Customizing the Django Admin

When the Django Admin fails and what you can do to fix it

Peter Baumgartner Founder, Lincoln Loop

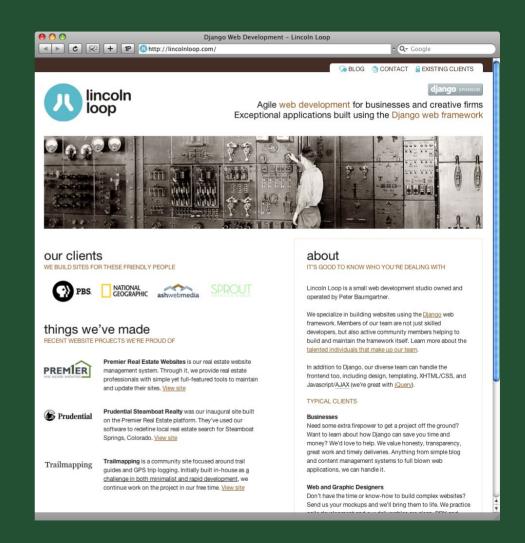
Michael Trythall
User Experience Director, Lincoln Loop

EuroDjangoCon - May 5, 2009

About Lincoln Loop

- Django Corporate Sponsor
- Open source contributer
- Services:
 - Development
 - Prototyping
 - Consulting
 - Training

http://lincolnloop.com



Overview

- User Interface is important
- Default Admin UI is one-size-fits-all.
 User experience is not.
- What can we do to improve upon it?
- How do we implement those improvements?

(Some) Problems We Face

- Clients want control over their web site
- Clients don't want to pay for a minor changes
- Clients often lack technical knowledge
- Clients may not have specifications (just ideas)
- Limited project and developer time
- Etc, etc...

Problems with New, Custom Systems

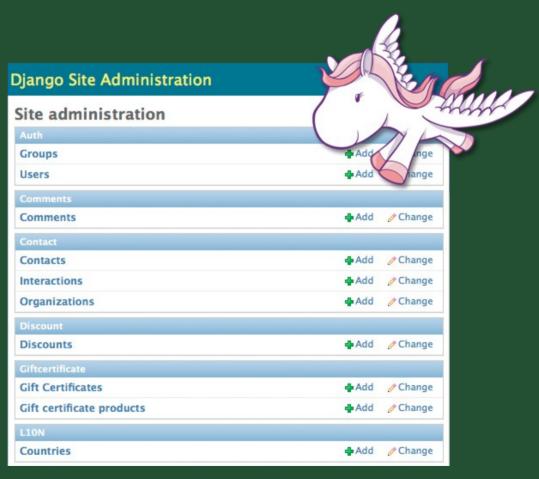
"Easy is Hard"
- Peter Lewis, NY Times

- Time consuming Research, Specs, Dev, Test
- Hard to tell right from wrong
- Good chance you might not nail it
- Reinventing the wheel in most cases

So, What's the Solution?

Leverage the Django Admin!

Yay Ponies!



The Good News

- Handful of reusable apps that alleviate some of the pain
- Admin is easy to extend, customize, etc.
- Djangonauts are thinking about these problems
- Lots of core functionality already exists in the admin

Why Care About UI?

Because...

