

Djagno 기반의 웹프로그래밍

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Web Frameworks for Python(<https://wiki.python.org/moin/WebFrameworks>)

장고 공식 사이트(<https://www.djangoproject.com/>)

장고 공식 소스 저장소(<http://github.com/django/django>)

장고 참조 문서 영어(<https://docs.djangoproject.com/en/3.2/>)

Agenda

Django(장고) 기반의 파이썬 웹 프로그래밍

Ch01. Django 시작하기

1. Django 란?
2. 개발 환경 구축
3. Django 구조

Ch02. Django App

1. Django Project
2. Model
3. View

Ch03. Model

1. Model 속성 및 옵션
2. Relationship
3. Migrations
4. Admin App

Ch04. Django SQL

1. Django shell
2. Manager & QuerySet
3. 조회 SQL
4. 생성/수정/삭제 SQL
5. Django-Debug-Toolbar

Ch05. Template

1. Template Loader
2. URL Dispatcher
3. Template 상속
4. Template Engines
5. Template Filter

Ch06. Django View

1. View 기본
2. View 활용

Ch07. Django Form

1. HTML form
2. CSRF
3. HttpRequest/HttpResponse
4. Django Form
5. Django Model Form
6. Form Validation

Ch08. File 관리

1. Static Files
2. Media Files
3. Image Thumbnail

Ch09. 사용자 인증

1. Auth App
2. 회원가입 구현
3. 로그인/아웃 구현
4. Oauth 라이브러리 활용

Ch 02 Django App

1. Django Project
2. Model
3. View

Chapter 02. Django App

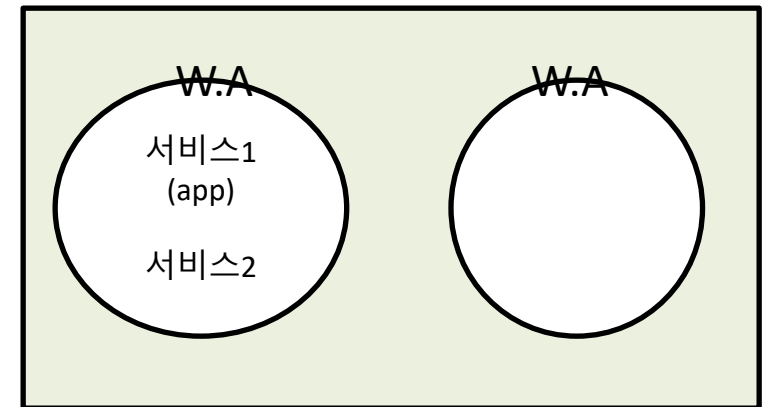
- 기본 converter
(<https://github.com/django/django/blob/3.2/django/urls/converters.py>)
- HttpRequest 소스
(https://docs.djangoproject.com/en/3.2/_modules/django/http/request/#HttpRequest)
- HttpRequest 객체
(<https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>)
- HttpResponse 소스
(<https://github.com/django/django/blob/3.2/django/http/response.py>)
- HttpResponse 객체
(<https://docs.djangoproject.com/en/3.2/ref/request-response/#httpresponse-objects>)



1. Django Project



Django Project = Web Application = web site



Django Project 생성

1. Django Project

- 장고 프로젝트 생성

```
django-admin startproject myproject  
tree /f
```

```
myproject : manage.py  
└─ myproject : __init__.py : 패키지로 만들어짐  
                  settings.py : 장고 프로젝트 설정  
                  urls.py      : 들어온 요청과 view 연결  
                  wsgi.py      : 실제 서버 배포시 사용
```

- Django 규칙에 따라 디렉터리, 파일 자동 생성
- cmd창이나 shift+오른쪽마우스클릭 – powershell창 열기 등 이용해서 명령어 수행

Django Project 생성

1. Django Project

- 디렉토리 이동

```
D:\src\django> cd myproject
```

- Model을 DB에 반영(디폴트가 SQLite가 기본 설정)

```
D:\src\ django\myproject> python manage.py migrate
```

: model의 내용을DB에 반영

- 개발 서버 구동(실습용 개발 서버)

```
D:\src\django\myproject> python manage.py runserver
```

