

## Who's using Django?





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#### **Meet Diango**

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design.

Developed by a fast-moving online-news operation, Django was designed to handle two challenges: the intensive deadlines of a newsroom and the stringent requirements of the experienced Web developers who wrote it. It lets you build high-performing, elegant Web applications quickly.

Django focuses on automating as much as possible and adhering to the <u>DRY principle</u>.

Dive in by reading the overview →

When you're ready to code, read the installation guide and tutorial.

#### The Django framework

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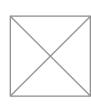
## **Object-relational mapper**

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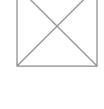
## **Template system**

Use Django's powerful, extensible and designer-friendly template language to separate design, content and Python code.



#### **Automatic admin interface**

Save yourself the tedious work of creating interfaces for people to add and update content. Django does that automatically, and it's production-ready.



#### Cache system

Hook into memcached or other cache frameworks for <u>super performance</u> — caching is as granular as you need.



#### **Elegant URL design**

Design pretty, cruft-free URLs with no framework-specific limitations. Be as flexible as you like.



#### Internationalization

Django has full support for multi-language applications, letting you specify translation strings and providing hooks for languagespecific functionality.

#### Weblog

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Django Q&A	<b>•</b>
New / updated Django packages	•
Django jobs	<b>•</b>
Django links	<b>•</b>

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Documentation

Download

Community

Code

About

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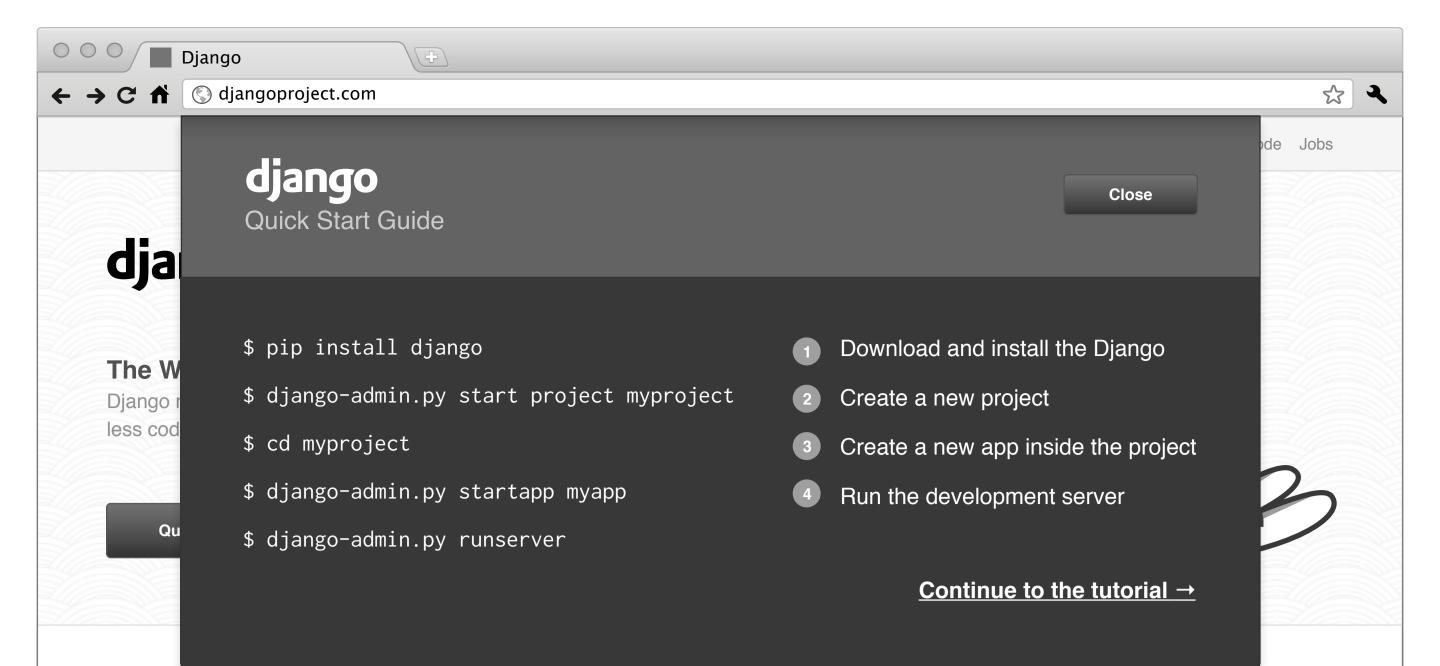


