

Making performance a design consideration



I'm Chelsea Otakan


@chexee

**Why should designers
care about performance?**

“ User experience encompasses all aspects of the end-user’s interaction with the company, its services, and its products.

Don Norman and Jakob Nielsen, The Nielsen Norman Group

“ User experience
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the end-user interaction
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Don Norman and Jakob Nielsen, The Nielsen Norman Group

Never.

“ ... the average impact of
a 1 second delay meant a
7% reduction in
conversions

“The Performance of Web Applications: Customers are Won or Lost in One Second” Aberdeen Research Group, 2008

**An additional 400ms
delay on a Google
search results page
dropped traffic and
revenue by almost 20%**

Marissa Mayer, Web 2.0 2006

**At Amazon, every 100ms
increase in load time
decreased sales by
about 1%**

Greg Linden, Stanford, 2007

**Improving performance
improves user experience.**

**Improving performance
improves user experience.**

***Especially* for developers.**

“ **Flow** is the mental state of operation in which a person performing an activity is **fully immersed** in a feeling of energized focus, full involvement, and enjoyment...

Wikipedia, concept coined by Mihály Csíkszentmihályi

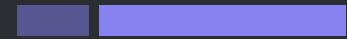
- ✓ Generate phrases...
- ✓ Connect teammates...
- ✓ Cross 't's dot 'i's...

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- ✓ Connect teammates...
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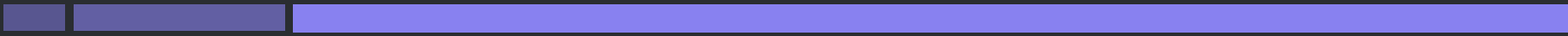
What's good performance?



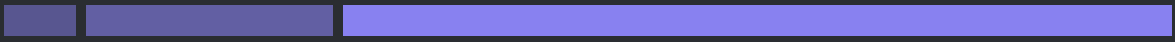
**A delay of less than 100ms
will feel instantaneous**



A delay of **1 second** will be noticeably sluggish



A delay of 10 seconds or more will cause the user's attention to drift.



A delay of ~~10~~ 5 seconds or more will cause the user's attention to drift.



**... but what if the user has
to wait?**

First, ask “why?”

Design for waiting last.

... but what if the user
really has to wait?

**The longer the wait, the
more detail I need**

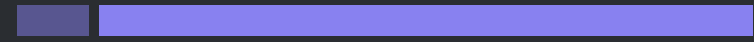


© Alamy

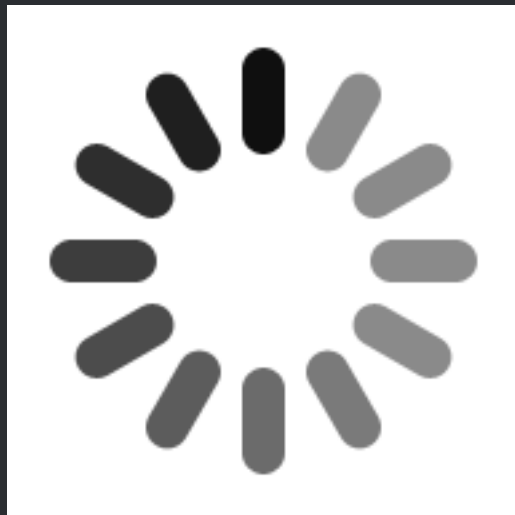
—
100ms to 1 second

No loader required. Focus on optimization.

