

CS 683 Emerging Technologies  
Fall Semester, 2006  
Doc 5 Django Intro  
Sep 12, 2006

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## References

Hypertext Transfer Protocol - HTTP/1.0, Berners-Lee, Fielding, Nielson, rfc1945,  
<http://www.w3.org/Protocols/rfc1945/rfc1945>

Django Documentation, <http://www.djangoproject.com/documentation/>

# http://www.netvibes.com/

⊕ Add content Collapse all | Expand all | Settings |  Sign in



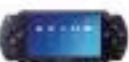
## Sample Page

General (29) × New Tab

### Gmail

Account not configured, use the Edit button to set your login and password

### Kelkoo : psp

	<b>204,90 €</b> PSP at <a href="#">2xmoincher</a>	<a href="#">See offer</a>
	<b>199,99 €</b> Console Sony PSP Base Pack at <a href="#">alapage.com</a>	<a href="#">See offer</a>
	<b>3,00 €</b> PSP A PRIX DERISOIRE at <a href="#">eBay</a>	<a href="#">See offer</a>
	<b>199,98 €</b> La console PSP Base de SONY. at <a href="#">Les 3 Suisses</a>	<a href="#">See offer</a>

### Web Search

Google Yahoo IceRocket Wikipedia

Google

### Webnote

Welcome to Netvibes!

This is your personalized page, you can now modify everything: move modules, add new RSS/ATOM feeds, change the parameters for each module, etc. Your modifications are saved in real-time and you'll find your page when you get back on Netvibes.com. If you want to be able to access your page from any computer, you can sign in (at the top right) with your email and a password.

The content is available from the "add content" button at the top left of this page.

Feel free to check the Netvibes blog to stay tuned about new features on the site.

### TC TechCrunch (6)

- ▶ Live.com leaving beta, replacing MSN search
- ▶ Social network Xuqa's in the black
- ▶ Apple Rumor Roundup
- ▶ Ramblings on ThisNext
- ▶ Top social media users getting paid; is the balance shifting?
- ▶ Microsoft Launches Desktop Feed Reader
- ▶ Check out Blogmusik Before It's Pulled off the Internet

### NP The News is NowPublic (7)

- ▶ Thinking and Driving » Blog Archive » Appropriate Sept. 11 tribute by our President
- ▶ For US soldiers, Iraq is still about 9/11 (AFP)
- ▶ RI senator targeted in Tuesday primary (AP)
- ▶ Longoria says 'Housewives' her last show (AP)
- ▶ Ford to shrink US dealer base over 3 yrs (Reuters)
- ▶ Luc Besson says latest film his last (AP)
- ▶ After 9/11, NASCAR helped the healing process (Fox Sports)

### Netvibes.com News (7)


- ▶ Netvibes seeks top Ajax coder
- ▶ The Future of Netvibes
- ▶ Maintenance upgrade and a cure of speed for Netvibes
- ▶ iCal module update
- ▶ Netvibes updates the digg module
- ▶ Netvibes introduces Meebo and Alexa modules
- ▶ Netvibes new features review

### bb Boing Boing (9)

- ▶ Court rejects Josh Wolf's appeal, return to prison possible
- ▶ Tiki Art at Roq la Rue Gallery in Seattle
- ▶ US Journalist charged with videotaping "critical national security structure"