<http://127.0.0.1:8000>으로 Webserver 연결

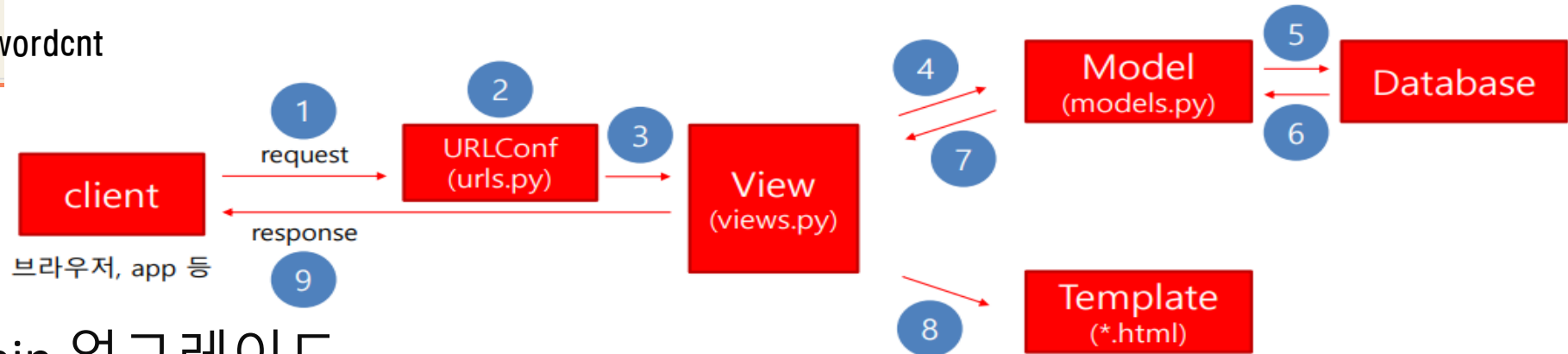
Django Project 구조

1. Django Project

- 장고 프로젝트는 여러 개의 App을 가짐
- App 생성 : `python manage.py <app_name>`
 - D:\src\django\myproject> `python manage.py -help` : 도움말
 - D:\src\django\myproject> `python manage.py startapp blog` : 앱생성. 서비스 구현은 앱 안에.
- App의 구조

```
myproject : manage.py
└─ myproject : __init__.py, settings.py, urls.py, wsgi.py
└─ blog : migrations
          __init__.py
          admin.py
          apps.py
          models.py
          tests.py
          views.py
```


Django framework flow



1. pip 업그레이드

- pip --version
- python -m pip install --upgrade pip
- pip --version

2. Django install

- pip install django

3. 파이참에서 프로젝트 생성 후

- Django-admin startproject ch02 .

4. SECRET_KEY 숨기기(.gitignore생성)

- .env생성(.gitignore에 .env추가)
- Pip install python-decouple
- settings.py 를 수정하기

From decouple import config

SECRET_KEY = config('SECRET_KEY')

5. Home, wordcnt app 추가하기

- `python manage.py startapp home`
- `python manage.py startapp wordcnt`
- `Settings.py`에 `home`과 `wordcnt` app 등록

6. URLconf

- `ch02/urls.py`

```
urlpatterns = [  
    path("admin/", admin.site.urls),  
    path("", views.index, name='index'),  
    path('test/', views.test, name='test'),  
    path('showId/<int:id>', views.intId, name='showIntId'),  
    path('showId/<str:id>', views.strId, name='showStrId'),  
    path('wordcnt/', include('wordcnt.urls')),  
]
```
- `Wordcnt/urls.py`



- Wordcnt/urls.py
wordcnt 패키지 안의 urls.py :
/wordcnt/ : text 입력
/wordcnt/result : 입력된 text wordcount
/wordcnt/about : 도움말 페이지
from django.urls import path
import wordcnt.views
app_name = 'wordcnt'
urlpatterns = [
 path("", wordcnt.views.wordinput, name='wordinput'),
 path('about/', wordcnt.views.about, name='about'),
 path('result/', wordcnt.views.result, name='result'),
]



7. Views

```
from django.shortcuts import render
from django.http import HttpResponse

# Create your views here.
def index(request):
    context = {'msg': 'wordCount welcome page'}
    return render(request,
                  'home/index.html',
                  context=context)

def test(request):
    return HttpResponse('<h1>테스트 페이지</h1>'+
                       '<button onclick="location=\'\&\'">뒤로</button>')

def intId(request, id):
    msg = '숫자 ID는 ' + str(id)
    type = '숫자'
    return render(request,
                  template_name='home/showId.html',
                  context={'msg': msg, 'type': type})

def strId(request, id):
    msg = '문자 ID는 ' + str(id)
    type = '문자'
    return render(request,
                  template_name='home/showId.html',
                  context={'msg': msg, 'type': type})
```

7. Views

```
from django.shortcuts import render

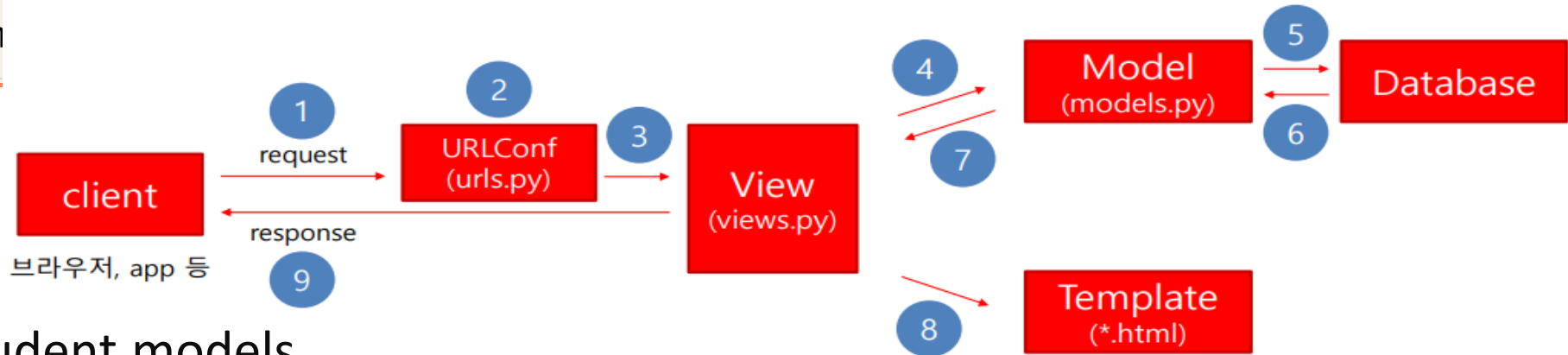
# text 입력
def wordinput(request):
    return render(request, 'wordcnt/wordinput.html')
def about(request):
    return render(request, 'wordcnt/about.html')

def result(request):
    #print(request.POST)
    # full = request.POST['fulltext']
    #full = request.POST.get('fulltext', '')
    full = request.GET['fulltext']
    strlength = len(full) # 글자수
    words = full.split()
    wordcnt = len(words) # 단어 갯수
    words_dic = dict() # 빈 딕셔너리
    for word in words:
        if word in words_dic.keys():
            words_dic[word] += 1 # words_dic['hong'] = 2
        else:
            words_dic[word] = 1
    print('★', full, wordcnt)
    context = {
        'full':full,
        'strlength':strlength,
        'wordcnt':wordcnt,
        'dict':words_dic.items() # [('hong',2),('good',1),('luck',1)]
    }
    return render(request,
                    'wordcnt/result.html',
                    context=context)
```