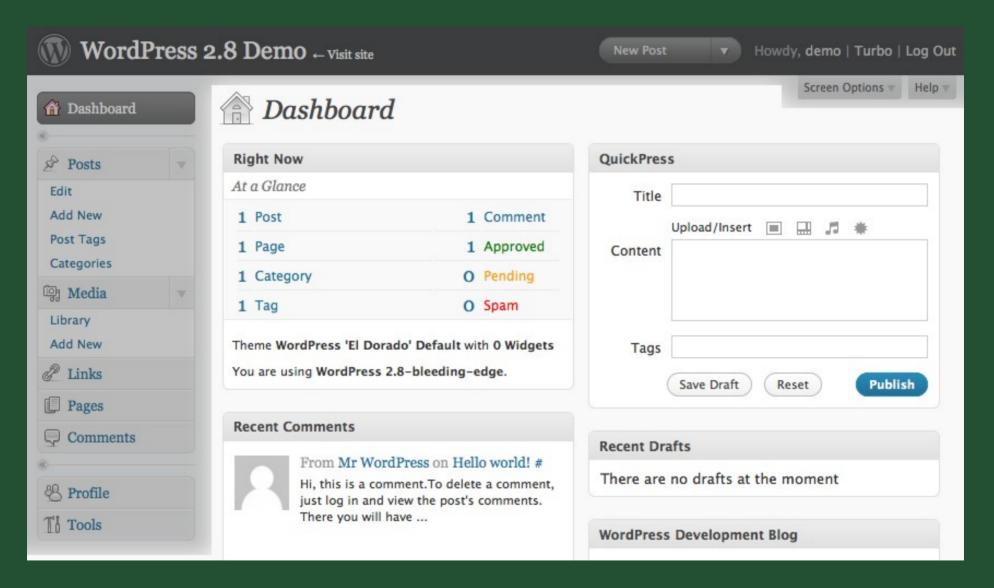
- UI is the gateway to application logic
- Users remember bad experiences
- Good experiences = Happy Customers = Profit!
- Contributing helps Django mature
- Good UI reduces the need for documentation
 & support, but isn't a complete substitute!

Problems with the Default Admin

Not Informative or Assistive

- No dashboard, statistics, or recent (user) activity
- No actions (or models) highlighted or given priority
- No assistance/help for beginner users
- Impact from changes is not always clear
- Disconnect from external systems

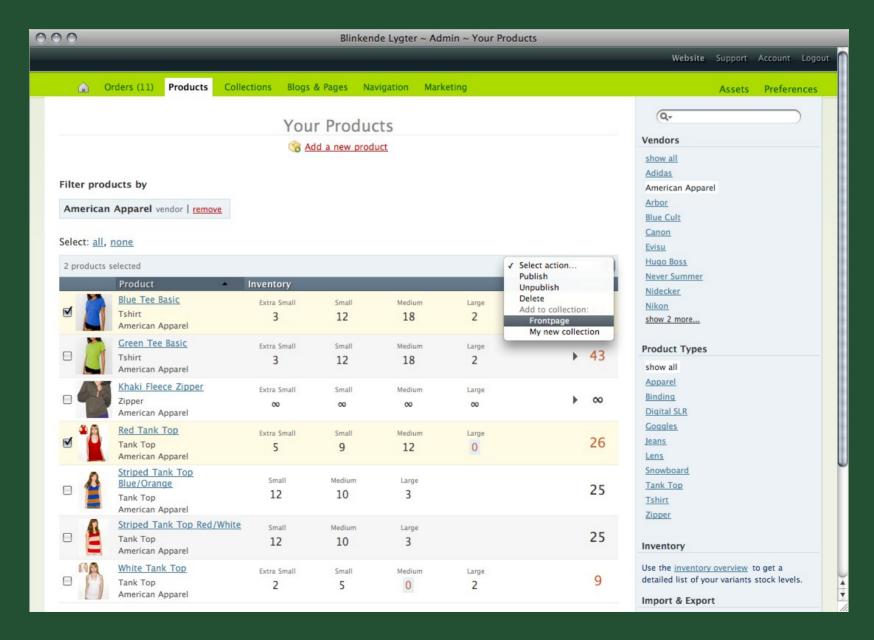
Dashboard & Primary Actions Example



Doesn't Fit Into Customer Mental Models

- Relationships (e.x. hierarchy) not intuitive
- Apps are not organized by context
- Little (or no) navigation outside of breadcrumbs
- Doesn't mimic familiar process and workflow

