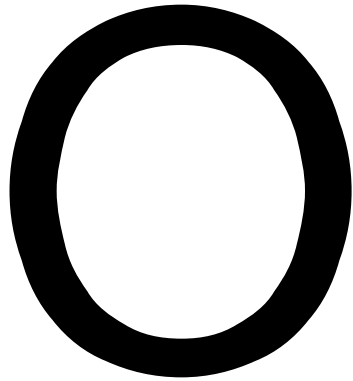
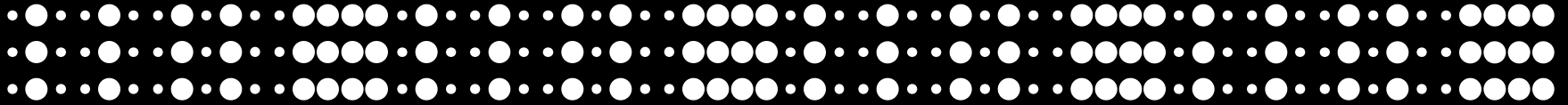


GOOGLE





Engaging User Experiences with Google App Engine

Lindsey Simon & John Skidgel
May 28, 2008



Who We Are

- Lindsey Simon, UX Developer App Engine Team
- John Skidgel, UX Designer App Engine Team



What We'll Cover

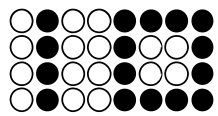
- Designer-developer workflow: play nice and increase efficiency
- Authentication: how, when, what, and where
- Latency: expires headers, file fingerprinting
- Defensive enhancement: enhance but don't break

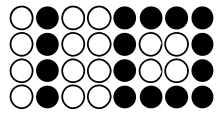
We'll cover all of this as we rebuild the guestbook demo application using App Engine, Django templates, and HTML/CSS/JavaScript

Get sample code at:

<http://code.google.com/p/wuzhere>



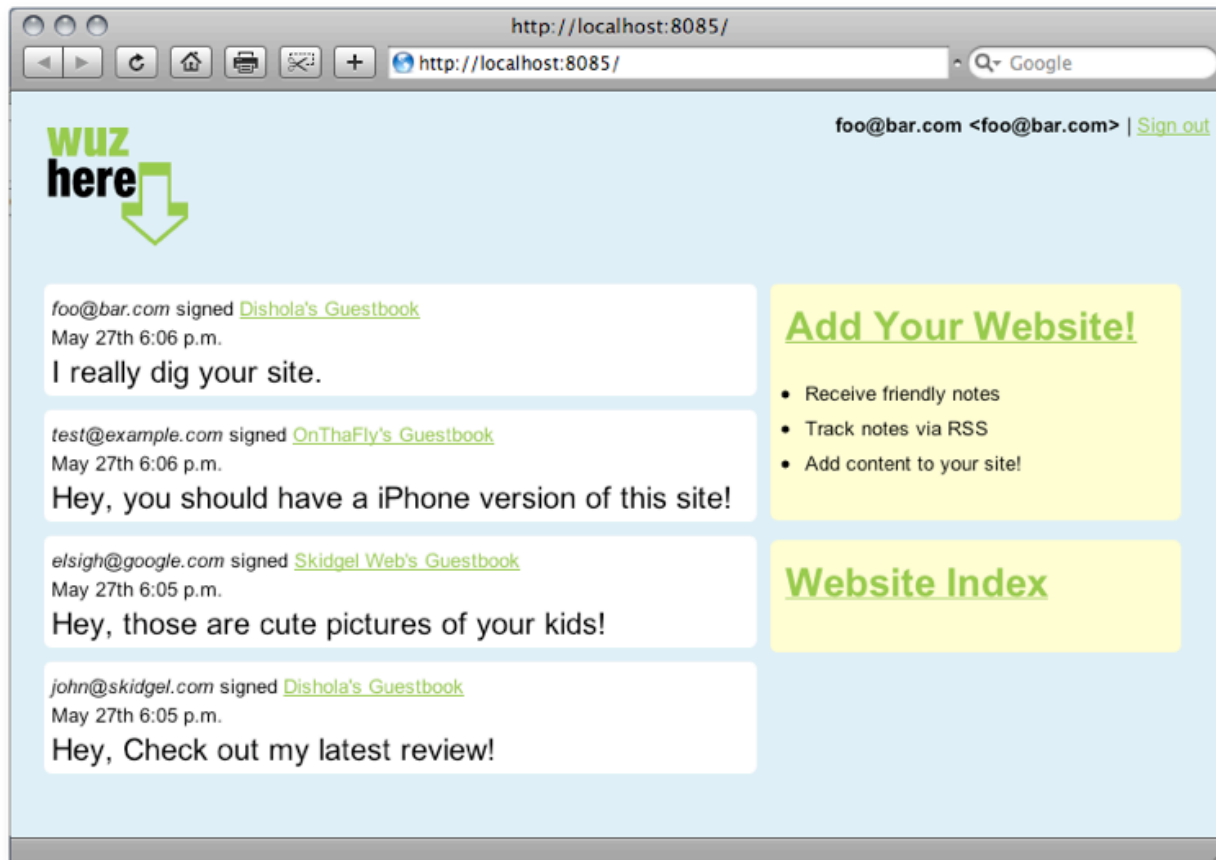


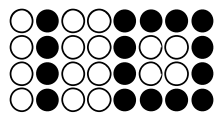


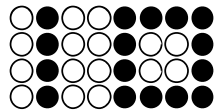
Before & After Demo

Guestbook After (wuzhere)

- Guestbooks are now per site (via Users API)
- Some redesign (interaction & visual)







Designer-Developer Workflow

“I need to find a design husband.”

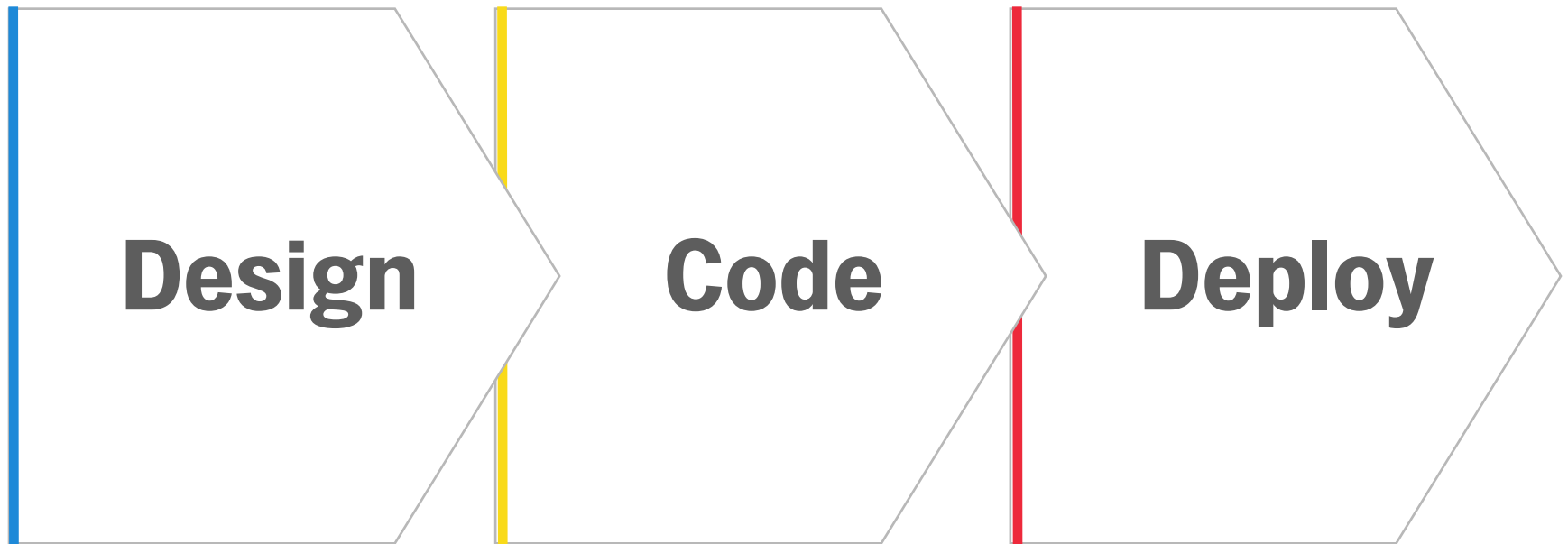
Simon Willison at SxSW '08

Designer and Developer Workflow

- App Engine is a great environment for collaboration and workflow
- Local testing and deployment are easy and consistent
 - 0 compilation
 - App Engine Launcher provides Mac OS X ease of use for designers
- SDK check keeps our environment up to date