8. templates/home

```
<head>
  <meta charset="UTF-8">
  <!-- 파비콘 설정 : 아이콘 설정 (http://www.flaticon.com) -->
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet">
  {% load static %}
  <link href="{% static 'img/brand.png' %}" rel="icon">
  <link href="{% static 'css/ex.css' %}" rel="stylesheet">
  <title>Title</title>
</head>
<body>
<div class="p-5 mb-4 bg-body-tertiary rounded-3">
  <h2>템플릿을 index.html로 사용해 보았어요</h2>
  <h1 onclick="location='{% url 'wordcnt:wordinput' %}'">{{msg}}</h1>
  <br>
  <a href="test">TEST</a><br>
  <a href="{% url 'test' %}">TEST</a><br>
  <button class="btn btn-outline-danger" onclick="location='{% url 'test'%}'">TEST</button>
  <button class="btn btn-outline-danger" onclick="location='/test'">TEST</button>
  <hr>
  <a href="showId/123">showIntId/123</a><br>
  <a href="{% url 'showIntId' 124 %}">showIntId/124</a><br>
  <button class="btn btn-outline-warning" onclick="location='showId/123'">숫자ID</button>
  <button class="btn btn-outline-warning" onclick="location='{% url 'showIntId' 124 %}'">숫자ID</button>
  <hr>
  <a href="showId/aab">showIntId/123</a><br>
  <a href="{% url 'showStrId' 'abc' %}">showIntId/124</a><br>
  <button class="btn btn-outline-info" onclick="location='showId/abc'">문자ID</button>
  <button class="btn btn-outline-info" onclick="location='{% url 'showStrId' 'abc' %}'">문자ID</button>
</div>
</body>
```

Django framework flow



- Student.models

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

```
class Student(models.Model): # student_student(테이블명 : 앱명_클래스명소문자)
    id = models.AutoField(primary_key=True)
    name = models.CharField(max_length=100, unique=True)
    major = models.CharField(max_length=100, null=True) # 기본 0 / null=False
    age = models.IntegerField(default=0)
    grade = models.IntegerField(default=1)
    def __str__(self):
        return "{:}({:}, {:}세 {:}학년)".format(self.id,
                                                self.name,
                                                self.major,
                                                self.age,
                                                self.grade)
```

- `python manage.py migrate` : 사용자 및 그룹 테이블 생성
- `python manage.py createsuperuser` : 관리자 계정 생성
- `python manage.py runserver` 관리자 계정 로그인 확인
- `python manage.py makemigrations` : 변경사항이 있는지 models 검색
- `python manage.py migrate` : 변경사항 테이블 생성
- `python manage.py shell` : 장고 shell 모두 실행

CRATE

```
from student.models import Student
st = Student(name='hong', major='computer', age=22, grade=2)
st.save()
st = Student(name='kim', major='bigdata', age=21, grade=2)
st.save()
st = Student(name='lee', major='ai', age=23, grade=3)
st.save()
qs = Student.objects.all() # 전체 데이터 읽기 READ
qs[0].name, qs[1]
for s in qs:
    print(s)
```



```
qs = Student.objects.get(name='kim') # 조건에 맞는 한행 읽기 READ
Print(qs)
qs = Student.objects.filter(age__lt=30) # 필터로 읽기
__lt : 보다 작다
__lte : 보다 작거나 같다
__gt : ~보다 크다
__gte : ~보다 크거나 같다
__isnull : null인 자료
__contains : 특정 문자열 포함
qs = Student.objects.order_by('age') # age 필터 기준으로 오름차순 정렬 가져옴
qs = Student.objects.order_by('-age') # age 필터 기준으로 내림차순 정렬 가져옴
qs = Student.objects.get(name='kim')
qs.age = 40 # 데이터 수정 UPDATE
qs.save()
qs = Student.objects.get(name='hong')
qs.delete() # 데이터 삭제 DELETE
```

Blog 앱 작성

1. Django Project

- myproject/settings.py

```
INSTALLED_APPS = [  
    ~ 생략 ~ # 장고에서 미리 만들어 놓은 기능(앱) 있음  
    'blog',    # 최신스타일 'blog.apps.BlogConfig'  
]
```

- blog/views.py

```
from django.shortcuts import render  
from django.http import HttpResponse  
  
def index(request):  
    return HttpResponse("Hello, World!")
```

Blog 앱 작성

1. Django Project

- myproject/urls.py

```
from django.contrib import admin
from django.urls import include, path
urlpatterns = [
    path('blog/', include('blog.urls'))
]
```

- blog/urls.py

```
from django.urls import path
from . import views
urlpatterns = [
    path('', views.index)
]
```



← → ↻ ⓘ localhost:8000/blog/

Hello, World!