Grouping & Navigation Done Right



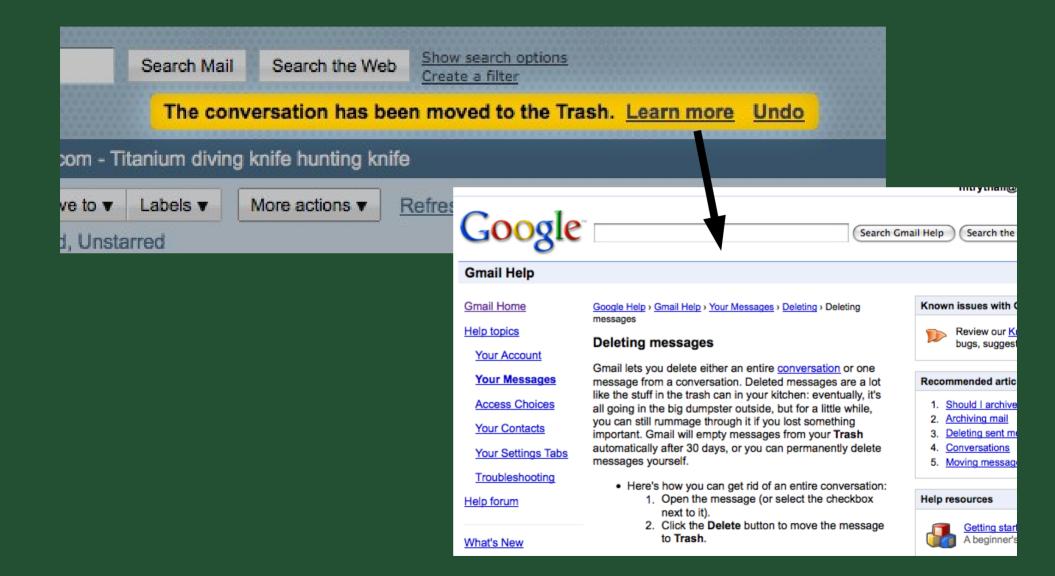
Admin Clutter

Site administration		
Auth		Recent Actions (show)
Groups	4 Add 🧳 Change	Satchmo Orders (hide)
Users	4 Add 🥜 Change	New Orders
Comments		Orders in Process
Comments	♣ Add // Change	View all Orders
Contact		Admin Tools (hide)
Contacts	4 Add 🥜 Change	■ Edit Site Settings
Interactions	🛖 Add 🧳 Change	 Export Products as CSV Edit Inventory
Organizations	♣ Add 🕜 Change	■ Export Product Defs
Discount		 Product Variation Manager Cache Status
Discounts	4 Add 🥜 Change	
Giftcertificate		
Gift Certificates	4 Add 🧳 Change	
Gift certificate products	♣ Add // Change	
L10N		
Countries	4 Add 🥜 Change	
Newsletter		
Subscriptions	🛖 Add 🥜 Change	
Payment		
Payment Options	♣ Add 🕜 Change	
Product		

Missing Features

- Missing common web tools like WYSIWYG, file management, etc
- Difficult to recover from actions (no undo)
- Better management for complicated models
- Project-wide search

Undo & Help Example



Poor Display for Complex Models

	Meta description for this product					
Item Dimensions	(Hide)					
Length: Width units:	Lengt	h units: Height:	Width: Height units:			
Weight:	Weigh	nt units:				
Tax (Hide)						
☐ Taxable						
Tax Class: If it is taxable, what kind of tax?						
Related Products						
Related Items:	A really neat book A really neat book (Hard cover) A really neat book (On tape) A really neat book (Soft cover) Django Rocks shirt Django Rocks shirt (Large/Black) Django Rocks shirt (Large/Blue) Django Rocks shirt (Large/White) Django Rocks shirt (Medium/Black) Django Rocks shirt (Medium/Blue) Django Rocks shirt (Medium/Blue) Django Rocks shirt (Medium/White)	ф				

Field Count

(\$('input').length - \$('input:hidden').length) + \$('select').length + \$('textarea').length 65

