

**건전지로 달리는
양고 세미나**

정재성

Django

Web Framework

CGI

```
#!/usr/bin/env python

import MySQLdb

print "Content-Type: text/html\n"
print "<html><head><title>Books</title></head>"
print "<body>"
print "<h1>Books</h1>"
print "<ul>

connection = MySQLdb.connect(user='me', passwd='letmein', db='my_db')
cursor = connection.cursor()
cursor.execute("SELECT name FROM books ORDER BY pub_date DESC LIMIT 10")

for row in cursor.fetchall():
    print "<li>%s</li>" % row[0]

print "</ul>"
print "</body></html>

connection.close()
```

Don't reinvent the wheel.

MVC

```
#!/usr/bin/env python

import MySQLdb

print "Content-Type: text/html\n"
print "<html><head><title>Books</title></head>"
print "<body>"
print "<h1>Books</h1>"
print "<ul>

connection = MySQLdb.connect(user='me', passwd='letmein', db='my_db')
cursor = connection.cursor()
cursor.execute("SELECT name FROM books ORDER BY pub_date DESC LIMIT 10")

for row in cursor.fetchall():
    print "<li>%s</li>" % row[0]

print "</ul>"
print "</body></html>

connection.close()
```

models.py
views.py
urls.py
template.html

```
# models.py (the database tables)

from django.db import models

class Book(models.Model):
    name =
        models.CharField(max_length=50)
    pub_date = models.DateField()
```

```
# views.py (the business logic)

from django.shortcuts import render_to_response
from models import Book

def latest_books(request):
    book_list = Book.objects.order_by('-
pub_date')[ :10]
    return render_to_response('latest_books.html',
{'book_list': book_list})
```

```
# urls.py (the URL configuration)

from django.conf.urls.defaults import *
import views

urlpatterns = patterns('',
    (r'^latest/$', views.latest_books),
)
```

```
# latest_books.html (the template)

<html><head><title>Books</title></head>
<body>
<h1>Books</h1>
<ul>
{% for book in book_list %}
<li>{{ book.name }}</li>
{% endfor %}
</ul>
</body></html>
```

Loosely coupled

History

Install

Install Python

Install Django

<http://www.djangoproject.com/>

```
$ tar xzvf Django-*.tar.gz  
$ cd Django-*  
$ python setup.py install
```

