



EECS E6893 Big Data Analytics

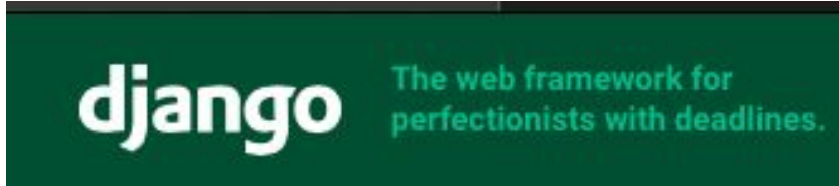
HW4: Data visualization with web dashboard (Part 2)

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Agenda

- Introduction of Django
- Using D3.js to do data visualization
- HW4 Part 2 (65% of HW4)
 - Dashboard of HW3
 - Relationship of HW2

Django



<https://www.djangoproject.com>

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

Install Packages

1. Django

<https://www.djangoproject.com/download/>

Option 1: Get the latest official version

The latest official version is 2.2.6 (LTS). Read the [2.2.6 release notes](#), then install it with `pip`:

```
pip install Django==2.2.6
```

Install Packages

2. Pandas-gbq

<https://pandas-gbq.readthedocs.io/en/latest/>

Install latest release version via conda

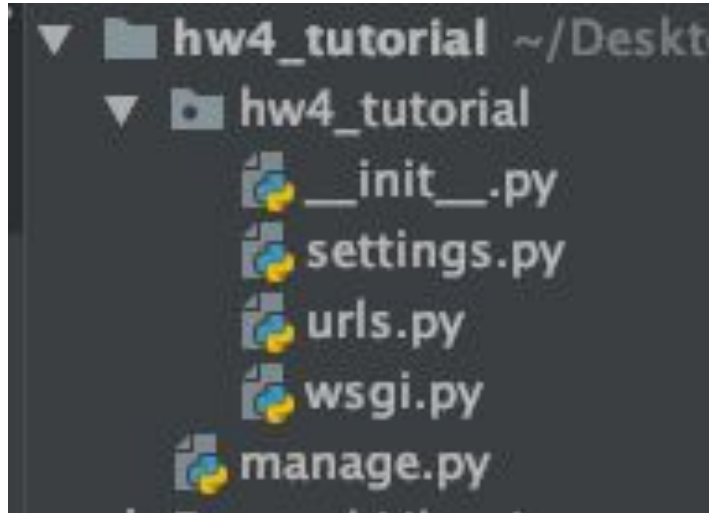
```
$ conda install pandas-gbq --channel conda-forge
```

Install latest release version via pip

```
$ pip install pandas-gbq
```

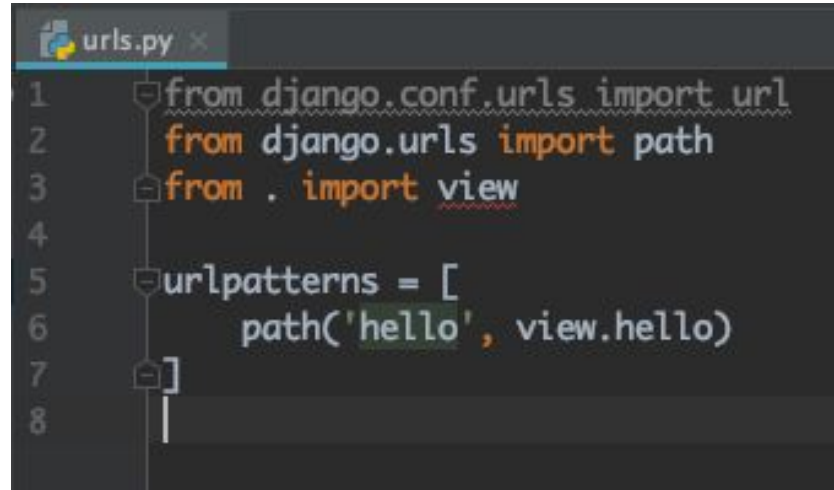
Create Django App

```
$ django-admin.py startproject hw4_tutorial
```