Planning Customizations

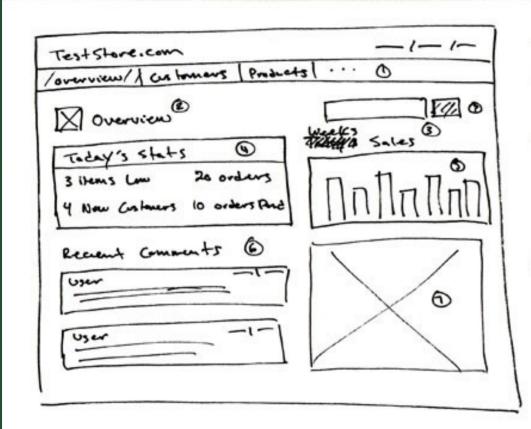
Get to Know Your Customer

- Learn (or ask) about the industry, workflow, etc.
- Understand the needs of the different roles on the Customer's team
- Put yourself in their shoes (empathy)
- Learn the lingo, use it in your designs (laptop vs. notebook)
- Learn about previously used tools, pros and cons

Brainstorming

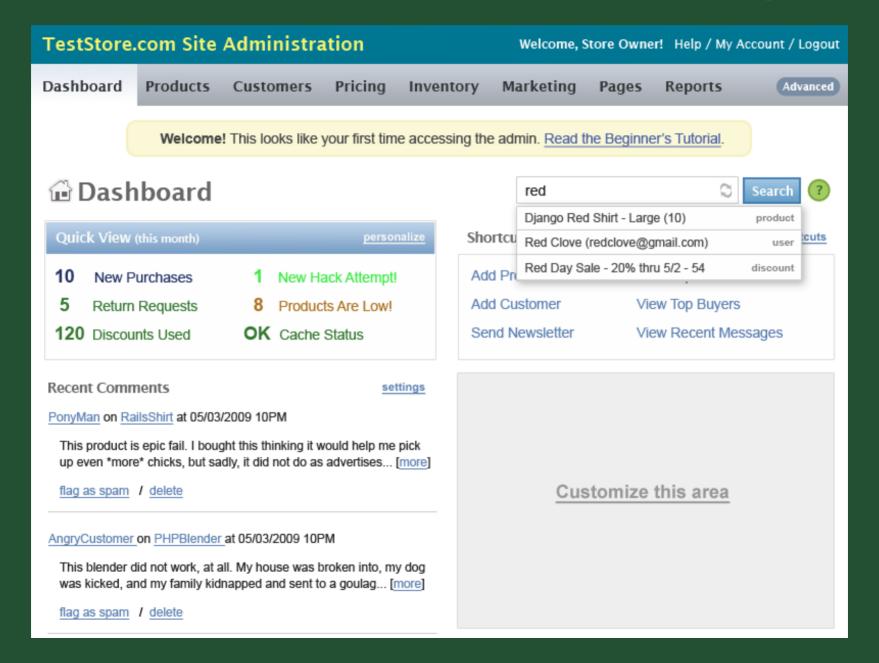
- Welcome all ideas, decide on what's reasonable
- Embrace sketches to convey ideas and for clarification
- Get feedback early and often on ideas, even in development
- Don't be afraid to prototype with code
- Leverage proven UI design patterns

