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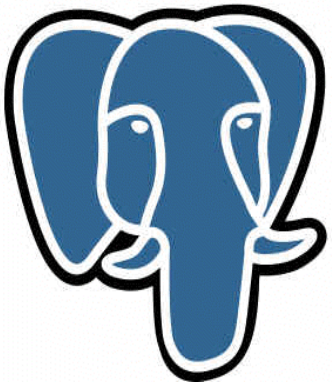
django & PostgreSQL

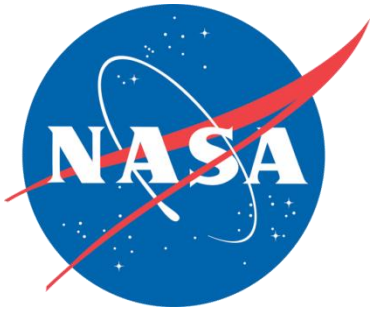


Ege Hanoğlu

Django Nedir?

- Python programlama diliyle yazılmış Web Framework
- Django Reinhardt
- Temmuz 2005'te BSD lisansı ile yayınlanmıştır
- Güncel Sürüm 1.4
- www.djangoproject.com

Kullanıldığı Başlıca Siteler



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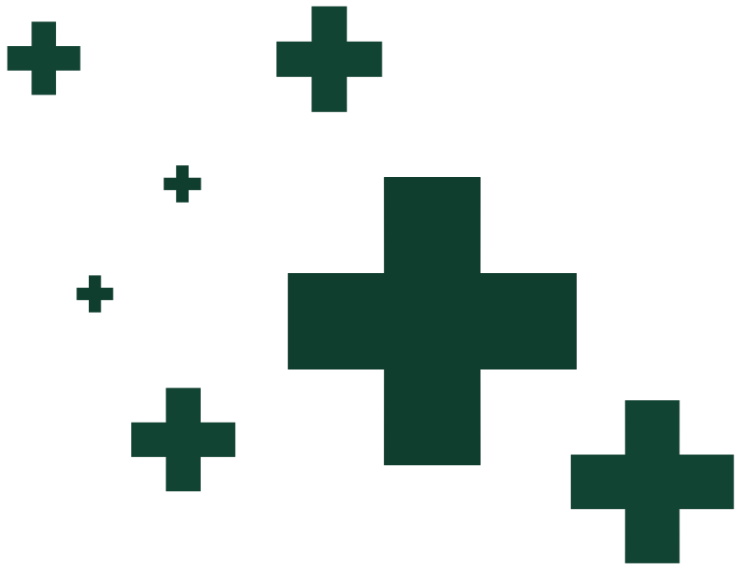
Avantajları Nelerdir?

- Kodlaması basit ve anlaması kolay
- Python kütüphanelerini kullanabilmesi
- Modüler yapıya sahip
- ORM (Object Relational Mapping)
- Daha güvenli
- Otomatik Admin Arayüzü oluşturması
- Internationalization
- Önbellekleme
- Çoklu Veritabanı



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Neden Daha Güvenli?

- CSRF(Cross Site Request Forgery) Korumalı
- HTML Escaping
- ORM

Django'nun Bileşenleri Nelerdir?