Databases

코끼리, 나뭇잎
돌고래, 11g

Databases

PostgreSQL, SQLite
MySQL, Oracle

Starting a Project

```
$ django-admin.py startproject courserating
```

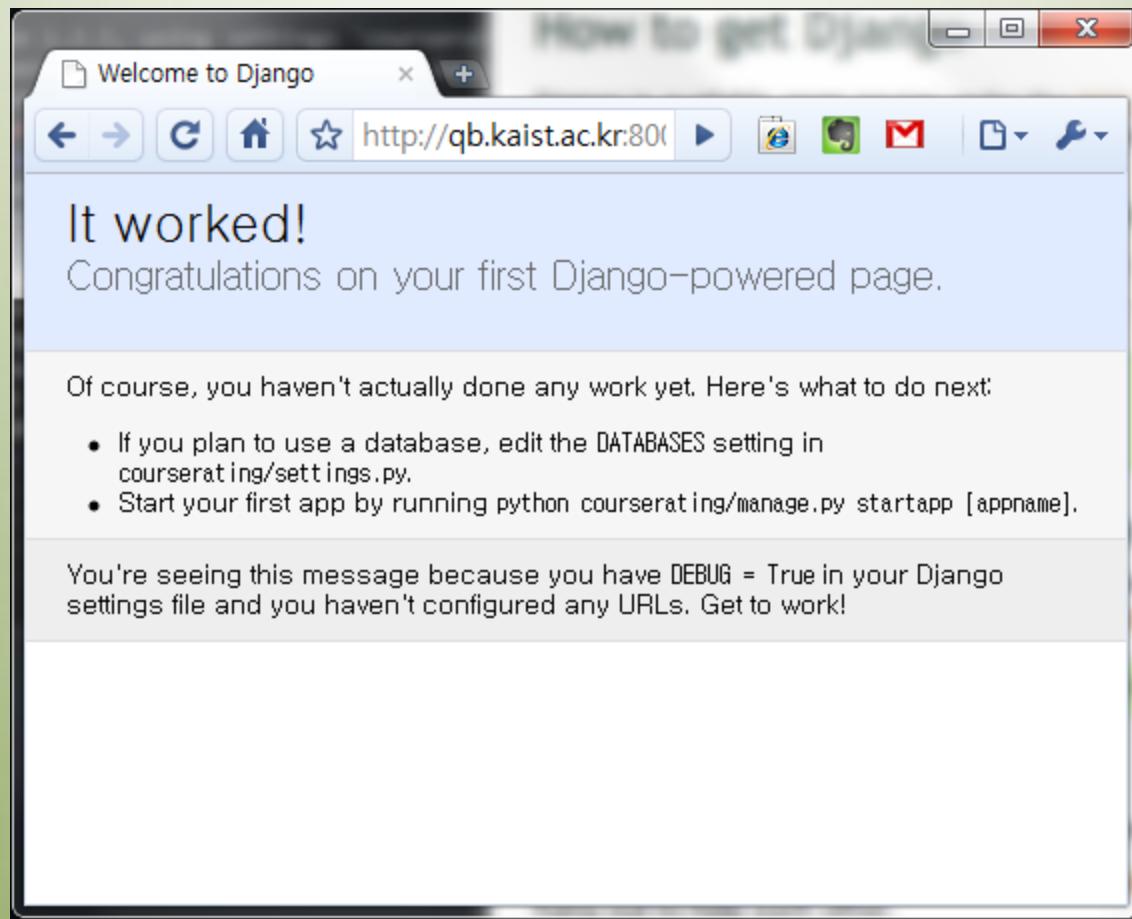
courserating/
__init__.py
manage.py
settings.py
urls.py

Running DEV Server

```
$ python manage.py runserver
```

```
$ python manage.py runserver  
Validating models...  
0 errors found
```

```
Django version 1.2.1, using settings  
'courserating.settings'  
Development server is running at  
http://127.0.0.1:8000/  
Quit the server with CONTROL-C.
```