### f colorful - Everyone's Tagged Photos

← →



2006.01.11 10:08:00 AM / ... (hard crawl in colorful cushion) - Photo by Golden

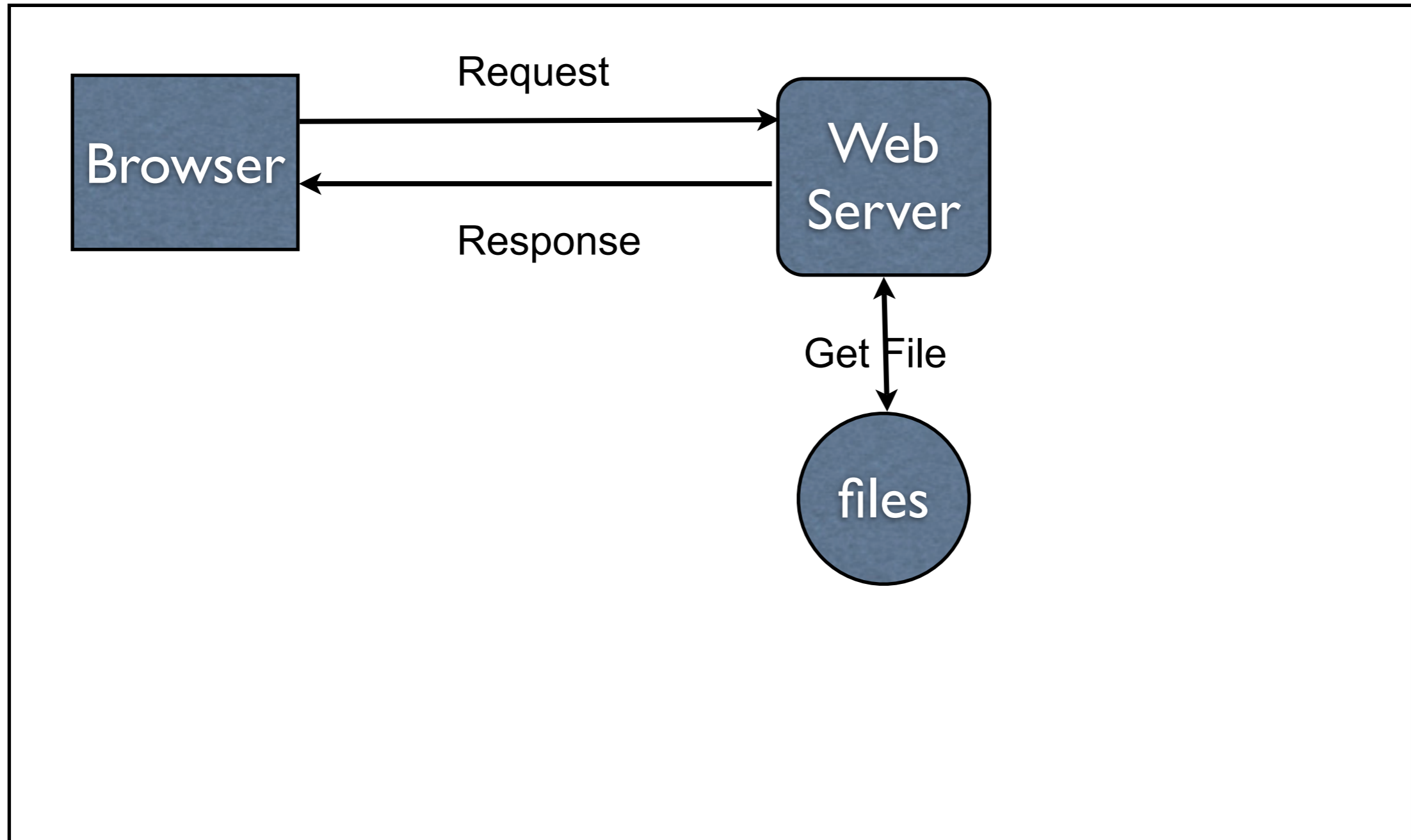
# <http://www-rohan.sdsu.edu/~whitney/hello.html>

Hello World

hello.html

```
<html>  
<body>  
    Hello World  
</body>  
</html>
```

# Web Interaction



# Request

GET /~whitney/hello.html HTTP/1.1

Accept: \*/\*

Accept-Language: en

Accept-Encoding: gzip, deflate

User-Agent: Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/  
418.8 (KHTML, like Gecko) Safari/419.3