Click responses, hover responses



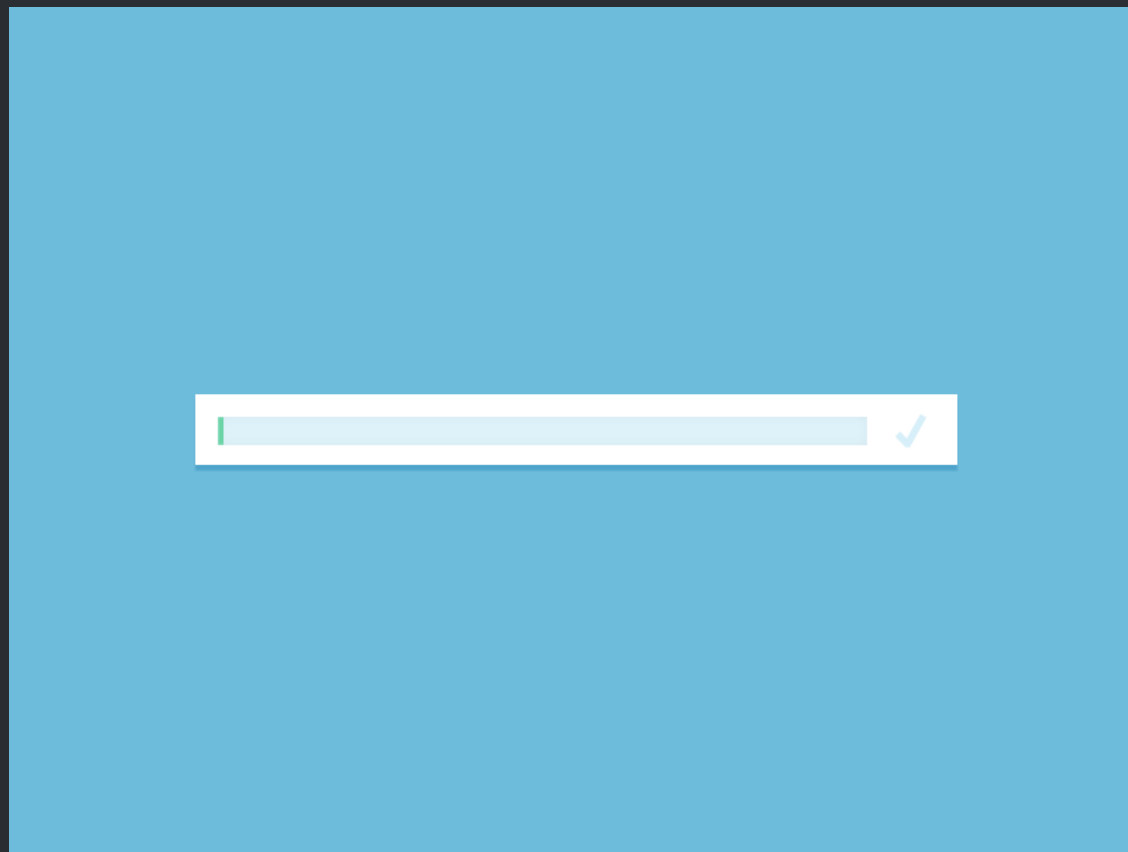
1 to 3 seconds



Content loading, form submissions

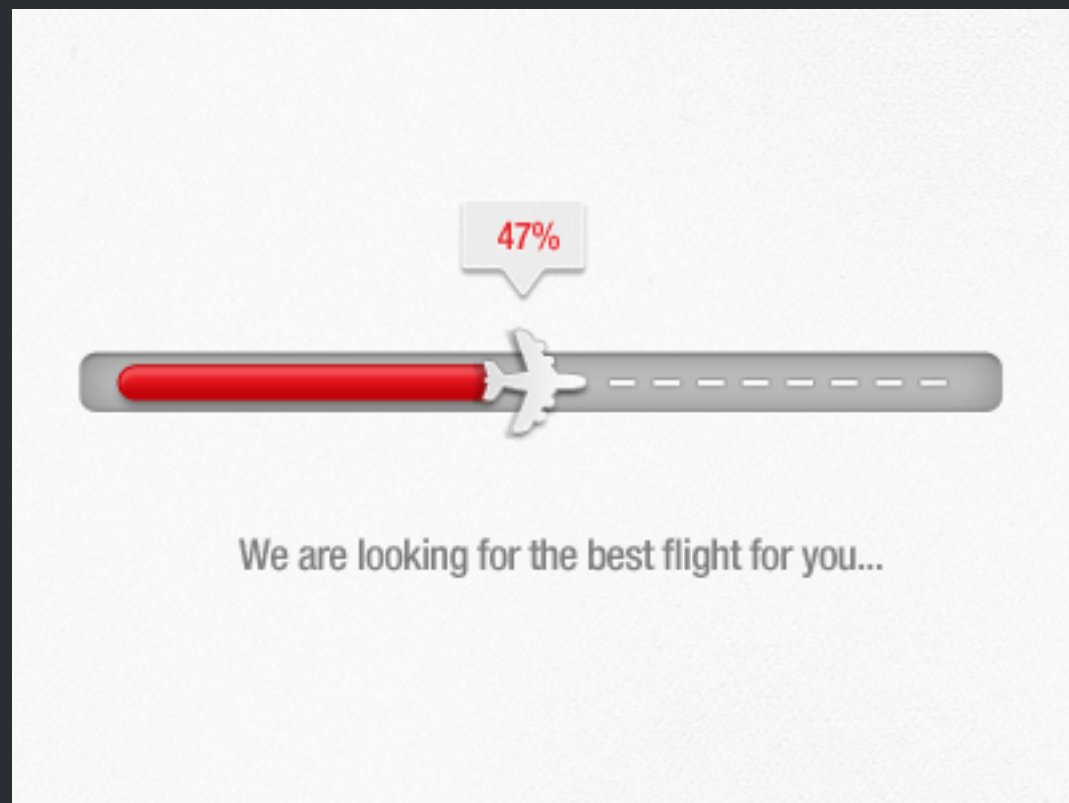