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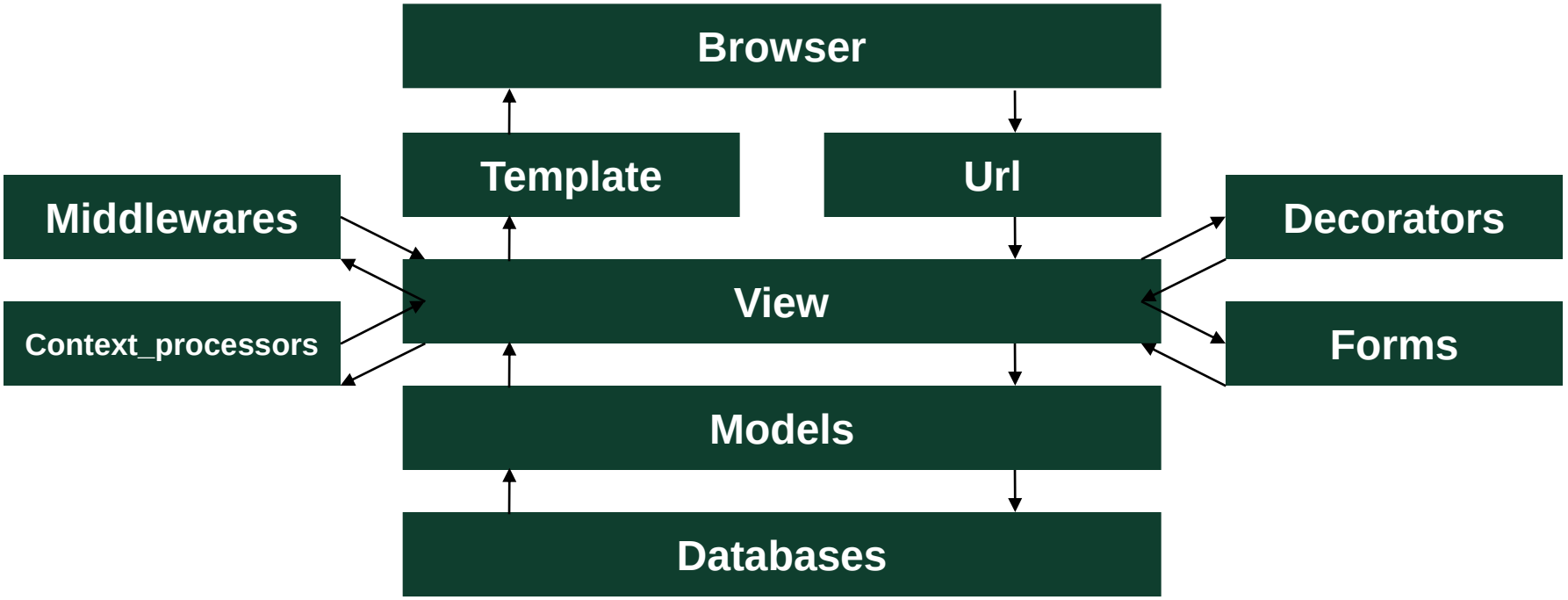
Django'nun Çalışma Yapısı Nasıldır?



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Python'da Sanal Ortam Nasıl Kurulur?

- easy_install virtualenv
- virtualenv pgday_env
- cd pgday_env/
- source bin/activate
- pip install -r requirements.txt
  - requirements.txt:
    - Django==1.3.1
    - PIL==1.1.7
    - psycopg2==2.4.2
    - python-memcached==1.47
    - ipython==0.11
    - django-debug-toolbar==0.9.4

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Django Projesi Nasıl Başlatılır?

- django-admin.py startproject pgday

```
pgday/
__init__.py
manage.py
settings.py
urls.py
```

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Postgresql Veritabanı Nasıl Yaratılır?

- createdb pgday -h localhost -U postgres
- Veritabanı yaratıldıktan sonra veritabanı ayarlarının settings.py'e girilmesi gereklidir.

```
DATABASES = {
'default': {'ENGINE': 'django.db.backends.postgresql_psycopg2',
        'NAME': 'pgday',
        'USER': 'postgres',
        'PASSWORD': '123123',
        'HOST': '127.0.0.1',
        'PORT': '5432',}
}
```

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Django Aplikasyonu Nasıl Başlatılır?

- django-admin.py startapp product

```
product/
__init__.py
models.py
tests.py
views.py
```

Aplikasyon yaratıldıktan sonra settings.py dosyasındaki INSTALLED_APPS'a "pgday.product" satırını eklemeniz gerekir.

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Product/models.py

```python
# -*- coding: utf-8 -*-
from django.db import models
from django.conf import settings
import os

class Category(models.Model):
    name = models.CharField(max_length = 64)

    class Meta:
        db_table = 'mycategory'
        verbose_name_plural = "Categories"

class Product(models.Model):
    name = models.CharField(max_length = 128)
    barcode = models.CharField(max_length = 64)
    external_url = models.URLField(verify_exists = True)
    description = models.TextField(null = True, blank = True, verbose_name = u"Açıklama")
    is_active = models.BooleanField(default = True)
    created_at = models.DateTimeField(auto_now_add = True)
    categories = models.ManyToManyField(Category)
    stock_count = models.PositiveIntegerField()
    sold_count = models.PositiveIntegerField()
    image = models.ImageField(upload_to = os.path.join(settings.UPLOAD_ROOT, "product_image"))

    class Meta:
        ordering = ['-created_at', 'name']
        unique_together = ['name', 'barcode']

    def __unicode__(self):
        return "%s (%s)" % (self.name, self.barcode)

class Comment(models.Model):
    product = models.ForeignKey(Product)
    content = models.TextField()
    email = models.EmailField(max_length = 64)
    ip = models.IPAddressField()
    created_at = models.DateTimeField(auto_now_add = True)
    is_approved = models.BooleanField(default = False)
```