Connection: keep-alive

Host: 130.191.3.5

# Response

HTTP/1.1 200 OK

Date: Mon, 11 Sep 2006 11:22:15 -0700

Server: Apache

Cache-control: max-age=86400

Expires: Tue, 12 Sep 2006 11:22:15 -0700

Last-modified: Mon, 11 Sep 2006 11:07:53 -0700

Etag: "abe00a-2c-4505a5f9"

Accept-ranges: bytes

Keep-alive: timeout=15, max=100

Content-Length: 44

Connection: Keep-Alive

Content-type: text/html

<html>

<body>

    Hello World

</body>

</html>

# HTTP

Stateless (http 1.0)

Assigned port 80

Basic Server-Client Interaction (http 1.0)

Client: Open connection

Server: Accept/Reject connection

Client: Send request

Server: Send response to request

Connection closed

# HTTP Message Format

HTTP-message = Simple-Request (HTTP/0.9 messages)  
| Simple-Response  
| Full-Request (HTTP/1.0 messages)  
| Full-Response

Full-Request = Request-Line  
\*( General-Header | Request-Header | Entity-Header )  
CRLF  
[ Entity-Body ]

Full-Response = Status-Line  
\*( General-Header | Request-Header | Entity-Header )  
CRLF  
[ Entity-Body ]

HTTP-header = field-name ":" [ field-value ] CRLF

Entity-Body = \*OCTET

# HTTP Full Request

Request-Line = Method SP URI SP HTTP-Version CRLF

rohan 13-> telnet www.eli.sdsu.edu 80

Trying 130.191.226.80...

Connected to www.eli.sdsu.edu.

Escape character is '^'].

GET /courses/fall00/cs580/index.html HTTP/1.0

2 CRLF's end the full request

HTTP/1.1 200 OK

Date: Tue, 05 Sep 2000 19:31:14 GMT

Server: Apache/1.3.9 (Unix) PHP/3.0.12

Last-Modified: Mon, 04 Sep 2000 21:03:56 GMT

ETag: "14c199-7e8-39b40e3c"

Accept-Ranges: bytes

Content-Length: 2024

Connection: close

Content-Type: text/html

X-Pad: avoid browser bug

<HTML>

<HEAD>

....