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Writing your first Django app



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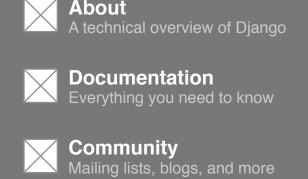
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## django

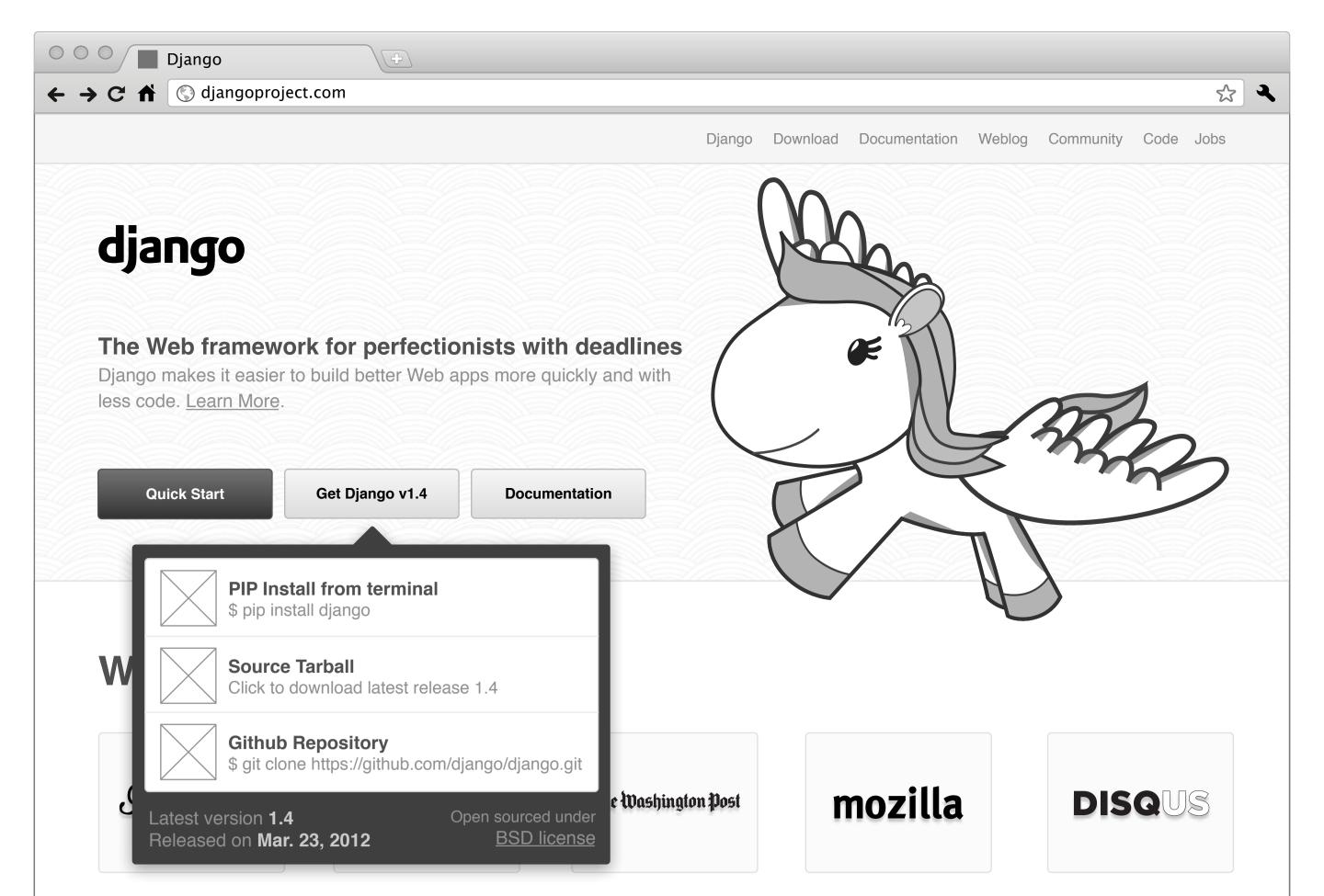












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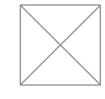
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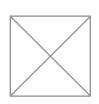
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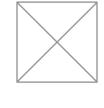
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Documentation

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Code

About A technical overview of Django

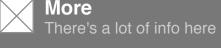
**Documentation** 

Mailing lists, blogs, and more



Installation Guide Getting Django installed





**Q** Search

Django 1.4

**Quick example** 

**Using models** 

**Fields** 

Field types

Field options

Relationships

Automatic primary key fields

Many-to-one relationships

Extra fields on many-to-

One-to-one relationships

many relationships

Models across files

Custom field types

Meta options

**Model methods** 

Model inheritance

Field name restrictions

Many-to-many relationships

Verbose field names

 $\blacksquare$ 

Models

A model is the single, definitive source of data about your data. It contains the essential fields and behaviors of the data you're storing. Generally, each model maps to a single database table.

The basics:

- Each model is a Python class that subclasses django.db.models.Model.
- Each attribute of the model represents a database field.
- With all of this, Django gives you an automatically-generated database-access API; see Making queries.