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Product/admin.py

```
from django.contrib import admin
from pgday.product.models import Category, Product, Comment

admin.site.register(Category)
admin.site.register(Product)
admin.site.register(Comment)
```

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Product/views.py

```python
# -*- coding: utf-8 -*-
from django.http import HttpResponseRedirect
from django.template import RequestContext
from django.shortcuts import get_object_or_404, render_to_response
from django.views.decorators.cache import cache_page
from django.core.urlresolvers import reverse
from django.contrib.auth.decorators import login_required, user_passes_test
from pgday.product.models import Product, Comment
from pgday.product.forms import CommentForm

@cache_page(300)
def product_list(request):
    products = Product.objects.filter(is_active = True).only("id", "name", "description")
    return render_to_response("product/productlist.html",
                              {"products" : products},
                              context_instance = RequestContext(request))

@login_required
def product_detail(request, product_id):
    product = get_object_or_404(Product, id = product_id)
    comments = product.comment_set.all()
    if request.POST:
        commentform = CommentForm(request.POST)
        if commentform.is_valid():
            commentform.save(request, product)
    else:
        commentform = CommentForm()
    return render_to_response("product/productdetail.html",
                              {"product" : product, "comments" : comments, "commentform" : commentform},
                              context_instance = RequestContext(request))

@user_passes_test(lambda u: u.is_staff or u.is_superuser)
def approve_comment(request, product_id, comment_id):
    comment = get_object_or_404(Comment, id = comment_id, product__id = product_id)
    comment.is_approved = True
    comment.save()
    return HttpResponseRedirect(reverse("product-detail", args=[product_id]))
```

Product/forms.py

```
# -*- coding: utf-8 -*-
from django import forms
from pgday.product.models import Comment

class CommentForm(forms.ModelForm):
    class Meta:
        model = Comment
        exclude = ["parent_comment", "product", "created_at", "ip", "is_approved"]

    def save(self, request, product):
        comment = Comment(product = product,
                          email = self.cleaned_data["email"],
                          content = self.cleaned_data["content"],
                          ip = request.META["REMOTE_ADDR"])
        comment.save()
        return comment
```

Urls.py & Product/urls.py

```
from django.conf.urls.defaults import patterns, include, url

from django.contrib import admin
admin.autodiscover()

urlpatterns = patterns('',
    url(r'^$', 'pgday.views.home', name='home'),
    url(r'^product/', include('pgday.product.urls')),
    url(r'^admin/', include(admin.site.urls)),
)
```

```
from django.conf.urls.defaults import patterns, include, url

urlpatterns = patterns('',
    url(r'^list/$', 'pgday.product.views.product_list', name='product-list'),
    url(r'^detail/(?P<product_id>\d+)/$', 'pgday.product.views.product_detail', name='product-detail'),
    url(r'^(?P<product_id>\d+)/approve/comment/(?P<comment_id>\d+)/$', 'pgday.product.views.approve_comment', name='approve-comment'),
)
```

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Templates/product/productlist.html

```
{% if products %}
<ul>
  {% for product in products %}
    <li><a href="{% url product-detail product.id %}">{{product.name}}</a></li>
  {% endfor %}
</ul>
{% endif %}
```

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Templates/product/productdetail.html

```
<table>
  <tr>
    <td>Ürün Adı</td>
    <td>{{product.name}}</td>
  </tr>
  <tr>
    <td>Ürün Açıklaması</td>
    <td>{{product.description}}</td>
  </tr>
</table>

{% if comments %}
<ul>
  {% for comment in comments %}
    <li>{{comment.content}}{% if not comment.is_approved %}<a href="{% url approve-comment product.id comment.id %}">Onayla</a>{% endif %}</li>
  {% endfor %}
</ul>
{% endif %}

<form action="{% url product-detail product.id %}" method="POST">
  {% csrf_token %}
  <table>
    {{commentform.as_table}}
    <tr>
      <td colspan="2"><input type="submit" value="Kaydet" /></td>
    </tr>
  </table>
</form>
```