새로운 앱 작성

1. Django Project

0. 프로젝트 생성
1. 앱 생성
2. 프로젝트/settings.py의 INSTALLED_APPS에 앱 등록
3. View 작성
4. 앱이름/urls.py 파일 생성
5. 프로젝트/urls.py에 include 적용

Django의 요청처리

1. Django Project

1. root URLConf : settings.py의 ROOT_URLCONF

```
ROOT_URLCONF = 'myproject.urls'
```

2. ROOT_URLCONF 모듈 로드 후 urlpatterns 변수 검색
3. ROOT_URLCONF의 include를 통해 TREE 구조로 확장
4. Tree 구조로 확장된 urlpatterns의 path()또는 re_path()들을 검색 리스트에 포함
5. 작성된 리스트에서 URL 패턴을 순차 검색
6. 요청된 URL과 일치하는 패턴을 찾으면 검색 중단
7. 일치된 패턴의 뷰 함수 호출
8. 뷰 함수에 다음의 인자를 전달
 - HttpRequest인스턴스
 - 이름이 지정되지 않은 인자는 위치 기반으로 전달
 - 키워드 인자는 kwargs 값에 설정되어 전달

url pattern

1. Django Project

- URL 패턴의 끝은 "/"로 끝남
- 첫번째 /는 내부적으로 추가되기 때문에 지정하지 않음
 - `"/articles/"` 대신 `"articles/"`로 지정
- View의 인자로 사용되는 값은 꺾쇠괄호 <변수이름>를 사용
- View의 인자로 사용되는 값의 타입 지정 시 <데이터 타입:변수이름>으로 지정

- 프로젝트/urls.py

```
urlpatterns = [  
    # path('', root, name='root'),  
    path('', lambda r: redirect('article:list'), name='root'),  
    path('admin/', admin.site.urls),  
    path('blog/', include('blog.urls')),  
    path('bookmark/', include('bookmark.urls')),  
    path('accounts/', include('accounts.urls')),  
    path('accounts/', include('allauth.urls')),  
    path('shop/', include('shop.urls')),  
    path('article/', include('article.urls')),  
    path('book/', include('book.urls')),  
]
```

- 앱/urls.py

```
from django.urls import path  
from . import views  
  
app_name = 'article'  
urlpatterns = [  
    path('mine/', views.MyView.as_view(), name='my-view'),  
    path('new/', views.article_new, name='new' ),  
    path('home/', views.HomePageView.as_view(), name='home'),  
    path('go-to-django/', views.RedirectView.as_view(url='https://djangoproject.com'), name='go-to-django'),  
    path('<pk>/edit/', views.article_edit, name='edit'),  
    path('<pk>/delete/', views.article_delete, name='delete'),  
    path('<pk>/detail/', views.ArticleDetailView.as_view(),  
    path('<pk>/', views.ArticleDV.as_view(), name='detail'),  
  
    path('', views.article_list, name='list'),  
]
```



2. Model



데이터 베이스 설정

2. Model

- myproject/settings.py

```
DATABASES = {  
    'default': {  
        'ENGINE': 'django.db.backends.sqlite3',  
        'NAME': os.path.join(BASE_DIR, 'db.sqlite3'),  
    }  
}  
  
LANGUAGE_CODE = 'ko-kr'  
  
TIME_ZONE = 'Asia/Seoul'
```

Django Model

2. Model

- Django 내장 ORM
- SQL문 없이 장고 모델을 통해 DB CRUD 작업 가능
- 파이썬 클래스와 DB 테이블
 - ◆ Model = DB Table
 - ◆ Model instance = Table의 1개 row

Model 정의

2. Model

- [blog/models.py](#)

```
from django.db import models

class Post(models.Model):
    title = models.CharField(max_length=100)
    content = models.TextField()
    create_at = models.DateField(auto_now_add=True)
    updated_at = models.DateTimeField(auto_now=True)
```

Mode의 활성화

2. Model

- D:\src\django\myproject>python manage.py **makemigrations blog**

```
C:\dev\myproject>python manage.py makemigrations blog
Migrations for 'blog':
  blog\migrations\0001_initial.py
    - Create model Post
```

- D:\src\django\myproject>python manage.py **sqlmigrate blog 0001**

```
BEGIN;
--
-- Create model Post
--
CREATE TABLE "blog_post" ("id" integer NOT NULL PRIMARY KEY AUTOINCREMENT,
                           "title" varchar(100) NOT NULL, "content" text NOT NULL, "create
                           _at" date NOT NULL, "updated_at" datetime NOT NULL);
COMMIT;
```

- D:\src\django\myproject>python manage.py **migrate**

```
C:\dev\myproject>python manage.py migrate
Operations to perform:
  Apply all migrations: admin, auth, blog, contenttypes, sessions
Running migrations:
  Applying blog.0001_initial... OK
```

DB API

2. Model

```
C:\dev\myproject> python manage.py shell (기본셸은 장고 프로젝트 인식. 장고셸은 환경값 인식하는 셸)
```

```
In[1] : from blog.models import Post
In[2] : Post.objects.all() #<QuerySet []>
In[3] : p1 = Post(title='아이스하키', content='빙판에서 5명이 퍽을 가지고 하는 경기')
In[4] : p1.save() # 실제 DB에 save(insert)
In[5] : p1.id #1
In[6] : p1.title
In[7] : p1.content
In[8] : p1.create_at
In[9] : p2 = Post(); p2.title='농구'
In[10] : p2.content='지상에서 5명이 농구공을 가지고 하는 경기'
In[10] : p2.save()
In[11] : p2.id # 2

In[12] : Post.objects.all() #<QuerySet [<Post: Post object (1)>, <Post: Post object (2)>]>
```