3 to 5 seconds



Content loading, file downloading, buffering

More than 5 seconds



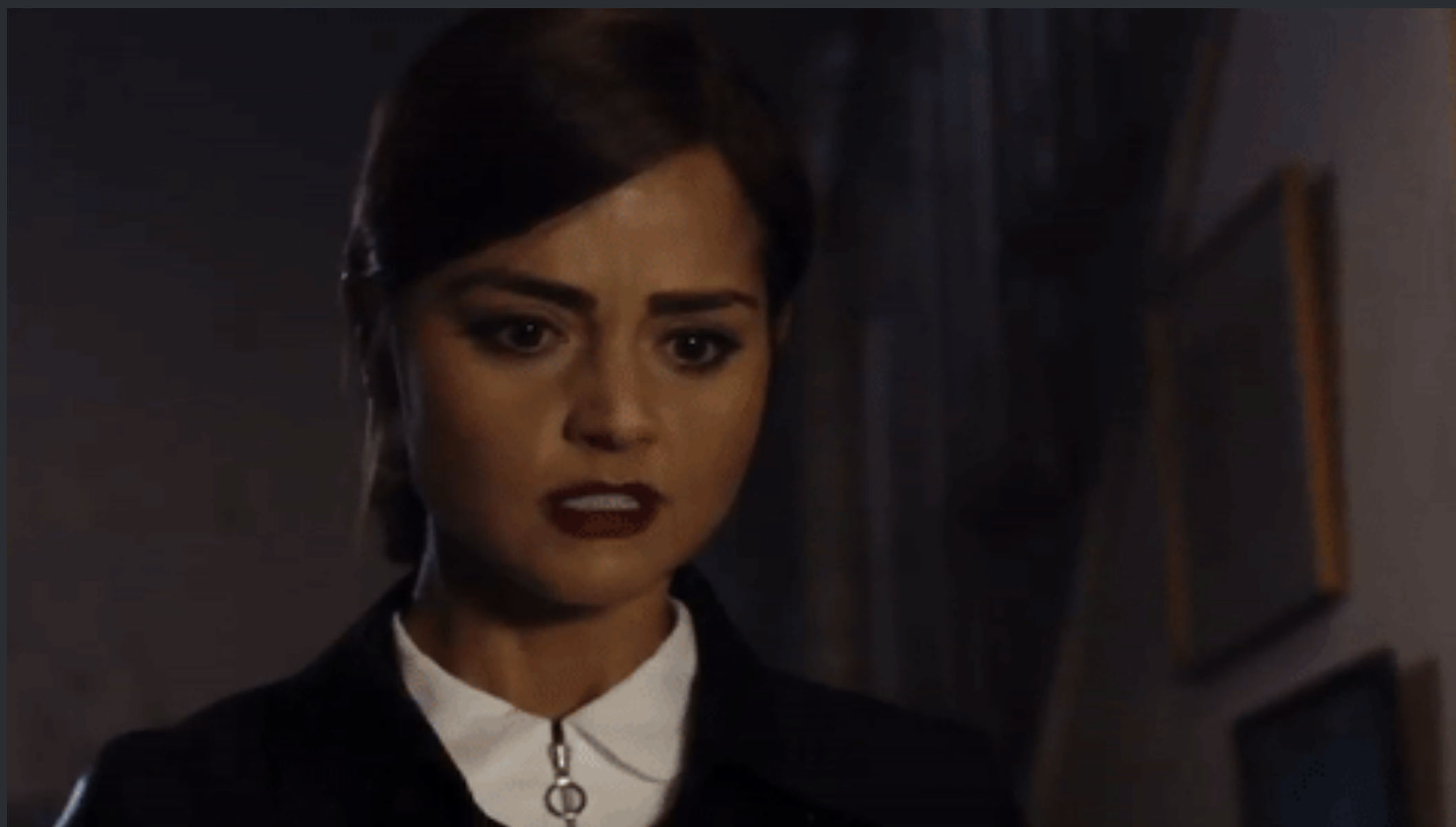
Content loading, file downloading, buffering