Views and URLconfs

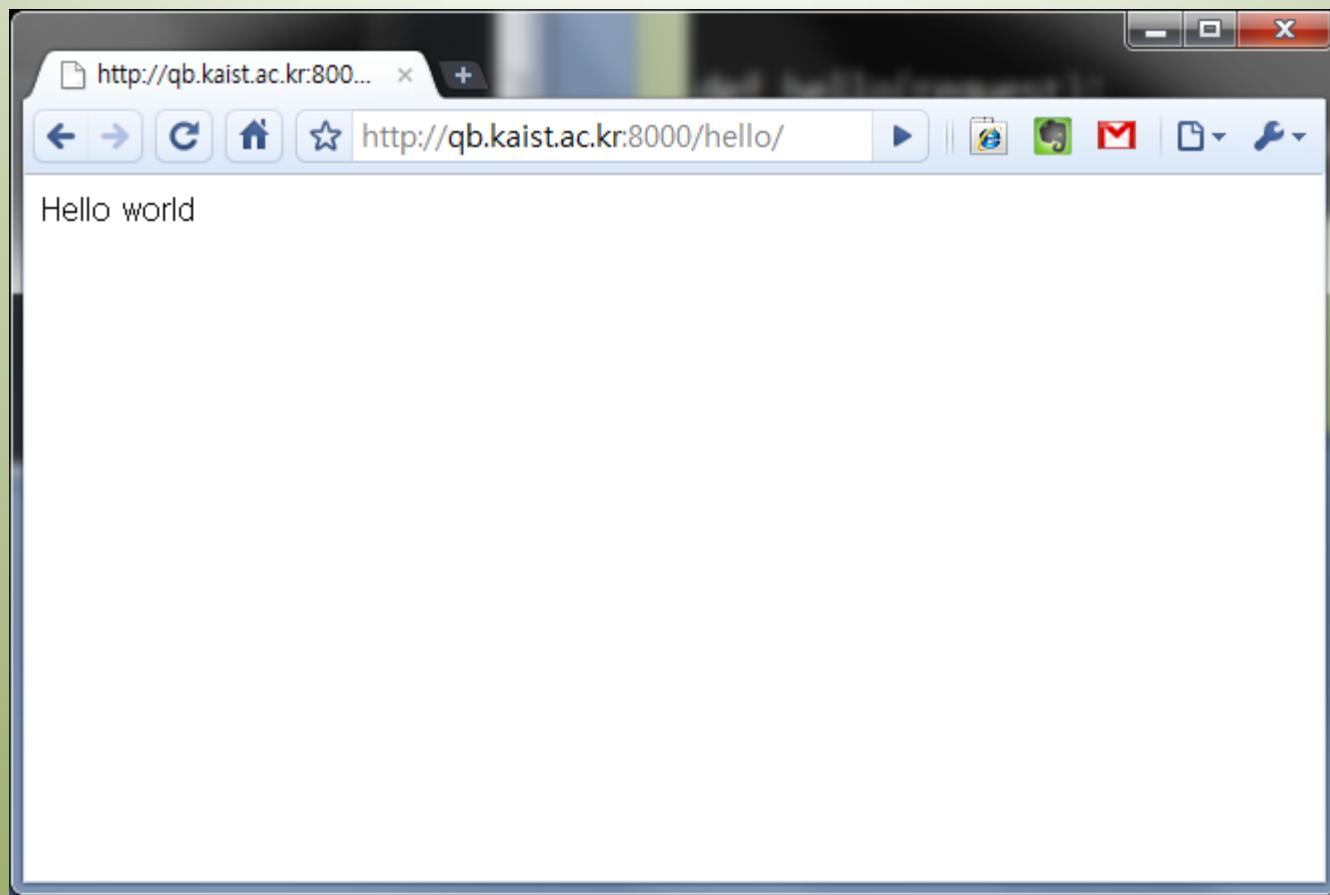
First Django-Powered Page

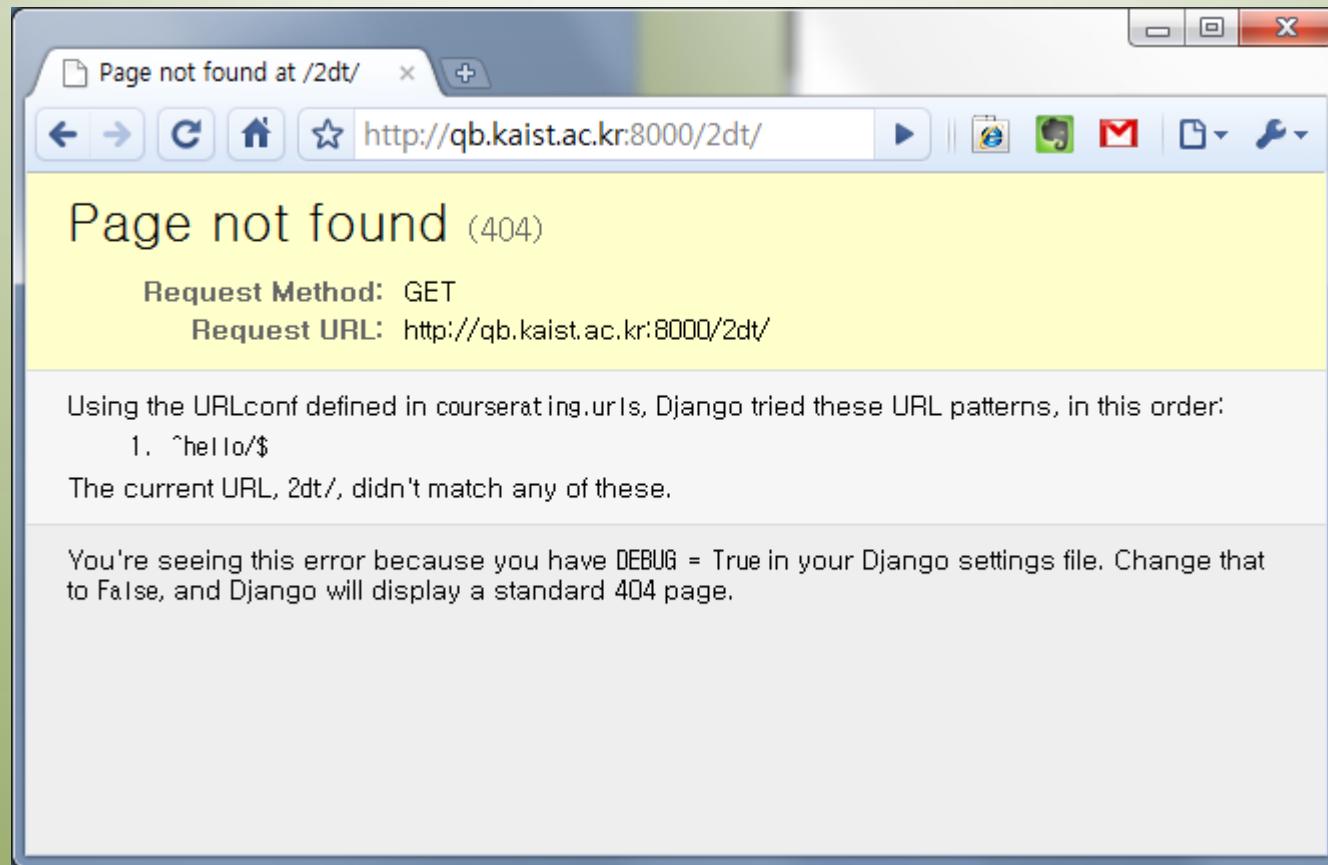
```
# views.py
from django.http import HttpResponse

def hello(request):
    return HttpResponse("Hello world")
```

```
# urls.py
from django.conf.urls.defaults import *
from views import hello

urlpatterns = patterns('',
    ('^hello/$', hello),
)
```





```
# settings.py  
...  
ROOT_URLCONF = 'courserating.urls'  
...
```

1. Request /hello/
2. Look at ROOT_URLCONF
3. Look at URLpatterns
4. Match then call the associated view function
5. The view function returns as HttpResponse
6. Convert HttpResponse to the proper HTTP response