객체 표현

2. Model

- `__str__` 메소드 오버라이딩

```
models.py x
1  from django.db import models
2
3  class Post(models.Model):
4      title = models.CharField(max_length=100)
5      content = models.TextField()
6      create_at = models.DateField(auto_now_add=True)
7      updated_at = models.DateTimeField(auto_now=True)
8
9      def __str__(self):
10         return self.title
```

- `__str__` 메소드에서 반환 값 출력

```
In [1]: from blog.models import Post

In [2]: Post.objects.all()
Out[2]: <QuerySet [<Post: 아이스하키>, <Post: 농구>]>
```

Django Admin App

2. Model

- Super User 계정 생성

D:\src\django\myproject> python manage.py createsuperuser

- 개발 서버 구동

D:\src\django\myproject> python manage.py runserver

- Admin 페이지에서 blog 모델

```
# blog/admin.py

from django.contrib import admin
from .models import Post

admin.site.register(Post)
```

- Admin 페이지 접속

<http://localhost:8000/admin>



3. View



View

3. View

- HttpRequest

- ◆ View의 첫번째 인자로 전달, client의 요청 정보를 가짐

- HttpResponse

- ◆ View의 반환 객체, client로 전달되는 응답 정보를 가짐
- ◆ 문서 : <https://docs.djangoproject.com/en/3.2/ref/request-response/#httpresponse-objects>
- ◆ 소스 : <https://github.com/django/django/blob/3.2/django/http/response.py>

- View 종류

- ◆ FBV(Function Based View) ; 함수 기반 뷰
 - 호출 가능한 객체
- ◆ CBV(Class Based View) ; 클래스 기반 뷰
 - 클래스이름.as_view()를 통해 호출 가능한 객체를 생성/반환

View의 인자

3. View

- 1번째 인자

- ◆ HttpRequest ; client 의 요청 정보를 가짐
- ◆ 문서 : <https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>
- ◆ 소스 : <https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>

- 2번째 이후

- ◆ 요청 URL로부터 capture된 문자열들. Client가 넘겨준 데이터
- ◆ url(), re_path()를 통한 모든 인자는 str타입으로 전달
- ◆ Path를 통한 인자는 매핑된 Converter의 to_python()에서 반환된 타입으로 전달

HttpRequest

3. View

- 문서

- <https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>

- 속성

- HttpRequest.body
 - HttpRequest.path
 - HttpRequest.path_info
 - HttpRequest.method
 - HttpRequest.encoding
 - HttpRequest.content_type
 - HttpRequest.content_params
 - HttpRequest.GET
 - HttpRequest.POST
 - HttpRequest.COOKIES
 - HttpRequest.FILES
 - HttpRequest.META

```
[docs]class HttpRequest:
    """A basic HTTP request."""

    # The encoding used in GET/POST dicts. None means use default setting.
    _encoding = None
    _upload_handlers = []

    def __init__(self):
        # WARNING: The `WSGIRequest` subclass doesn't call `super`.
        # Any variable assignment made here should also happen in
        # `WSGIRequest.__init__()`.

        self.GET = QueryDict(mutable=True)
        self.POST = QueryDict(mutable=True)
        self.COOKIES = {}
        self.META = {}
        self.FILES = MultiValueDict()

        self.path = ''
        self.path_info = ''
        self.method = None
        self.resolver_match = None
        self._post_parse_error = False
        self.content_type = None
        self.content_params = None
```

HttpRequest

3. View

디버그 Python: Django

변수

Local

- HttpResponse: <type>

Arguments

- request: <WSGIRequest: GET '/blog/archives/1234/'>
- code: 1234

```
def blog_code(request, code):  
    return HttpResponse('{} 코드에 대한 내용'.format(code))
```

views.py

```
47 def blog_code(request, code):  
48     return HttpResponse('{} 코드에 대한 내용'.format(code))  
49  
50  
51  
52  
53  
54
```

디버그 Python: Django

변수

Local

- HttpResponse: <type>

Arguments

- request: <WSGIRequest: GET '/blog/archives/1234/'>
 - COOKIES: {'csrftoken': '3ZTchlPCGM0vPs7BpEw...I9GM'}
 - FILES: <MultiValueDict: {}>
 - GET: <QueryDict: {}>
 - META: {'ALLUSERSPROFILE': 'C:\\\\ProgramData', 'APPD...
 - POST: <QueryDict: {}>
 - _current_scheme_host: 'http://localhost:8000'
 - _encoding: None
 - _messages: <django.contrib.messages.storage.fallba...
 - _post_parse_error: False
 - _read_started: True
 - _stream: <django.core.handlers.wsgi.LimitedStream ...
 - _upload_handlers: []
 - content_params: {}
 - content_type: 'text/plain'
 - csrf processing done: True

View의 반환값

3. View

- View는 반드시 HttpResponse 객체를 리턴해야 함
- 문서
 - <https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>
 - 소스 : <https://docs.djangoproject.com/en/3.2/ref/request-response/#httprequest-objects>
- 속성
 - HttpResponse.content
 - HttpResponse.charset
 - HttpResponse.status_code
 - HttpResponse.reason_phrase
 - HttpResponse.streaming
 - HttpResponse.closed