#### **Quick example**

This example model defines a Person, which has a first\_name and last\_name:

```
from django.db import models

class Person(models.Model):
    first_name = models.CharField(max_length=30)
    last_name = models.CharField(max_length=30)
```

first\_name and last\_name are fields of the model. Each field is specified as a class attribute, and each attribute maps to a database column.

The above Person model would create a database table like this:

```
CREATE TABLE myapp_person (
    "id" serial NOT NULL PRIMARY KEY,
    "first_name" varchar(30) NOT NULL,
    "last_name" varchar(30) NOT NULL
);
```

Some technical notes:

The name of the table, myapp\_person, is automatically derived from some model metadata but can be overridden. See Table names for more details..

An id field is added automatically, but this behavior can be overridden. See Automatic primary key fields. The CREATE TABLE SQL in this example is formatted using PostgreSQL syntax, but it's worth noting Django uses SQL tailored to the database backend specified in your settings file.

#### Using models

Once you have defined your models, you need to tell Django you're going to use those models. Do this by editing your settings file and changing the INSTALLED\_APPS setting to add the name of the module that contains your models.py.

For example, if the models for your application live in the module mysite.myapp.models (the package structure that is created for an application by the manage.py startapp script), INSTALLED\_APPS should read, in part:

```
INSTALLED_APPS = (
    #...
    'mysite.myapp',
    #...
)
```

When you add new apps to INSTALLED\_APPS, be sure to run manage.py syncdb.

#### Fields

The most important part of a model -- and the only required part of a model -- is the list of database fields it defines. Fields are specified by class attributes.