Dynamic Content

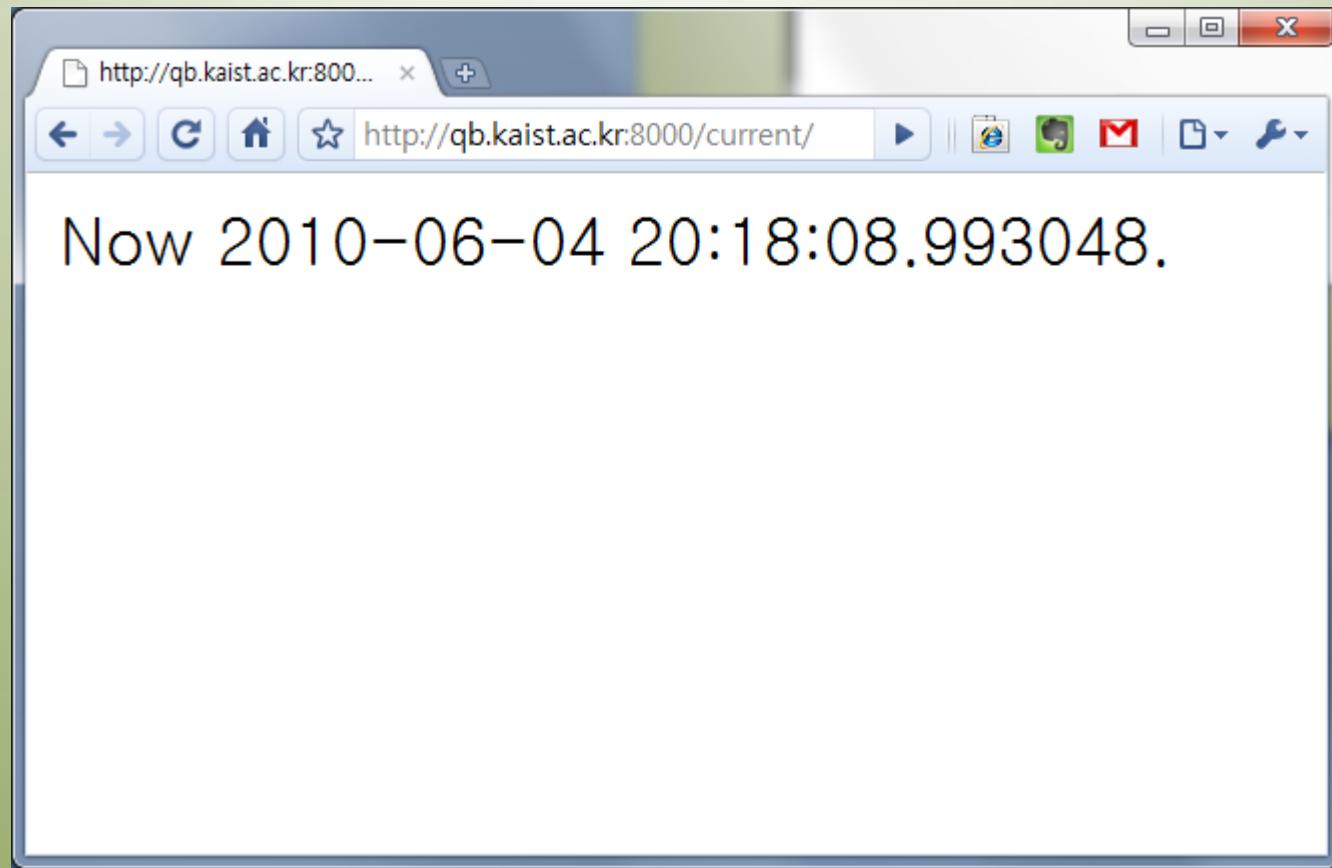
```
>>> import datetime  
>>> now = datetime.datetime.now()  
>>> now  
datetime.datetime(2010, 6, 5, 1, 15, 20,  
840166)  
>>> print now  
2010-06-05 01:15:20.840166
```

```
# views.py
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    html =
"<html><body>Now %s.</body></html>" %
now
    return HttpResponse(html)
```

```
# urls.py
from django.conf.urls.defaults import *
from views import hello, current

urlpatterns = patterns('',
    ('^hello/$', hello),
    ('^current/$', current),
)
```



```
# urls.py
from django.conf.urls.defaults import *
from views import hello, current

urlpatterns = patterns('',
    ('^hello/$', hello),
    ('^current/$', current),
    ('^another_current/$', current),
)
```