# Detecting End of a Message

Use termination sequence

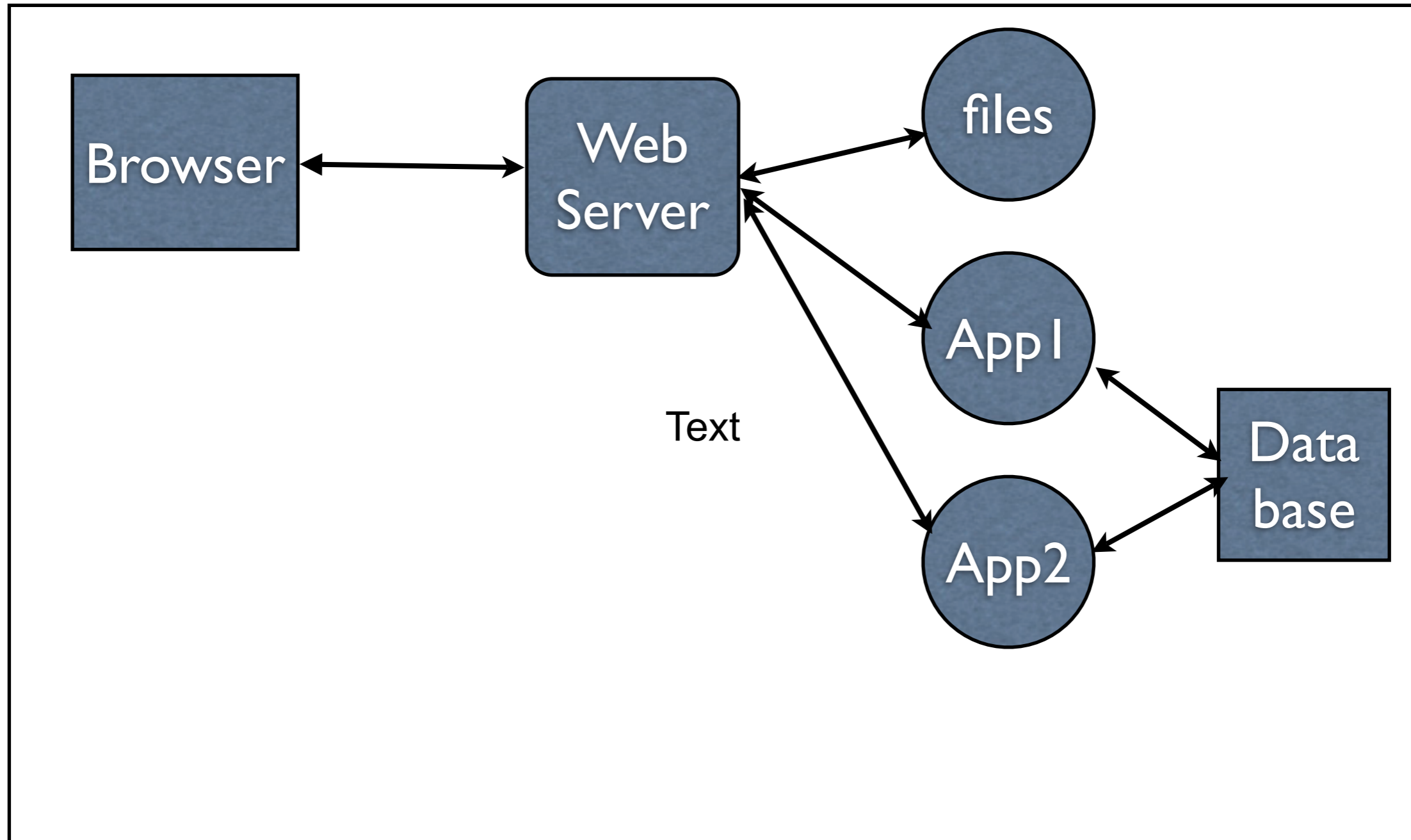
Make the length of the message  
known

HTTP

Header ends in CRLF

Header contains length in bytes of message body

# Web Interaction



# Web Server

Handle network connections  
Forward requests to handler  
Add headers to response  
Handle Errors

# Web Application

Process request

Program logic

Interact with database

User sessions

Generate response (html)

# Django Hello World Example

Some setup

After installing Django

```
> django-admin.py startproject cs683
```

```
> cd cs683
```

```
> ls
```

```
__init__.py  manage.py  settings.py  urls.py
```

```
> python manage.py startapp simpleExamples
```

```
> ls simpleExamples
```

```
__init__.py  models.py  views.py
```

# Starting the Server

```
> python manage.py runserver
```

```
Validating models...
```

```
0 errors found.
```

```
Django version 0.95 (post-magic-removal), using settings 'cs683.settings'
```

```
Development server is running at http://127.0.0.1:8000/
```

```
Quit the server with CONTROL-C.
```

# http://127.0.0.1:8000

## It worked!

Congratulations on your first Django-powered page.

Of course, you haven't actually done any work yet. Here's what to do next:

- If you plan to use a database, edit the `DATABASE_*` settings in `cs683/settings.py`.
- Start your first app by running `python cs683/manage.py startapp [appname]`.

You're seeing this message because you have `DEBUG = True` in your Django settings file and you haven't configured any URLs. Get to work!