Example:

```
class Musician(models.Model):
    first_name = models.CharField(max_length=50)
    last_name = models.CharField(max_length=50)
    instrument = models.CharField(max_length=100)

class Album(models.Model):
    artist = models.ForeignKey(Musician)
    name = models.CharField(max_length=100)
    release_date = models.DateField()
    num_stars = models.IntegerField()
```

#### Fields

Each field in your model should be an instance of the appropriate Field class. Django uses the field class types to determine a few things:

- The database column type (e.g. INTEGER, VARCHAR).
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- The widget to use in Django's admin interface, if you care to use it (e.g. <input type="text">, <select>).
- The minimal validation requirements, used in Django's admin and in automatically-generated forms.

Django ships with dozens of built-in field types; you can find the complete list in the model field reference. You can easily write your own fields if Django's built-in ones don't do the trick; see Writing custom model fields.

#### Field options

Each field takes a certain set of field-specific arguments (documented in the model field reference). For example, CharField (and its subclasses) require a max\_length argument which specifies the size of the VARCHAR database field used to store the data.

There's also a set of common arguments available to all field types. All are optional. They're fully explained in the reference, but here's a quick summary of the most often-used ones:

<u>null</u>

If True, Django will store empty values as NULL in the database. Default is False.

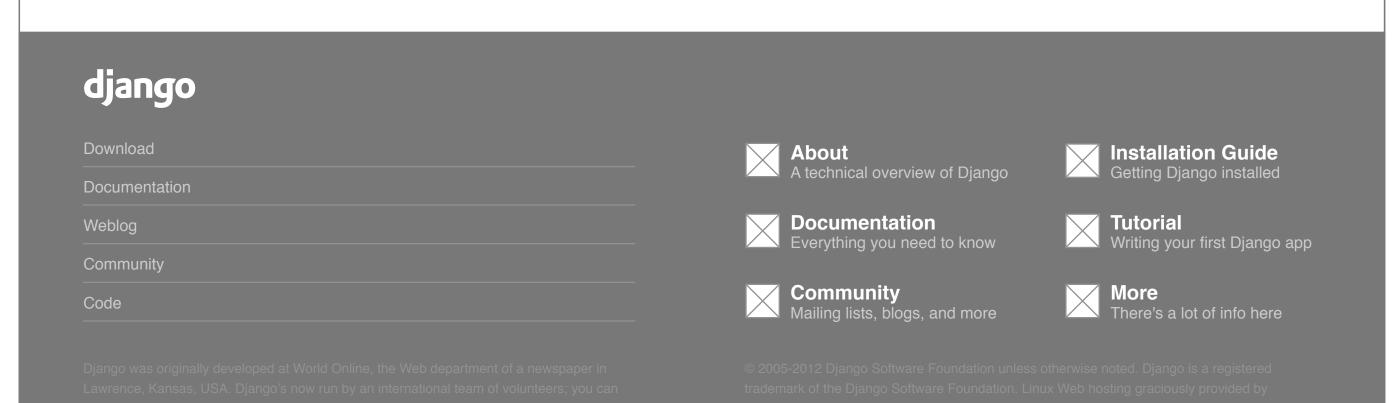
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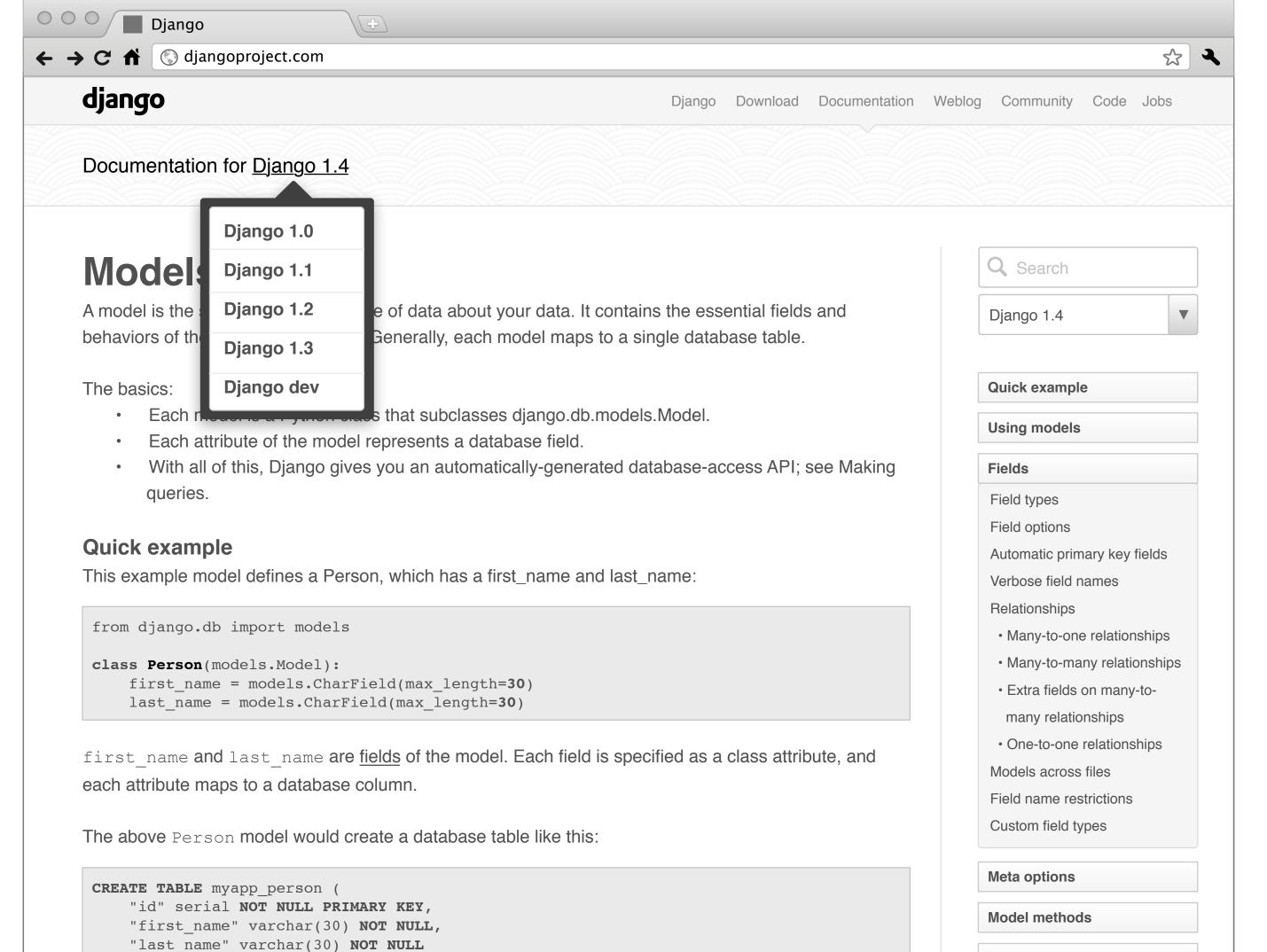
If True, the field is allowed to be blank. Default is False.

Note that this is different than null. null is purely database-related, whereas blank is validation-related. If a field has blank=True, validation on Django's admin site will allow entry of an empty value. If a field has blank=False, the field will be required.

#### choices An itera

An iterable (e.g., a list or tuple) of 2-tuples to use as choices for this field. If this is given, Django's admin will use a select box instead of the standard text field and will limit choices to the choices given.