Workflow Diagram

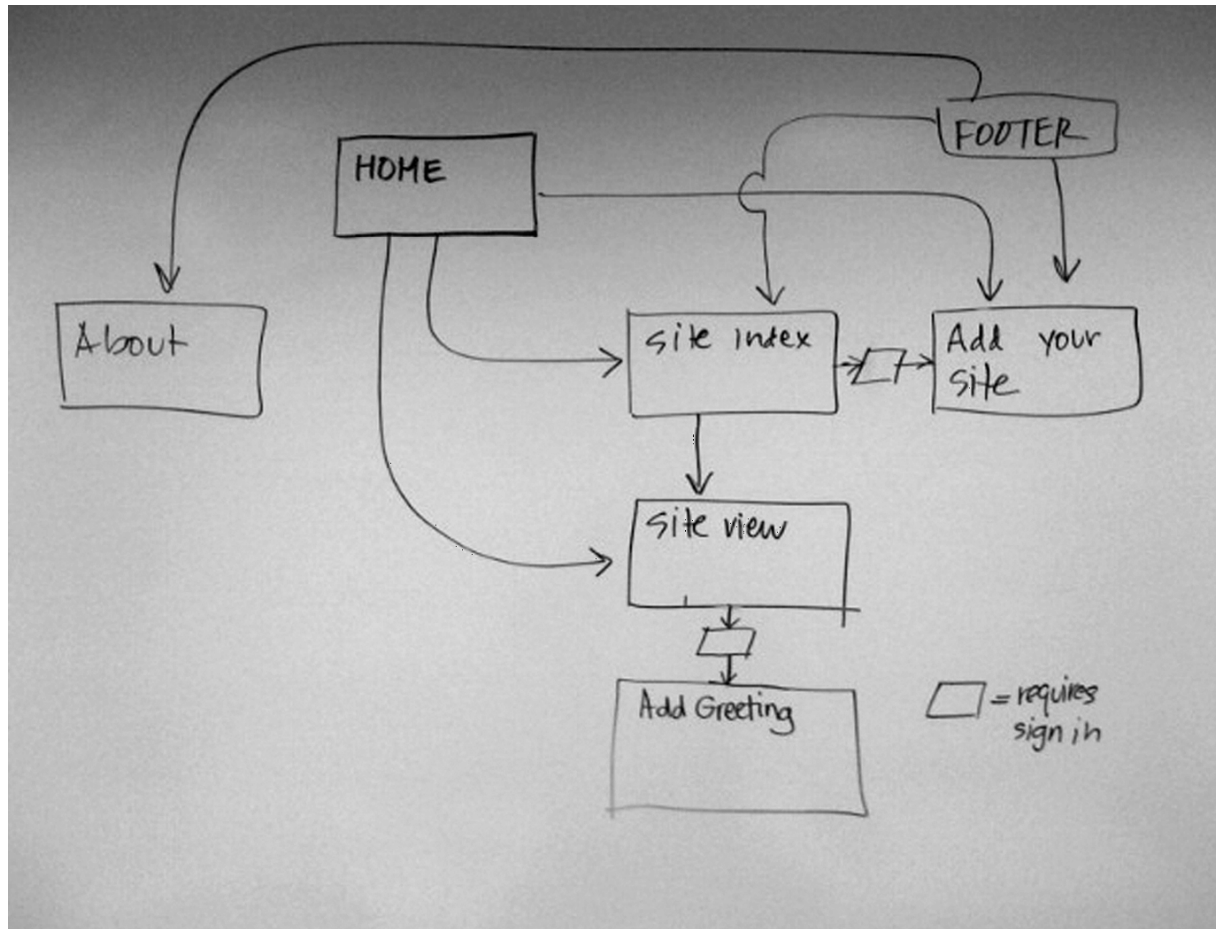


Design: Do Flows Together

- Important to do together
- It's iterative
- Can be real informal and quick

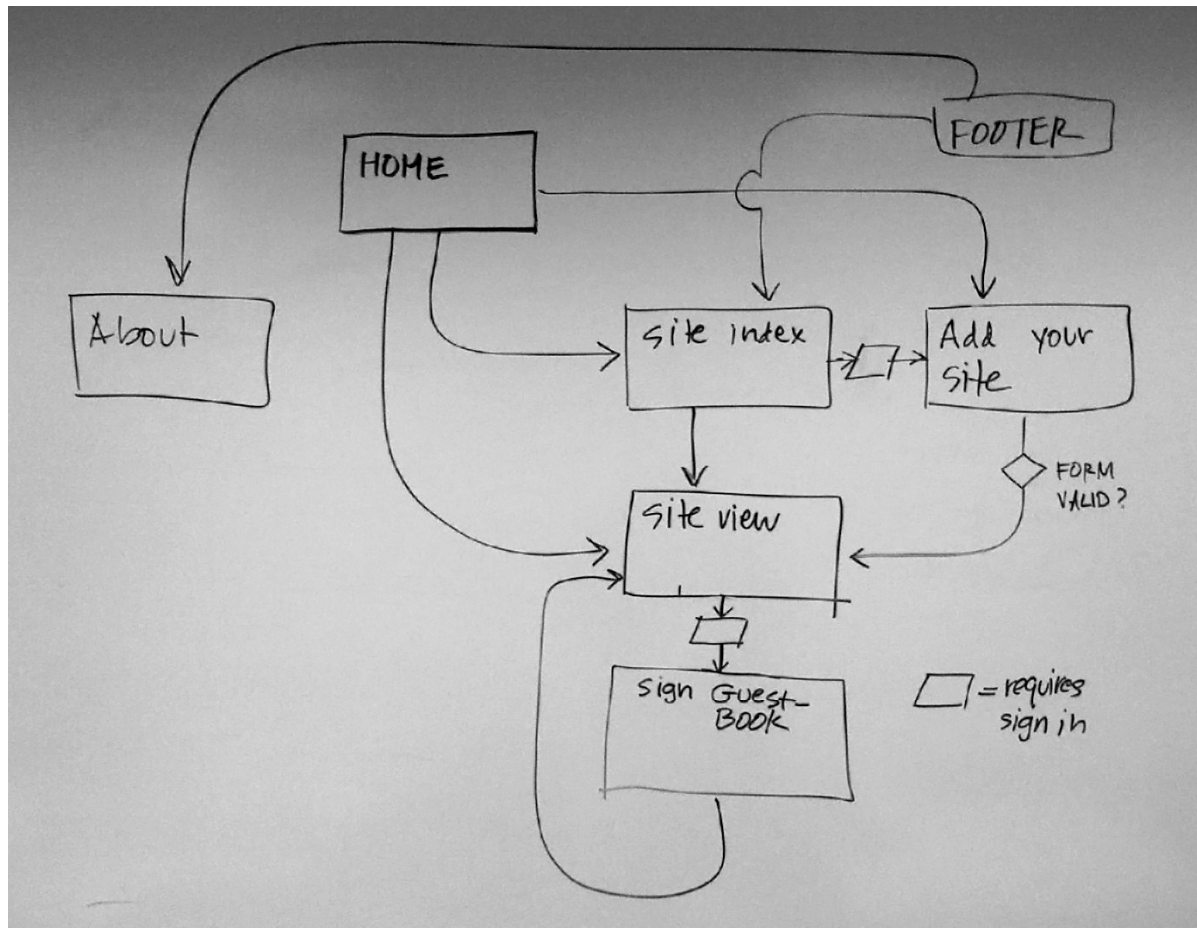


Design: Flow 1



Design: Flow 2

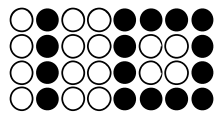
- Changed footer links
- Added validation and continuation paths

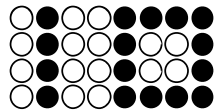


Design: Mocks

- Work in Photoshop or Fireworks
- Visual design and code are happening concurrently







Authentication

When to Authenticate

- To save information not to view information
- Don't make authentication a gating factor—you'll lose users



Authentication Options

Use the Users API to authenticate a:

- wide audience using Google Accounts.
- a narrow audience using Google Apps for your domain.