View의 반환값

3. View

[#https://github.com/django/django/blob/3.2/django/http/response.py](https://github.com/django/django/blob/3.2/django/http/response.py)

```
class HttpResponseBase:
```

```
    status_code = 200
```

```
    def __init__(self, content_type=None, status=None, reason=None, charset=None):
```

```
        self._headers = {}
```

```
        self._closable_objects = []
```

```
        self._handler_class = None
```

```
        self.cookies = SimpleCookie()
```

```
        self.closed = False
```

```
        if status is not None:
```

```
            try:
```

```
                self.status_code = int(status)
```

```
            except (ValueError, TypeError):
```

```
                raise TypeError('HTTP status code must be an integer.')
```

```
        if not 100 <= self.status_code <= 599:
```

```
            raise ValueError('HTTP status code must be an integer from 100 to 599.')
```

```
        self._reason_phrase = reason
```

```
        self._charset = charset
```

```
        if content_type is None:
```

```
            content_type = '%s; charset=%s' % (settings.DEFAULT_CONTENT_TYPE, self.charset)
```

```
        self['Content-Type'] = content_type
```

View 내 function의 반환값

3. View

```
class HttpResponse(HttpResponseBase):
    streaming = False

    def __init__(self, content=b'', *args, **kwargs):
        super().__init__(*args, **kwargs)
        self.content = content

class StreamingHttpResponse(HttpResponseBase):
class FileResponse(StreamingHttpResponse):
class HttpResponseRedirectBase(HttpResponse):
class HttpResponseRedirect(HttpResponseRedirectBase):
class HttpResponseNotModified(HttpResponse):
class HttpResponseBadRequest(HttpResponse):
class HttpResponseNotFound(HttpResponse):
class HttpResponseForbidden(HttpResponse):
class HttpResponseNotAllowed(HttpResponse):
class HttpResponseGone(HttpResponse):
class HttpResponseServerError(HttpResponse):
    class HttpResponseServerError(HttpResponse):
        class Http404(Exception):
class JsonResponse(HttpResponse):
```

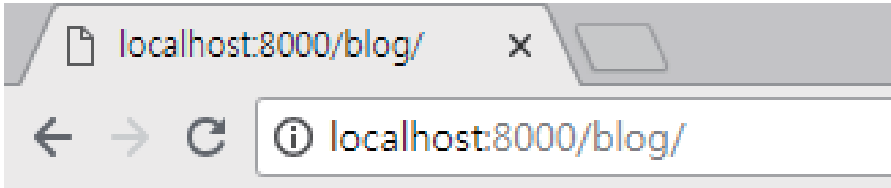
응답 정보 직접 처리

3. View

- blog/views.py

```
from django.http import HttpResponse
from .models import Post

def index(request):
    post_list = Post.objects.all()
    output=', '.join([p.title for p in post_list])
    return HttpResponse(output)
```



아이스하키,농구,축구,테니스

Template 사용

3. View

```
# blog/views.py
from django.template import loader
def index(request):
    post_list = Post.objects.all()
    template = loader.get_template('blog/index.html')
    context = {
        'post_list': post_list,
    }
    return HttpResponse(template.render(context, request))
```

```
# blog/templates/blog/index.html
{% if post_list %}
    <ul>
        {%for post in post_list %}
            <li><a href="/blog/{{post.id}}/">{{post.title}}</a></li>
        {% endfor %}
    </ul>
{% else %}
    <p> No posts are available.</p>
{% endif %}
```

Rander() 함수 - 주로 많이 씀

3. View

```
# blog/views.py
```

```
from django.shortcuts import render
```

```
def index(request):
```

```
    post_list = Post.objects.all()
```

```
    return render(request, 'blog/index.html', {'post_list': post_list})
```

템플릿페이지에서 사용할 이름

```
# django/shortcuts.py
```

```
def render(request, template_name, context=None, content_type=None, status=None, using=None): """
```

```
    Return a HttpResponse whose content is filled with the result of calling d  
   jango.template.loader.render_to_string() with the passed arguments.
```

```
    """
```

```
    content = loader.render_to_string(template_name, context, request, using=usin  
g) return HttpResponse(content, content_type, status)
```

템플릿페이지가 있는 곳은 앱/templates

detail View 작성

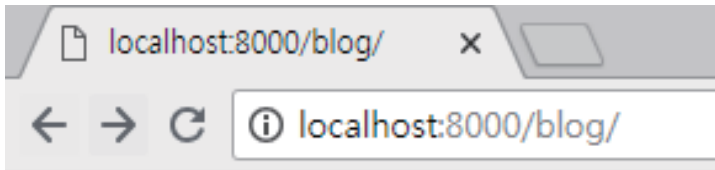
3. View

- blog/views.py

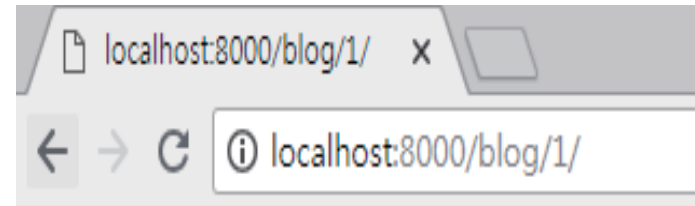
```
def detail(request, post_id):  
    return HttpResponse("You're looking at blog %s." %post_id)
```

- blog/urls.py

```
path('<int:post_id>/', views.detail)
```



- [아이스하키](#)
- [농구](#)
- [축구](#)
- [테니스](#)



You're looking at blog 1.