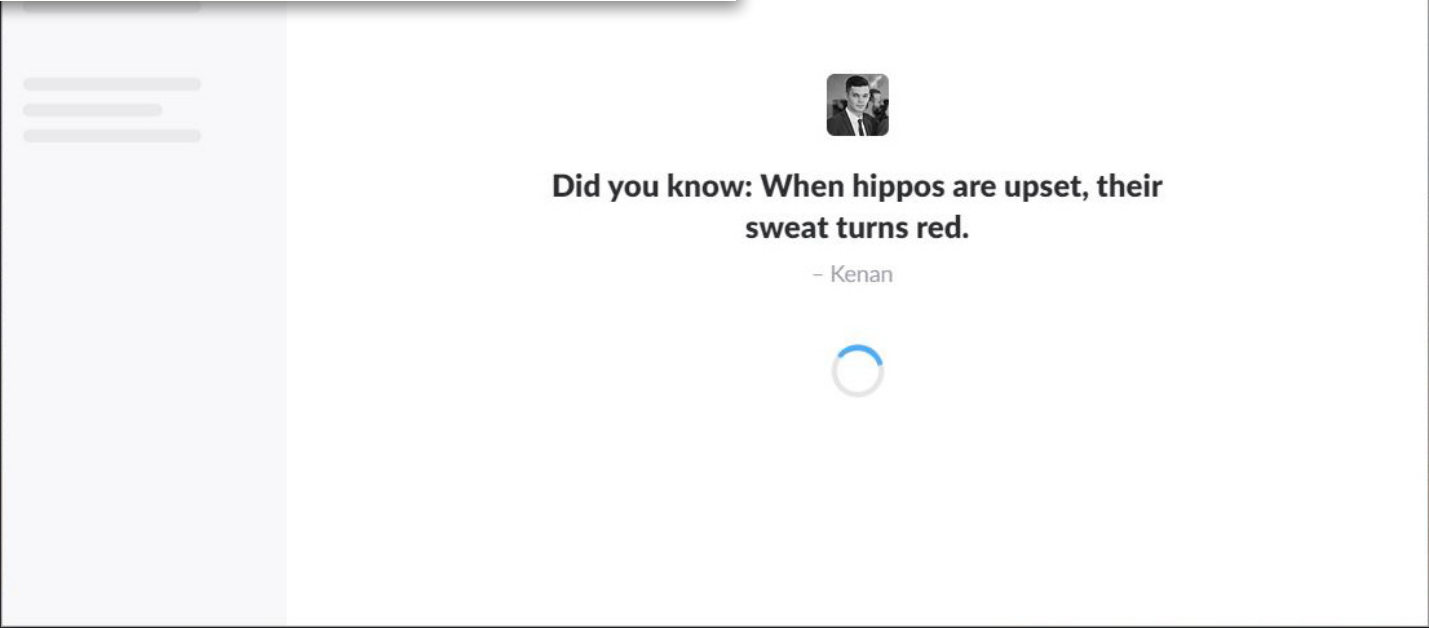
