when:

- It will pay off immediately, either in improved comprehension or in cheaper behavior changes.
- You know what to tidy and how.

See you in Part III - Theory discussion