404 오류 발생

3. View

- blog/views.py

```
from django.http import Http404

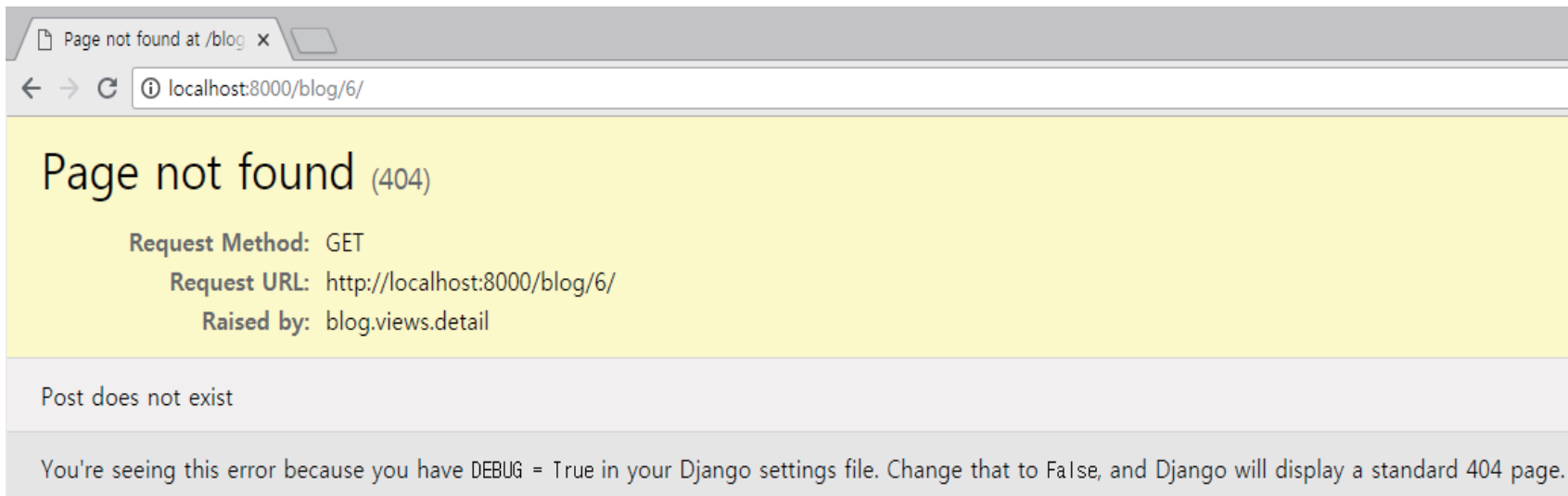
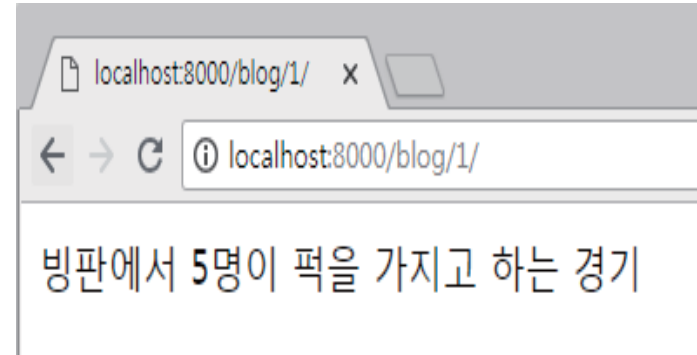
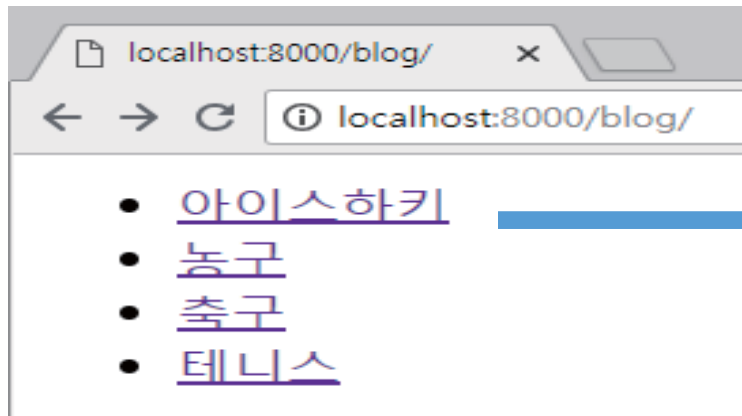
def detail(request, post_id):
    try:
        post = Post.objects.get(pk=post_id)
    except Post.DoesNotExist:
        raise Http404("Post does not exist")
    return render(request, 'blog/detail.html', {'post':post})
```