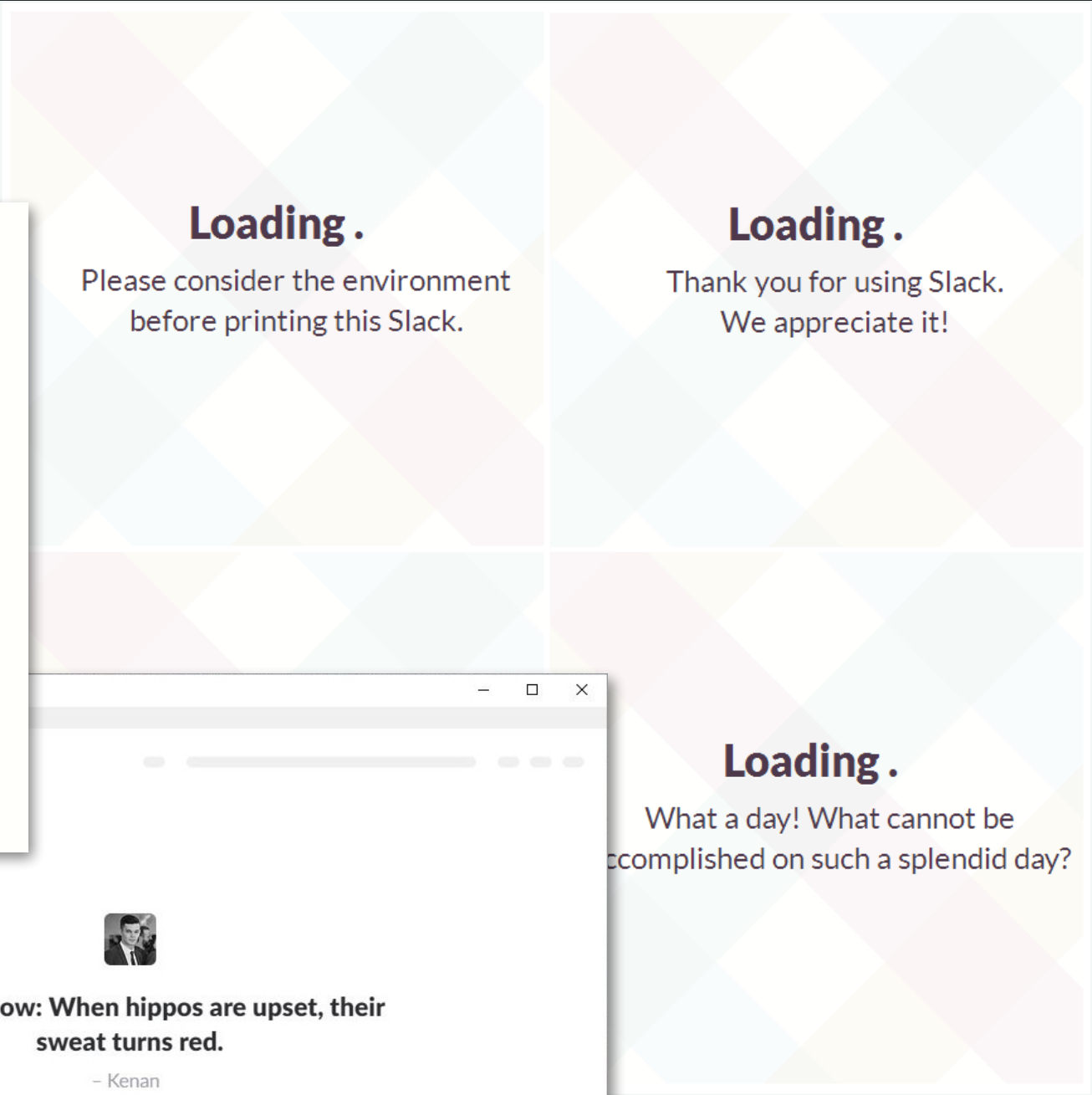
Tell the truth