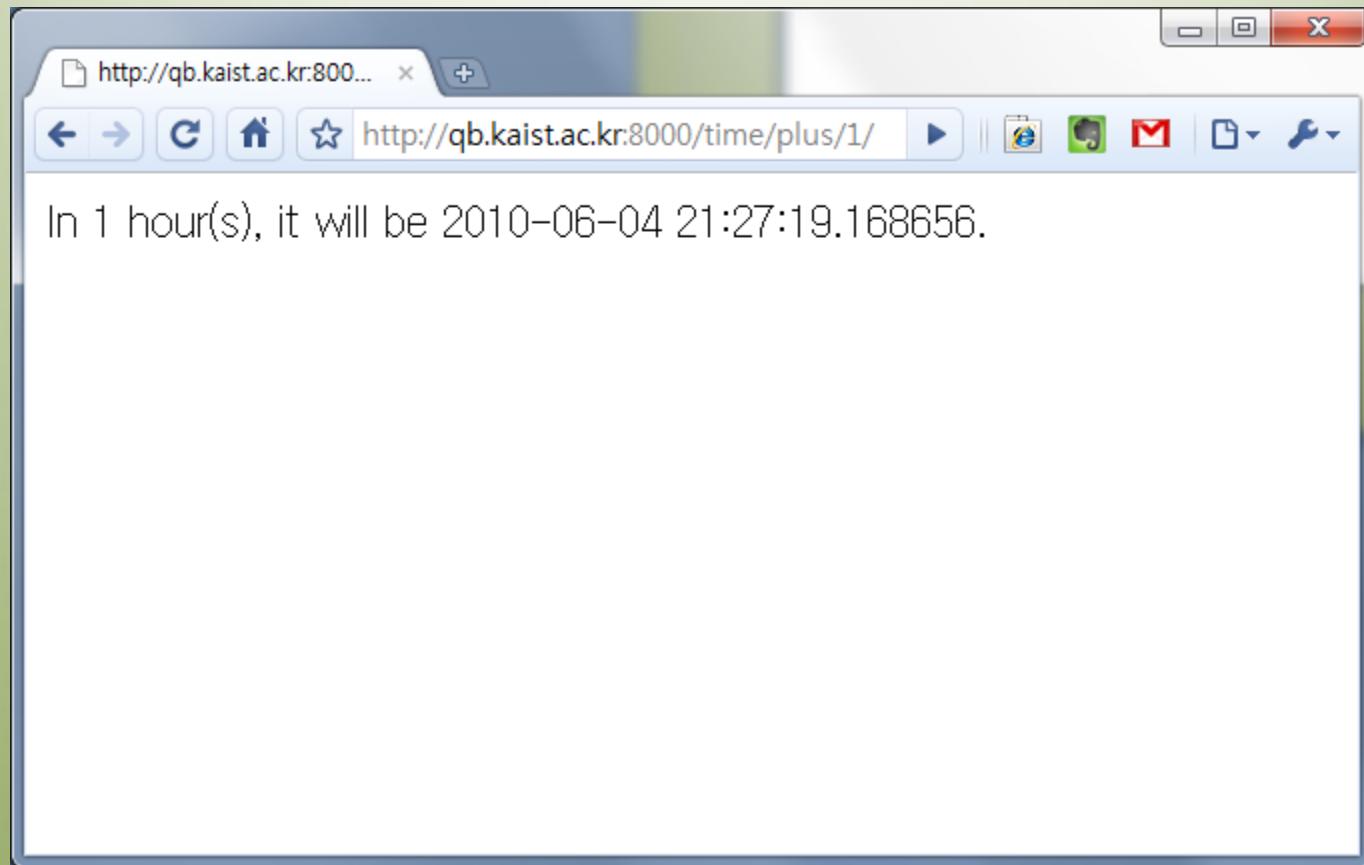
Dynamic URLs

```
# urls.py
urlpatterns = patterns('',
    ('^time/$', current),
    ('^time/plus/1/$', one_hour_ahead),
    ('^time/plus/2/$', two_hours_ahead),
    ('^time/plus/3/$', three_hours_ahead),
    ('^time/plus/4/$', four_hours_ahead),
)
```

```
urlpatterns = patterns('',
    # ...
    (r'^time/plus/\d+/$', hours_ahead),
    # ...
)
```

```
urlpatterns = patterns('',
    # ...
    (r'^time/plus/(\d{1,2})/$', hours_ahead),
    # ...
)
```

```
# views.py
def hours_ahead(request, offset):
    try:
        offset = int(offset)
    except ValueError:
        raise Http404()
    dt = datetime.datetime.now() +
        datetime.timedelta(hours=offset)
    html = "<html><body>In %s hour(s),  
it will be %s.</body></html>" % (offset, dt)
    return HttpResponse(html)
```