- blog/templates/blog/detail.html

```
{{ post.content }}
```

404오류 발생

3. View



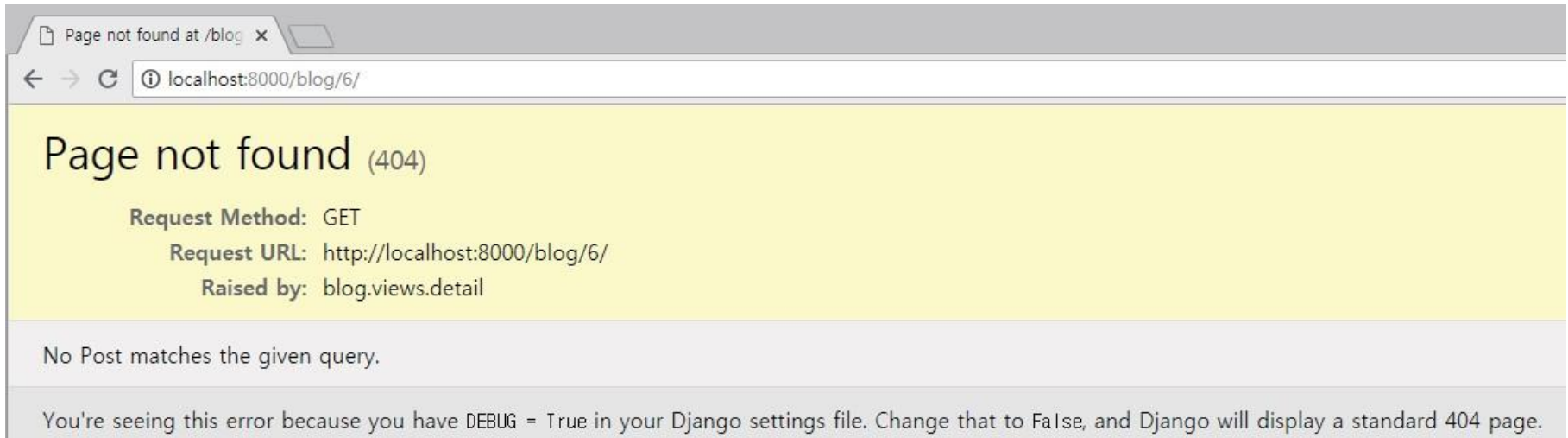
get_object_or_404() 함수

3. View

- blog/views.py

```
from django.shortcuts import render, get_object_or_404

def detail(request, post_id):
    post = get_object_or_404(Post, pk=post_id)
    return render(request, 'blog/detail.html', {'post': post})
```



JSON 데이터 응답

[HttpResponse 객체](#)의 HttpResponse subclasses 참조

3. View

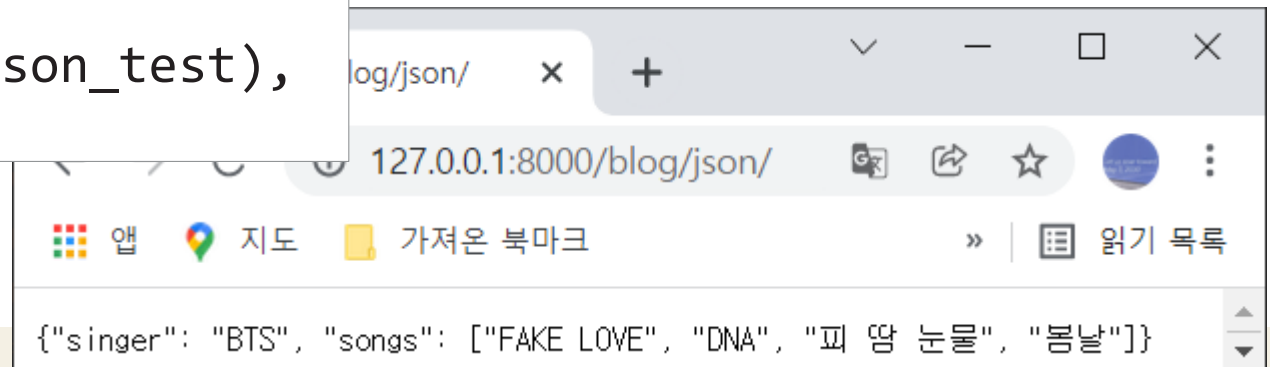
- blog/views.py

```
from django.http import JsonResponse # HttpResponse 하위클래스

def json_test(request):
    music = {'singer': 'BTS', 'songs': ['FAKE LOVE', 'DNA', '피 땀 눈물', '봄날']}
    return JsonResponse(music, json_dumps_params={'ensure_ascii': False}) # 한글 깨지지 않으려
```

- blog/urls.py

```
urlpatterns = [
    path('json/', views.json_test),
]
```



JSON 데이터 응답

3. View

- blog/views.py

```
import os
from django.conf import settings

def excel_download(request):
    filepath = os.path.join(settings.BASE_DIR, 'demo.xlsx')
    filename = 'demo.xlsx'
    with open(filepath, 'rb') as f:
        response = HttpResponse(f, content_type='application/vnd.ms-excel')
        response["Content-Disposition"] =
            "attachment; filename={}".format(filename)
    return response
```

- blog/urls.py

```
urlpatterns = [
    path('file/', views.excel_download),
]
```


Pandas를 통해 CSV 응답

3. View

```
import pandas as pd
from io import StringIO
from urllib.parse import quote
from django.http import HttpResponse

def pandas_csv(request): df = pd.DataFrame([
    [100, 110, 120],
    [200, 210, 220],
    [300, 310, 320],
])

io = StringIO()
df.to_csv(io)
io.seek(0)

filename = quote('pandas_csv.csv')
response = HttpResponse(io, content_type="text/csv")
response['Content-Disposition'] =
    "attachment; filename*=utf-8' '{}".format(filename)
return response
```

Pandas를 통해 excel 응답

3. View

```
import pandas as pd from io import BytesIO
from urllib.parse import quote
from django.http import HttpResponse

def pandas_excel(request): df = pd.DataFrame([
    [100, 110, 120],
    [200, 210, 220],
    [300, 310, 320],
])

io = BytesIO()
df.to_excel(io)
io.seek(0)

filename = quote('pandas_excel.xlsx')
response = HttpResponse(io, content_type="application/vnd.ms-excel")
response['Content-Disposition'] =
    "attachment; filename={}".format(filename)
return response
```

Redirect

3. View

```
from django.shortcuts import redirect

def get_redirect1(request):
    return redirect('/blog/', permanent=True)

def get_redirect2(request):
    return redirect('http://google.com')
```