**WHY DID YOU
SAY 5 MINUTES?**



- ✓ Generate phrases...
- ✓ Connect teammates...
- ✓ Cross 't's dot 'i's...







Loading
...

IRC loads faster than this...

converter_test.go · kubernet... x

Chelsea

← → ↺

https://sourcegraph.com/github.com/kubernetes/kubernetes/-/blob/pkg/c... ☆

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converter_test.go ▾ 🐙

github.com / kubernetes / kubernetes / pkg / conversion

```
105         t.Fatalf("expected no error")
106     }
107     if e, a := src, dest; !reflect.DeepEqual(e, a) {
108         t.Errorf("expected %#v, got %#v", e, a)
109     }
110 }
111
112 func TestConverter_MismatchedTypes(t *testing.T) {
```



Loading... x

```
113     c := NewConverter(DefaultNameFunc)
114
115     err := c.RegisterConversionFunc(
116         func(in []*string, out *int, s Scope) error {
117             if str, err := strconv.Atoi((*in)[0]); err != nil {
118                 return err
119             } else {
120                 *out = str
121                 return nil
122             }
123         },
124     )
125     if err != nil {
```

New Tab × Designs for indicating "working" × checkup.go · sourcegraph/che × mux.go · gorilla/mux · Sourceg × Chelsea

← → ↻ <https://sourcegraph.com/github.com/gorilla/mux/-/blob/mux.go#L39:6> 🔍 ☆ 📁 ⓘ 🌐 ⚙️

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mux.go ▾
github.com/gorilla/mux

40 // Configurable Handler to be used when no route matches.

41 **NotFoundHandler** **http.Handler**

Loading 35 references ...

42 // Parent route, if this is a subrouter.

43 **parent** **parentRoute**

44 // Routes to be matched, in order.

45 **routes** []***Route**

46 // Routes by name for URL building.

47 **namedRoutes** map[string]***Route**

48 // See Router.StrictSlash(). This defines the flag for new routes.

49 **strictSlash** **bool**

50 // See Router.SkipClean(). This defines the flag for new routes.

51 **skipClean** **bool**

52 // If true, do not clear the request context after handling the request.

53 // This has no effect when go1.7+ is used, since the context is stored

54 // on the request itself.

55 **KeepContext** **bool**

56 // see Router.UseEncodedPath(). This defines a flag for all routes.