Sketch Example

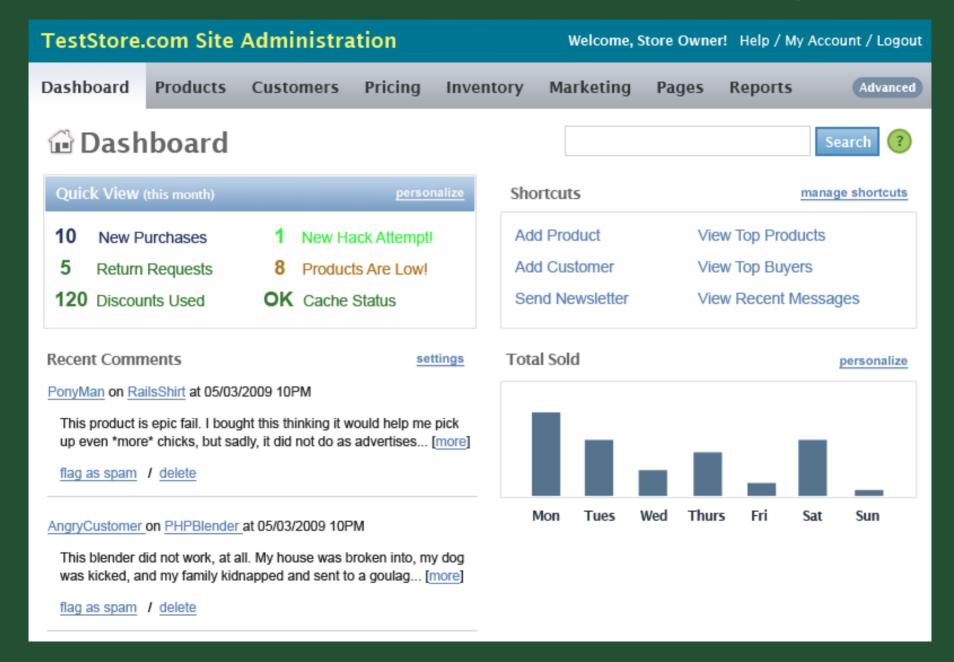


- 1 Tabbed Navigation
- (averview -> Pashboard)
- 3 Site / Smart Search
- Today's Quick state with links to various views
- (5) This week's (configurable) sites information. To) jle, between week, month
- 6 Comments to review (!)
- 6 Anything else

Satchmo Dashboard Concept



Satchmo Dashboard Concept



Implement!

Customization Options

- 1. ModelAdmin media
- 2. Custom templates
- 3. ModelAdmin/ModelForm hacking
- 4. Custom views

Low Hanging Fruit For the Win



http://www.flickr.com/photos/11263821@N05/2224626086

ModelAdmin Media

ModelAdmin Media Code

```
class ArticleAdmin(admin.ModelAdmin):
    class Media:
        css = {
             "all": ("my_styles.css",)
        }
        js = ("my_code.js",)
```

ModelAdmin Media Examples

- JavaScript
 - WYSIWYG Editor
 - AJAX
 - Fancy Inlines (drag & drop, dynamic add/delete)
 - http://tinyurl.com/add-remove-inlines
 - http://www.djangosnippets.org/snippets/1053/
 - Inject HTML
- CSS
 - Colors
 - Layout

ModelAdmin Media Pros & Cons

- Pros:
 - Easy for one-off projects
- Cons:
 - Requires Javascript
 - Only works for the Change Form
 - Difficult to bundle as reusable app

Custom Templates

Custom Templates

- django.contrib.admin is a "reusable application"
- Key templates:
 - admin/base.html
 - admin/index.html
 - admin/change_form.html
 - admin/change_list.html

Per Project/App/Model Templates

Templates can be overridden:

- Across an entire project admin/change_form.html
- Across an application
 admin/<my_app>/change_form.html
- For an individual model
 admin/<my_app>/<my_model>/change_form.html

Custom Template Example

demo_app/templates/admin/demo_app/change_list.html

```
{% extends
"admin/change_list.html" %}
{% block object-tools %}
    <h1 class="errornote">
        Look Here!
    </h1>
    {{ block.super }}
{% endblock %}
```