Create Django App

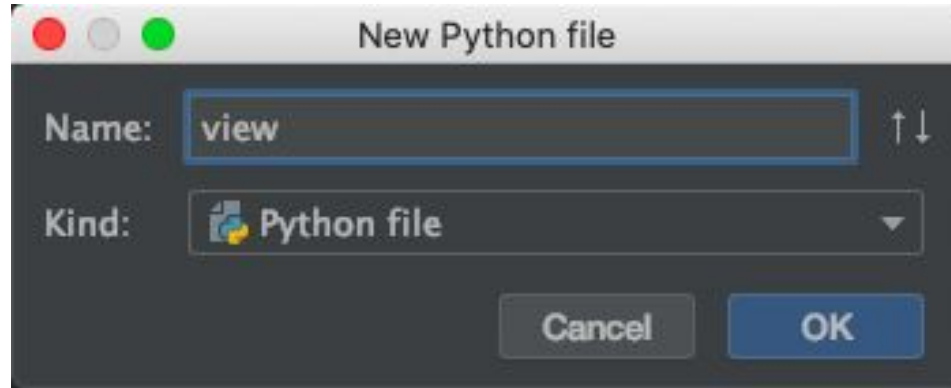
Edit urls.py

A screenshot of a code editor window titled 'urls.py'. The code is written in Python and defines URL patterns for a Django application. It includes imports for 'url' from 'django.conf.urls', 'path' from 'django.urls', and 'view' from the current module. A list named 'urlpatterns' is defined, containing a single entry: 'path('hello', view.hello)'. The code is as follows:

```
1 from django.conf.urls import url
2 from django.urls import path
3 from . import view
4
5 urlpatterns = [
6     path('hello', view.hello)
7 ]
8
```

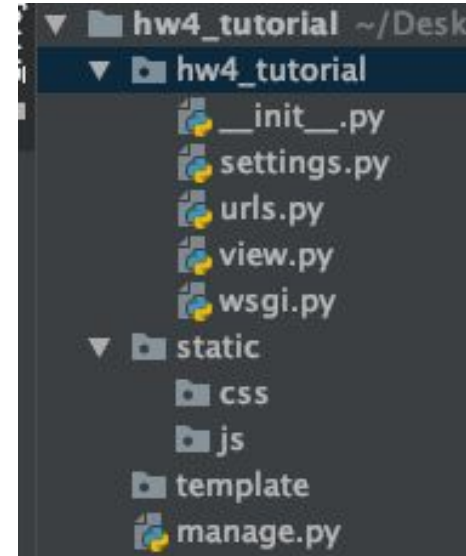
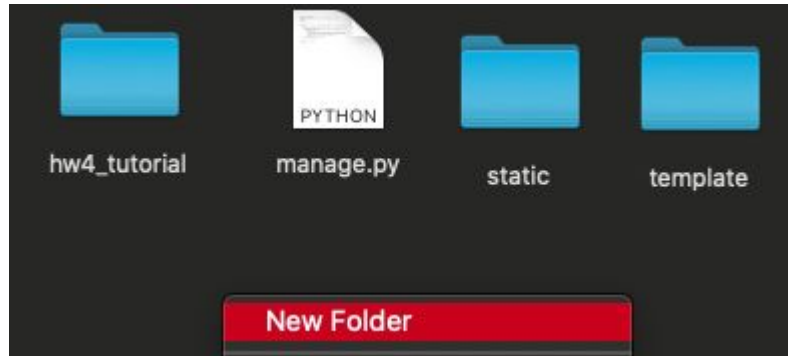
Create Django App

Create view.py



```
from django.shortcuts import render
def hello(request):
    context = {}
    context['content1'] = 'Hello World!'
    return render(request, 'helloworld.html', context)
```