Or use none *or* roll your own authentication system.



Authentication and the App Engine Users API

The Users API affects how users register and authenticate.

- Applications that use Google Accounts, have a single link to sign in and register. Password retrieval is also on the sign in page.
- Applications that use Google Apps for Your Domain have a link to sign in, but it's the administrator's job to invite and register users.



Authentication Code

Python

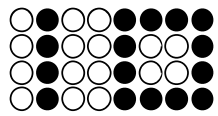
```
# Generic response handler
if params is None
    params = {}
if user:
    params['user'] = user
    params['sign_out'] = users.CreateLogoutURL('/')
    params['is_admin'] = (users.IsCurrentUserAdmin() and
                          'Dev' in os.getenv('SERVER_SOFTWARE'))
else:
    params['sign_in'] = users.CreateLoginURL(request.path)
# Later in the handler
user = users.GetCurrentUser()
if user is None:
    return http.HttpResponseRedirect(
        users.create_login_url(request.get_full_path()))
```

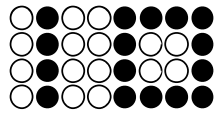


Authentication Code

Django Template HTML

```
{%if user%}
  <strong>{{user.nickname}} &lt;{{user.email}}&gt;</strong>
  {%if is_admin%} | <a href="/_ah/admin">Admin</a>{%endif%}
  {%if sign_out%} | <a href="{{sign_out}}">Sign out</a>{%endif%}
{% else %}
  {%if sign_in%}<a href="{{sign_in}}">Sign in</a>{%endif%}
{%endif%}
```





Latency

Decreasing Latency

Make your application feel snappy

- Create build rules to concatenate and minify CSS and JS
 - See <http://code.google.com/p/wuzhere/source/browse/trunk/deploy.sh>
- File fingerprinting
- Set expires headers



Latency Code Example

Python

```
# Sets a BUILD_VERSION variable for the templates to use.
# Default to production and then set to development if local.
BUILD = 'production'
if 'Dev' in os.getenv('SERVER_SOFTWARE'):
    BUILD = 'development'
params['BUILD'] = BUILD

# Sets the CURRENT_VERSION_ID for file fingerprinting.
params['CURRENT_VERSION_ID'] = os.getenv(['CURRENT_VERSION_ID'])
```



Latency Code Example

YAML

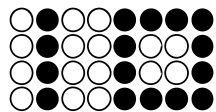
```
# If we match a version string, map to a static file
# and also send a far-future expires header for that version.
# i.e /js/wuz.1.24.js will send down the /static/js/wuz.js
# but with an Expires header of +10 years from today.
- url: /(js|css|img)/(.+)\.\d+\.\d+\.(js|css|png|gif|jpg)
  static_files: static/\1/\2.\3
  upload: /\1.*
  expiration: '3650d'

# Default static content url for those w/o versions.
- url: /(js|css|img)/(.*\.(js|css|png|gif|jpg))
  static_files: static/\1/\2
  upload: static/\1/\2
```



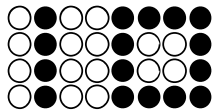


flickr user: oliver_fist





flickr user: oliver_fist



Defensive Enhancement

Defensive Enhancement

Make your application feel “richer”

- AJAX enhances UX by reducing the number of page refreshes and by adding cinematic-like experience.
- However, it can break the UX when JavaScript is disabled and there is no fall back.
- Enter ‘Progressive Enhancement’ or ‘Defensive Enhancement’



Defensive Enhancement Code

Python

```
from django.utils import simplejson
class MyHandler(BaseRequestHandler):
    def get(self):
        output = self.request.get('output')
        if output == 'json':
            # Look, you could even change the headers if you like.
            self.response.headers['Content-Type'] = 'application/json'
            self.response.out.write(simplejson.dumps(template_values))
        # html is the default
        else:
            directory = os.path.dirname(__file__)
            # Assumes you have the file templates/template.html
            path = os.path.join(directory,
                                os.path.join('templates', 'template.html'))
            self.response.out.write(template.render(path,
                                                    template_values))
```



Defensive Enhancement Code

JavaScript

```
// PseudoCode here
var link = document.getElementById('mylink');
if (XHRisSupported && link) {
    // Hijack click event and preventDefault()
}
```



GOOGLE