Custom Template Tips

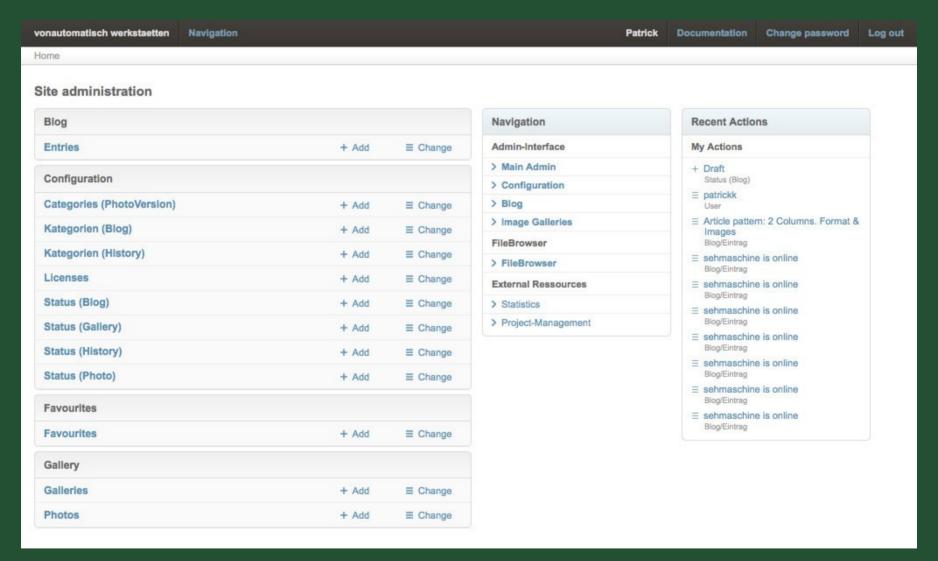
- Extend, don't override
- Use {{ block.super }} to extend blocks
- Extend a symlink of the admin templates in the event of recursion
- Extend the extrahead block in base.html for admin-wide media

Custom Templates in the Wild

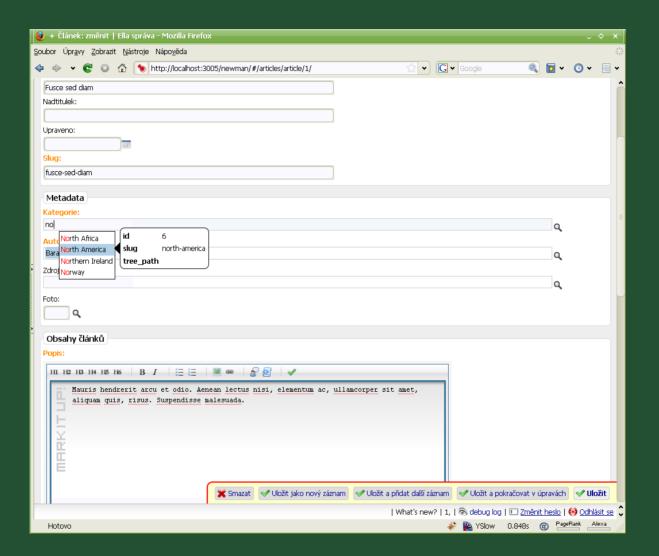
sorl-curator

CHANGE PASSWORD | LOG OUT Administration Welcome, sori. Site administration DON'T TOUCH THIS STUFF RECENT ACTIONS My Actions Sites Add Administer all the different sites here. None available USERS & GROUPS Users Add Groups Add PAGES & NEWS Pages Add Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. News ♣Add