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Django ORM'si Nasıl Kullanılır?

```
Product.objects.filter(name__icontains = "Touch", is_active = True).exclude(stock_count = 0).order_by("-created_at")

SELECT "product_product"."id", "product_product"."name", "product_product"."barcode", "product_product"."external_url",
"product_product"."description", "product_product"."is_active", "product_product"."created_at",
"product_product"."stock_count", "product_product"."sold_count", "product_product"."image"
FROM "product_product"
WHERE (UPPER("product_product"."name"::text) LIKE UPPER(%Touch%)
AND "product_product"."is_active" = True
AND NOT ("product_product"."stock_count" = 0 ))
ORDER BY "product_product"."created_at" DESC
```

```
d = datetime.datetime.now() - datetime.timedelta(days = 3)
Product.objects.filter(Q(name__istartswith = 'Pu') | Q(created_at__gt = d)).only("id", "name")

SELECT "product_product"."id", "product_product"."name" FROM "product_product"
WHERE (UPPER("product_product"."name"::text) LIKE UPPER(Pu%)
OR "product_product"."created_at" > 2012-05-08 15:55:39.040286 )
ORDER BY "product_product"."created_at" DESC, "product_product"."name" ASC
```

```
Product.objects.filter(stock_count__lte = F('sold_count')).update(is_active = False)

UPDATE "product_product" SET "is_active" = false WHERE "product_product"."stock_count" <=  "product_product"."sold_count
```

Django ORM'si Nasıl Kullanılır? (2)

```
Product.objects.using("default").all().aggregate(Sum("sold_count"))

SELECT SUM("product_product"."sold_count") AS "sold_count__sum" FROM "product_product"


category, is_created = Category.objects.get_or_create(name = "Erkek")

SELECT "mycategory"."id", "mycategory"."name" FROM "mycategory" WHERE "mycategory"."name" = E\'Erkek\'
INSERT INTO "mycategory" ("name") VALUES (E\'Erkek\')'


active_products = Product.objects.filter(is_active = True).only("name")
active_products.count() -> 2
Product.objects.update(is_active = True)
active_products.count() -> 3


Comment.objects.select_related().filter(content__regex=r'[0-9]')

SELECT "product_comment"."id", "product_comment"."product_id", "product_comment"."content",
"product_comment"."email", "product_comment"."ip", "product_comment"."created_at",
"product_comment"."is_approved", "product_product"."id", "product_product"."name", "product_product"."barcode",
"product_product"."external_url", "product_product"."description", "product_product"."is_active",
"product_product"."created_at", "product_product"."stock_count", "product_product"."sold_count",
"product_product"."image" FROM "product_comment" INNER JOIN "product_product" ON
("product_comment"."product_id" = "product_product"."id") WHERE "product_comment"."content" ~ E\'[0-9]\'  LIMIT 21
```

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Django'da Transaction Nasıl Yapılır?

Django her metod'un başında transaction'ı başlatır ve sonunda transaction'ı otomatik olarak commit eder.

Bunu ayarlamak istediğimiz durumlarda aşağıdaki örnekteki gibi transaction'ı manuel olarak commit etmemiz gerekir.

```
@transaction.commit_manually
def payment(request, order):
    try:
        order.close()
        transaction.commit()
    else:
transaction.rollback()
raise Exception()
```

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Veritabanından Dump Data Nasıl Alınır?

```
python manage.py dumpdata –format json –indent 2 > initial_data.json
```

Veritabanından Alınan Data Nasıl Import Edilir?

```
python manage.py syncdb
```

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Django1.4 ile Hangi Özellikler Gelmiştir?

```
product = Product.objects.select_for_update().get(id = 1)
product.sold_count += 2
product.save()

Category.objects.bulk_create([Category(name = u"Erkek"),
                              Category(name = u"Kadın"),
                              Category(name = u"Aksesuar")])

@sensitive_post_parameters("credit_card_number", "cvv2")
def payment(request):
```

CSRF koruması artık PUT ve DELETE metodlarını da kapsıyor.

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Teşekkürler





/egehanoglu