# Settings

cs683/settings.py - modified section

```
TEMPLATE_DIRS = (  
    '/Users/whitney/django/cs683/templates'  
)
```

cs683/urls.py - modified section

```
urlpatterns = patterns(  
    (r'helloWorld.html', 'cs683.simpleExamples.views.hello'),  
)
```

# View & Template

cs683/simpleExamples/views.py

```
from django.shortcuts import render_to_response
```

```
def hello(request):
```

```
    return render_to_response('simpleExamples/hello.html', {} )
```

cs683/templates/simpleExamples/hello.html

```
<html>
```

```
<body>
```

```
    Hello World
```

```
</body>
```

```
</html>
```

**<http://127.0.0.1:8000/helloWorld.html>**

Hello World

# Making a Page Dynamic

```
cs683/urls.py
```

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

```
urlpatterns = patterns("",  
    (r'helloWorld.html', 'cs683.simpleExamples.views.hello'),  
    (r'helloTime.html', 'cs683.simpleExamples.views.helloTime'),  
)
```

# New View

```
cs683/simpleExamples/views.py
```

```
from django.shortcuts import render_to_response  
from datetime import datetime
```

```
def hello(request):  
    return render_to_response('simpleExamples/hello.html', {} )
```

```
def helloTime(request):  
    return render_to_response('simpleExamples/helloTime.html',  
        {'now': str(datetime.now())} )
```

# Template

cs683/templates/simpleExamples/helloTime.html

```
<html>  
<body>  
    Hello World at: {{ now }}  
</body>  
</html>
```

**<http://127.0.0.1:8000/helloTime.html>**

Hello World at: 2006-09-12 16:11:16.309563

# Accessing a database

cs683/settings.py - modified sections

```
DATABASE_ENGINE = 'sqlite3'
```

```
DATABASE_NAME = '/Users/whitney/django/cs683/data.sqlite'
```

```
INSTALLED_APPS = (  
    'django.contrib.auth',  
    'django.contrib.contenttypes',  
    'django.contrib.sessions',  
    'django.contrib.sites',  
    'cs683.simpleExamples',  
    'django.contrib.admin',  
)
```

# New URL

cs683/urls.py

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

```
urlpatterns = patterns("",  
    (r'helloWorld.html', 'cs683.simpleExamples.views.hello'),  
    (r'helloTime.html', 'cs683.simpleExamples.views.helloTime'),  
    (r'helloPast.html', 'cs683.simpleExamples.views.helloPast'),  
)
```

# Model

```
cs683/simpleExamples/models.py
```

```
from django.db import models
```

```
class WebAccess(models.Model):
```

```
    timeStamp = models.DateTimeField(auto_now_add=True)
```

# Added to View

cs683/simpleExamples/views.py - modified section

```
from cs683.simpleExamples.models import WebAccess
```

```
def helloPast(request):
```

```
    if WebAccess.objects.count() > 0:
```

```
        firstAccess = WebAccess.objects.get(id=1).timeStamp
```

```
        lastAccess = WebAccess.objects.latest('timeStamp').timeStamp
```

```
    else:
```

```
        firstAccess = "
```

```
        lastAccess = "
```

```
    now = WebAccess()
```

```
    now.save()
```

```
    return render_to_response('simpleExamples/helloPast.html',
```

```
        {'now': now.timeStamp, 'first': firstAccess, 'last': lastAccess,
```

```
        'count': WebAccess.objects.count()} )
```

# Creating the Database Tables

```
> python manage.py syncdb
```

```
Creating table auth_message
```

```
Creating table auth_group
```

```
Creating table auth_user
```

```
Creating table auth_permission
```

```
Creating many-to-many tables for Group model
```

```
Creating many-to-many tables for User model
```

```
Creating table django_content_type
```

```
Creating table django_session
```

```
Creating table django_site
```

```
Creating table simpleExamples_webaccess
```

```
Creating table django_admin_log
```

```
...
```

# Template

cs683/templates/simpleExamples/helloPast.html

```
<html>
<body>
  Hello World at: {{ now }}<br/>
  First access {{ first|timesince }} ago<br/>
  Most recent access: {{ last }}<br/>
  Page visited {{ count }} times
</body>
</html>
```

# <http://127.0.0.1:8000/helloPast.html>

Hello World at: 2006-09-12 17:11:44.524428  
First access 5 hours, 58 minutes ago  
Most recent access: 2006-09-12 17:09:55.276509  
Page visited 15 times