django-grapelli

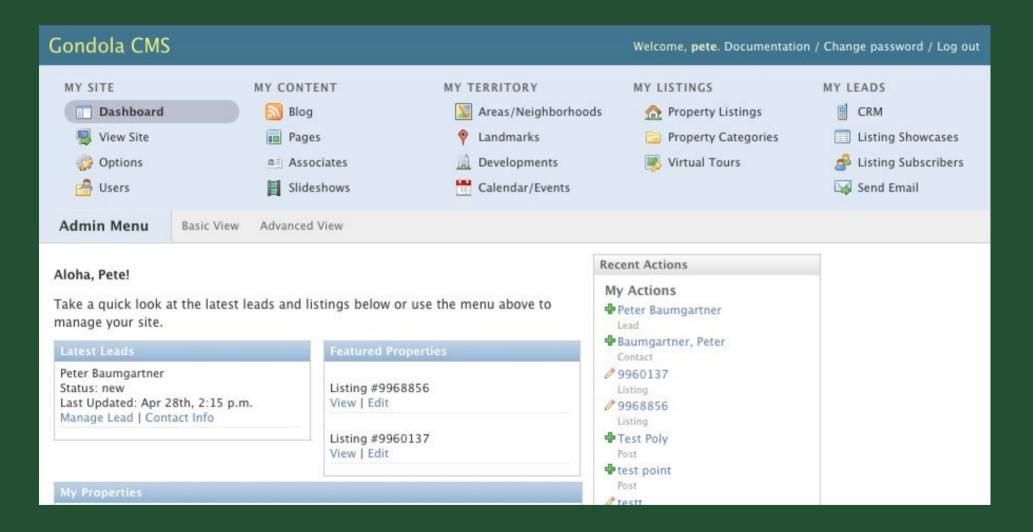


ella



http://github.com/ella/ella

Gondola



Custom Template Pros & Cons

- Pros
 - Easy
 - Touches every admin view
 - No additional work to bundle with reusable apps
- Cons
 - Mostly cosmetic (not functional) changes

ModelAdmin/ModelForm Hacking

ModelAdmin/ModelForm Hacking

- New in Django 1.0 (newforms-admin)
- Old stuff (list_display, fields, ordering, etc.)
- New stuff (exclude, inlines, form, etc.)
- Really New stuff (list_editable, actions, etc.)

Reregistering a ModelAdmin

```
from django.contrib import admin
from django.contrib.auth.admin import UserAdmin
from demo_app.models import UserProfile
class UserProfileInline(admin.TabularInline):
    model = UserProfile
    fk_name = 'user'
    max_num = 1
class CustomUserAdmin(UserAdmin):
    inlines = [UserProfileInline, ]
admin.site.unregister(User)
admin.site.register(User, CustomUserAdmin)
```

Row-level Permissions

```
class ArticleAdmin(admin.ModelAdmin):
 def save_model(self, request, obj, form,
                                         change):
    obj.user = request.user
    obj.save()
 def queryset(self, request):
    qs = self.model._default_manager.filter(
                               user=request.user)
    return as
```

ModelForms

- Much of ModelAdmin's functionality is a wrapper around ModelForm
- If you can't do it in ModelAdmin, chances are ModelForm can help
- Pulled directly from django.forms and no different in functionality

ModelFoms Example

```
class AuthorForm(forms.ModelForm):
    exclude_states = ['AS', 'GU', 'MP', 'VI',]
    def __init__(self, *args, **kwargs):
        super(AuthorForm, self).__init__(*args,
                                       **kwaras)
        w = self.fields['state'].widget
        choices = []
        for key, value in w.choices:
            if key not in self.exclude_states:
                choices.append((key, value))
        w.choices = choices
class AuthorAdmin(admin.ModelAdmin):
    form = AuthorForm
```

Caution: Here be Dragons



http://www.flickr.com/photos/sharynmorrow/3019436/

ModelAdmin/ModelForm Tips

- The further you dig, the less documentation you'll find
- Don't be afraid to study the source:
 - django.contrib.admin.sites.AdminSite
 - django.contrib.admin.options.ModelAdmin
 - django.forms.models.ModelForm
 - django.contrib.admin.options.InlineModelAdmin
 - django.forms.formsets
- Use a debugger for sanity (ipdb.set_trace())

ModelAdmin/ModelForm Pros & Cons

Pros

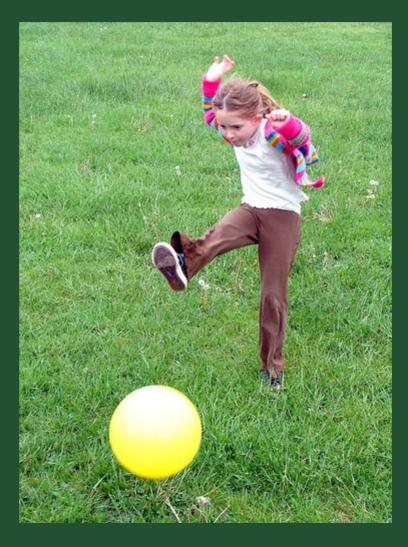
- Flexible
- Powerful
- No additional work to bundle with reusable apps