Create folder to place template



Add the path of template

```
urls.py × view.py × settings.py ×  
53  
54 TEMPLATES = [  
55     {  
56         'BACKEND': 'django.template.backends.django.DjangoTemplates',  
57         'DIRS': [],  
58         'APP_DIRS': True,  
59         'OPTIONS': {
```



```
TEMPLATES = [  
    {  
        'BACKEND': 'django.template.backends.django.DjangoTemplates',  
        'DIRS': [os.path.join(BASE_DIR, 'template')],  
        'APP_DIRS': True,  
        'OPTIONS': {
```

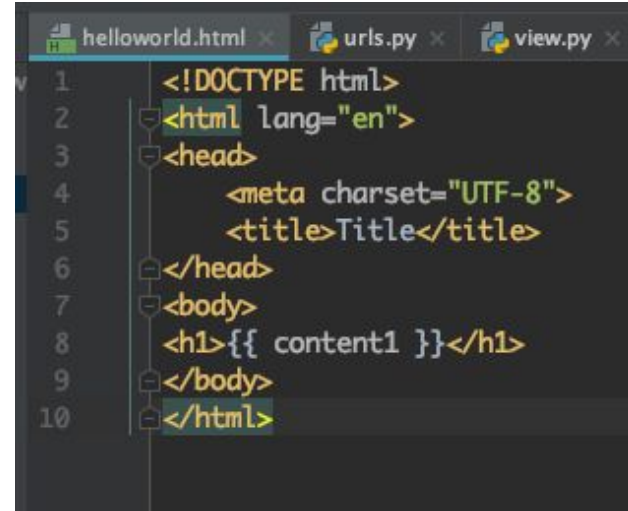
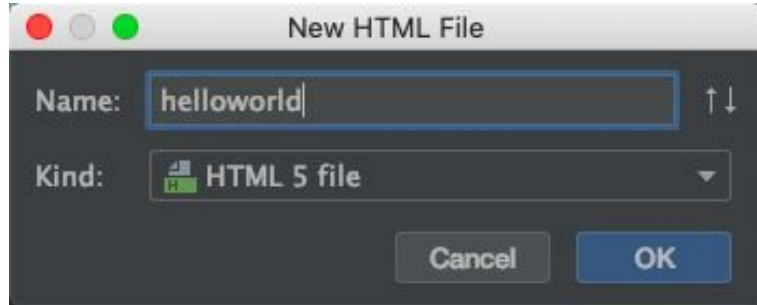
Add the path of template

```
117 # Static files (CSS, JavaScript, Images)
118 # https://docs.djangoproject.com/en/2.2/howto/static-files/
119
120 STATIC_URL = '/static/'
121
```



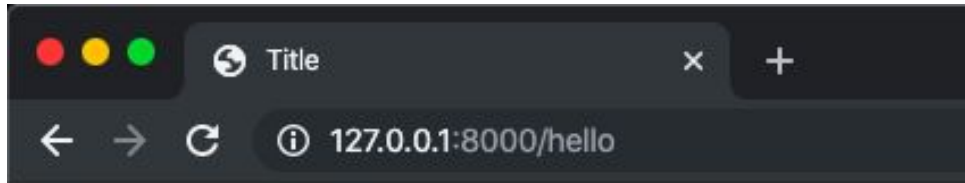
```
115
116
117 # Static files (CSS, JavaScript, Images)
118 # https://docs.djangoproject.com/en/2.2/howto/static-files/
119
120 STATIC_URL = '/static/'
121 STATICFILES_DIRS = [
122     os.path.join(BASE_DIR, "static"),
123 ]
```

Create html template



Run server

```
u$ cd ../Desktop/bigdata_TA/hw4/hw4_tutorial/  
al alienlau$ python manage.py runserver
```



Hello World!

HW4

- Part 1 (35%)
 - 4 Short-answer Questions (5% each)
 - Draw a simple barchart with requirement (15%)
- Part 2 (65%)
 - Dashboard of HW3
 - Create a Django project, query the hw3 data from bigquery
 - Draw a simple Dashboard based on the data, which combines a pie chart and a bar chart
 - Relationship of HW2
 - Process and store the required data to BigQuery
 - Draw a simple figure to show the connections