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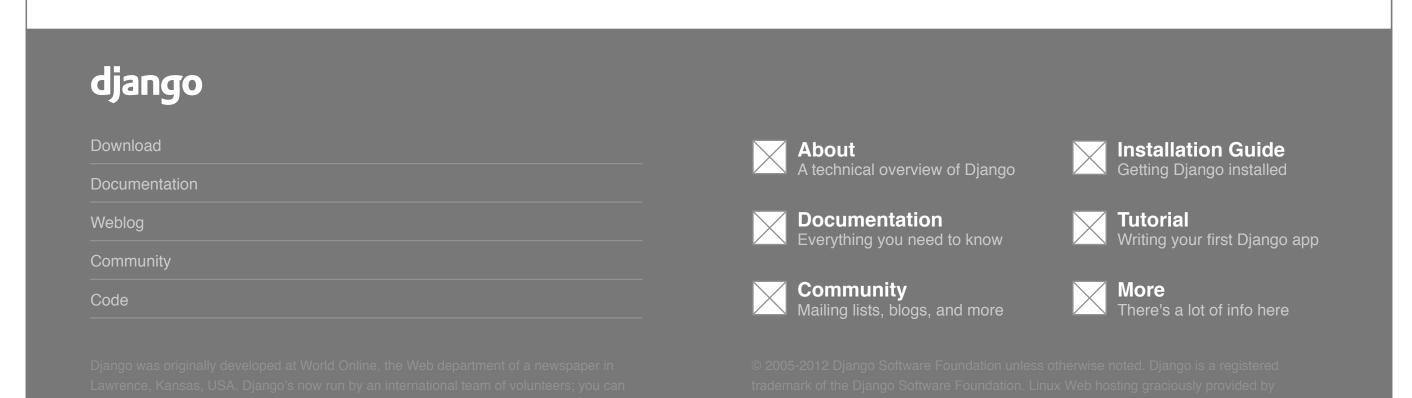
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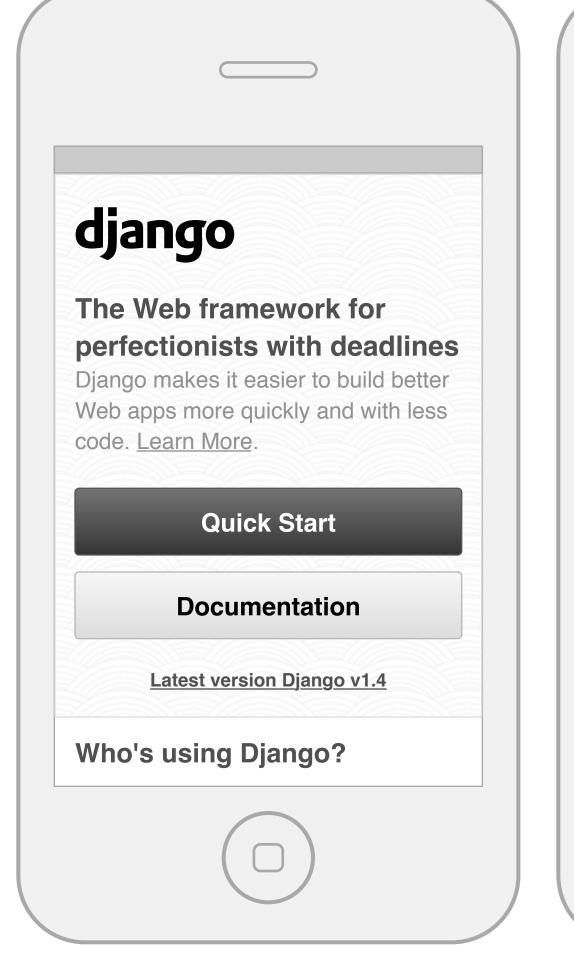
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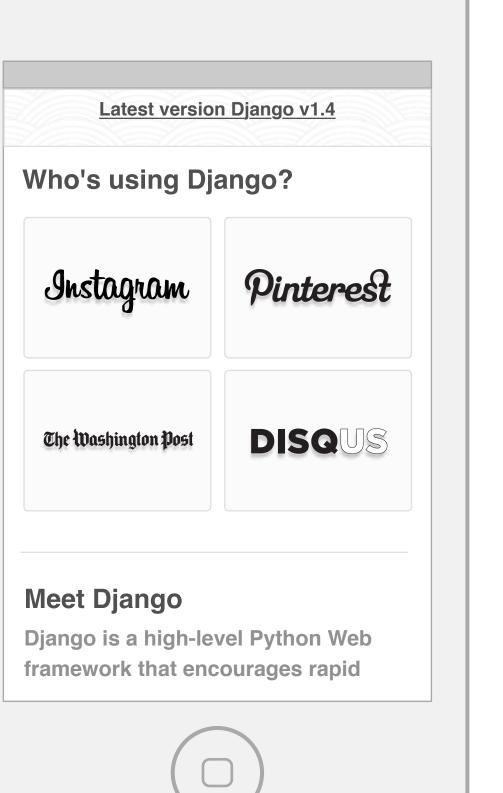
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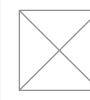
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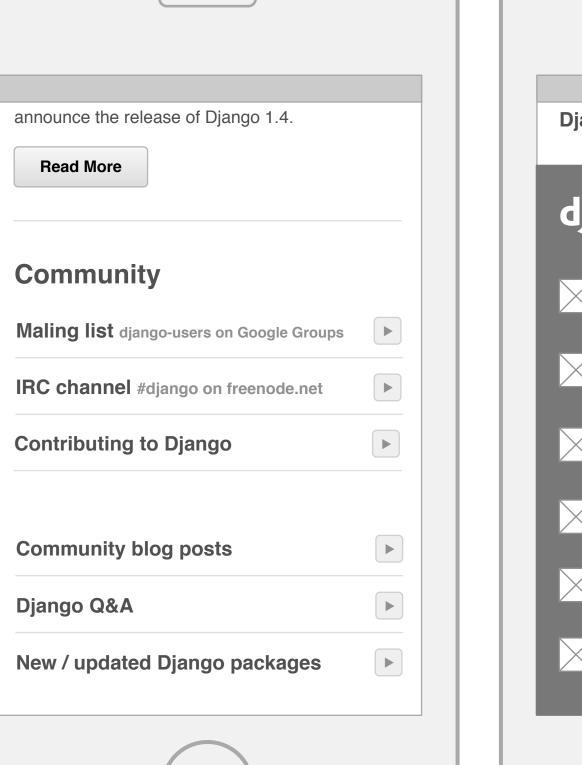