Cons

- Gets complex quickly
- May require getting familiar with undocumented Django internals

Custom Views

When in Doubt, Punt



http://www.flickr.com/photos/bobtravis/485216368/

Custom Views

- The admin just wasn't built to do some things
- Other things simply aren't worth the trouble
- Build your own view and plug it into the admin

Custom View URL

```
class PostAdmin(admin.ModelAdmin):
    def my_view(self, request):
        return admin_my_view(request,
                                     self)
    def get_urls(self):
        urls = super(PostAdmin,
                      self).get_urls()
        my_urls = patterns('',
            (r'^my_view/$', self.my_view)
        return my_urls + urls
```

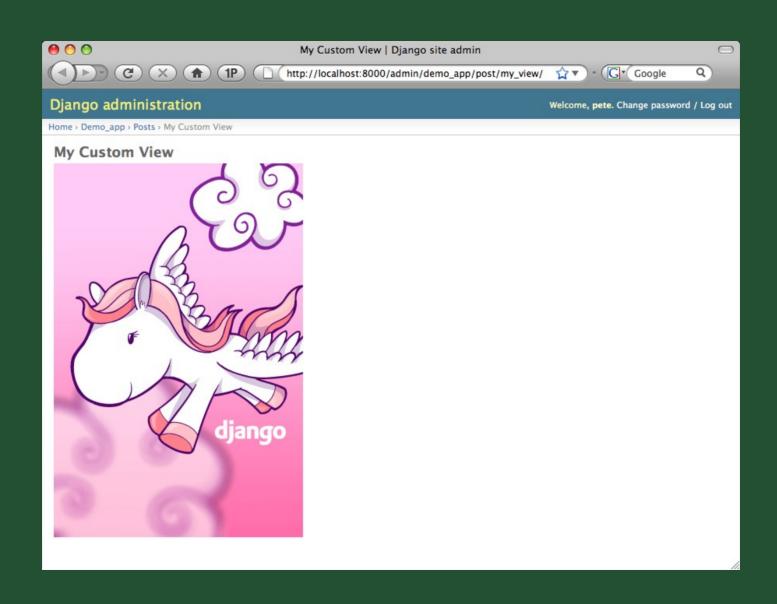
Custom View

```
@permission_required('blog.add_post')
def admin_my_view(request, model_admin):
    opts = model_admin.model._meta
    admin_site = model_admin.admin_site
    has_perm = request.user.has_perm(opts.app_label \
                  + '.' + opts.get_change_permission())
    context = {'admin_site': admin_site.name,
        'title': "My Custom View",
        'opts': opts,
        'root_path': '/%s' % admin_site.root_path,
        'app_label': opts.app_label,
        'has_change_permission': has_perm}
    template = 'admin/demo_app/admin_my_view.html'
    return render_to_response(template, context,
              context_instance=RequestContext(request))
```

Custom View Template

```
{% extends "admin/base_site.html" %}
{% load i18n %}
{% block breadcrumbs %}
<div class="breadcrumbs">
    <a href="../../">{% trans "Home" %}</a> &rsaquo;
    <a href="../../">{{ app_label|capfirst|
escape }}</a> &rsaquo;
    {% if has_change_permission %}<a
href="../">{{ opts.verbose_name_plural!
capfirst }}</a>{% else %}{{ opts.verbose_name_plurall
capfirst }}{% endif %} › My Custom View
</div>
{% endblock %}
{% block content %}
   <!-- do stuff here -->
{% endblock %}
```

Custom View Example



Custom View Pros & Cons

Pros

- More flexible
- More powerful
- No additional work to bundle with reusable apps

Cons

- Can be tricky to integrate into workflow
- You're on your own to validate forms, build templates, etc.

Review

- Ul is important. Think about your end-user
- Think about your users, not your database
- Newforms-admin gives you hooks for lots of easy wins

Questions

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