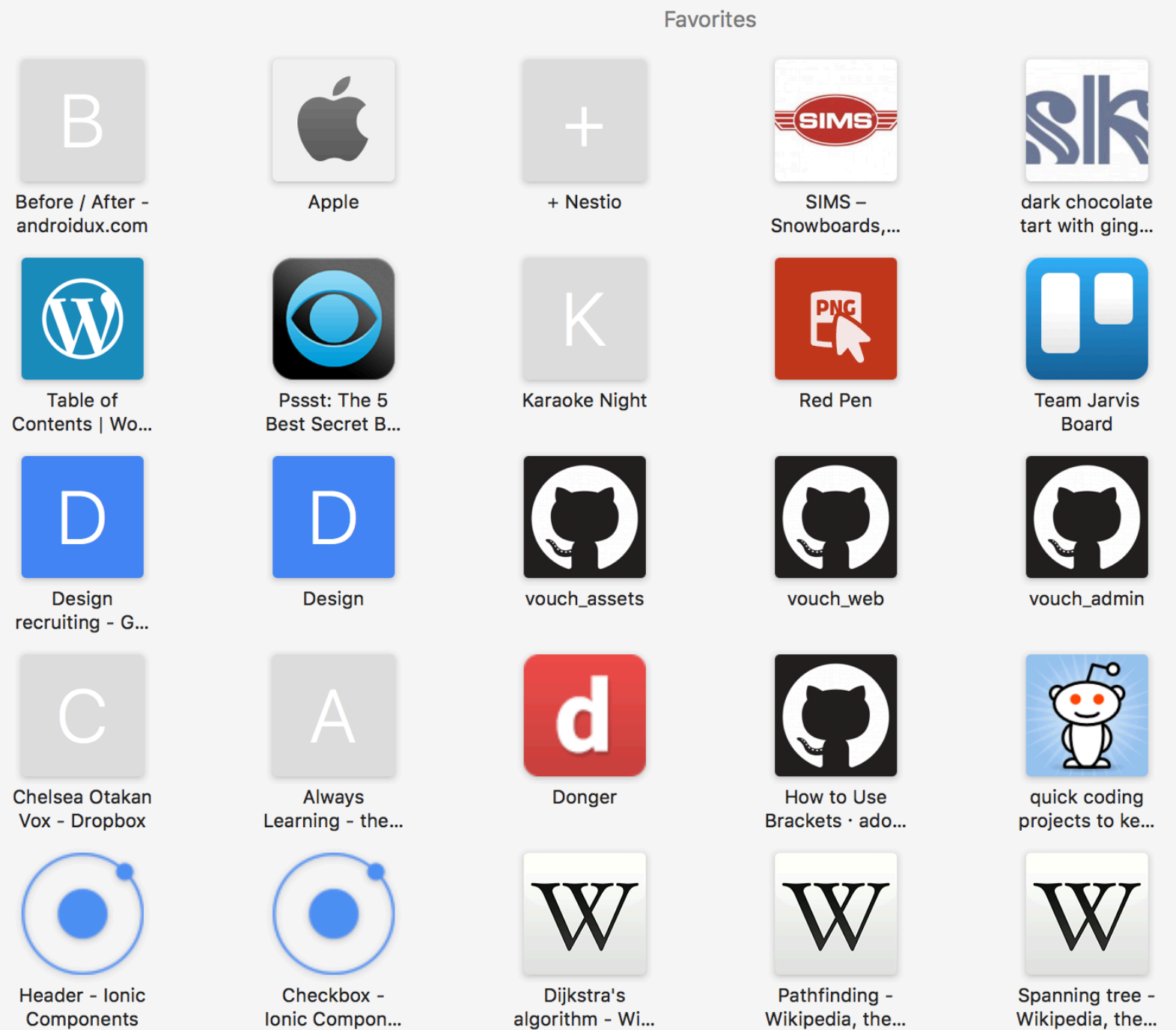
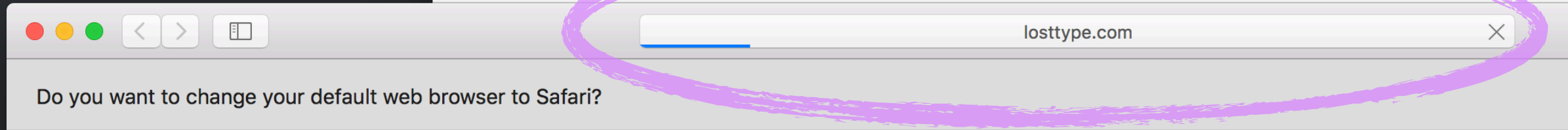
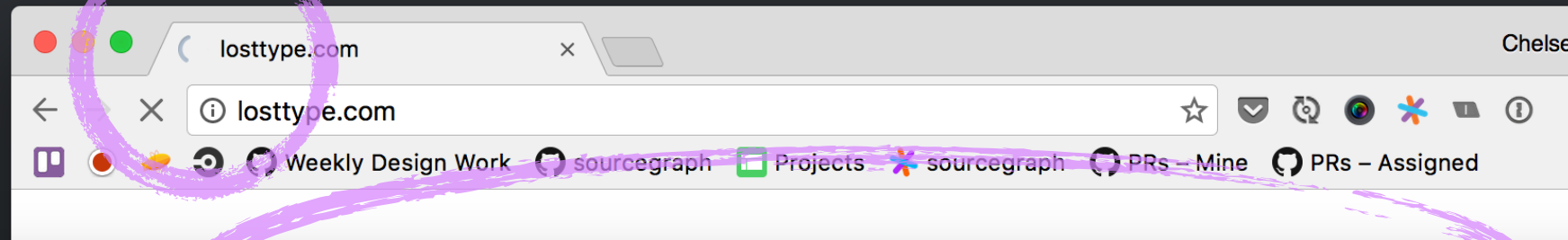
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Steven Levy

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Takeaways

**Fast response times mean
a lot to users, especially to
developers.**

**If a user needs to wait,
manage their expectations
by giving useful
information.**

**Performance is both a
design and engineering
concern. Treat it as such.**

Thanks