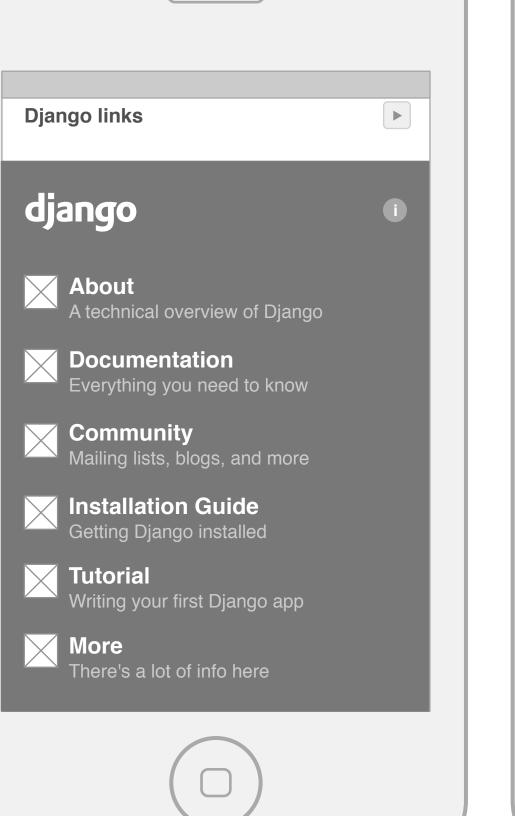
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Django was originally developed at World Online, the Web department of a newspaper in Lawrence, Kansas, USA. Django's now run by an international team of volunteers; you can read all about them over at the list of committers.

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