Templates

```
# views.py
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    html =
"<html><body>Now %s.</body></html>" %
now
    return HttpResponse(html)
```

```
>>> from django.conf import settings
>>> settings.configure()

>>> from django.template import Template, Context
>>> t = Template('My ID is {{ name }}.')
>>> c = Context({'name': 'hodduc'})
>>> print t.render(c)
My ID is hodduc.

>>> c = Context({'name': 'r4t5y6'})
>>> print t.render(c)
My ID is r4t5y6.

>>> print t
<django.template.Template object at
0x7fbb238c76d0>
```

```
>>> from django.template import Context
>>> c = Context({"foo": "bar"})
>>> c['foo']
'bar'
>>> del c['foo']
>>> c['foo']
Traceback (most recent call last):
...
KeyError: 'foo'
>>> c['newvariable'] = 'hello'
>>> c['newvariable']
'hello'
```

```
>>> from django.template import Template, Context
>>> person = {'name': 'Yoona', 'age': '21'}
>>> t = Template('{{ person.name.upper }} is
{{ person.age }} years old.')
>>> c = Context({'person': person})
>>> t.render(c)
u'YOONA is 21 years old.'
```

More Templates

```
{% if girlgeneration %}  
    <strong>I Love You!</strong>  
    {% else %}  
        <p>Then give it to dogs</p>  
        {% if wondergirls %}  
            <p>Jimotmi</p>  
        {% endif %}  
    {% endif %}
```

```
{% for girl in girlgeneration %}  
  <h1>{{ girl.name }}</h1>  
  <ul>  
    {% for a in girl.recent_solo_albums reversed %}  
      <li>{{ a.name }}</li>  
    {% endfor %}  
  </ul>  
{% endfor %}
```

```
{% if girlgeneration == wondergirls %}  
  <p>Really?!</p>  
  {% else %}  
    <p>That's right!</p>  
{% endif %}
```

```
{% if variable > 1 %}  
{% if variable <= 1.23 %}  
{% if variable != 'foo' %}  
{% if variable == "foo" %}  
{% if variable == True %}  
{% if variable == [1, 2, 3] %}  
{% if variable == {'key': 'value'} %}
```

```
 {{ name|lower }}  
 {{ my_list|first|upper }}  
 {{ my_list|length }}  
 {{ bio|truncatewords:"30" }}  
 {{ pub_date|date:"F j, Y" }}  
 {{ codes|addslashes }}  
 {{ html|striptags }}  
 {{ value|default:"nothing" }}
```

{# World of Warcraft #} Hello

Templates in Views

```
# views.py
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    html =
"<html><body>Now %s.</body></html>" %
now
    return HttpResponse(html)
```

```
# views.py
from django.template import Template, Context
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    t = Template("<html><body>It is now
{{ current_date }}.</body></html>")
    html = t.render(Context({'current_date': now}))
    return HttpResponse(html)
```

```
# /templates/current.html

<html><body>It is now
{{ current_date }}.</body></html>
```

```
# views.py
from django.template import Template, Context
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    fp = open('/templates/current.html')
    t = Template(fp.read())
    fp.close()
    html = t.render(Context({'current_date': now}))
    return HttpResponse(html)
```

```
# settings.py
TEMPLATE_DIRS = (
    '/templates',
)
```

```
# views.py
from django.template.loader import get_template
from django.template import Context
from django.http import HttpResponse
import datetime

def current(request):
    now = datetime.datetime.now()
    t = get_template('current.html')
    html = t.render(Context({'current_date': now}))
    return HttpResponse(html)
```

```
# views.py
from django.shortcuts import render_to_response
import datetime

def current(request):
    now = datetime.datetime.now()
    return render_to_response('current.html',
    {'current_date': now})
```

Reusing Templates

```
# girlgeneration.html

<html>
<body>
{%
  include 'members/tanggu.html'
%}

...
</body>
<html>

# tanggu.html

<p>Romang</p>
```

```
# base.html

<html>
<head>
  <title>{% block title %}{% end block %}</title>
</head>
<body>
  <h1>KAIST</h1>
  {% block content %}{% endblock %}
  {% block footer %}
    <p>Daejeon</p>
  {% endblock %}
</body>
<html>
```

```
# dorm.html

{% extends "base.html" %}
{% block title %}Penalties{% endblock %}
{% block content %}GG{% endblock %}
```

```
# maru.html

{% extends "base.html" %}
{% block title %}Hell{% endblock %}
{% block content %}
Then give it to dogs!{% endblock %}
```

내일은…

Models

Admin Sites

Forms

Users