Django Q&A

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Contents

1 Django Related Installation

1. How to install python?
   Use conda directly

2. How to install Django?
   Use command $ conda install django, Tip: pip may cause version problem

3. How to check version of Django?
   Use command $ python -m django - -version, this can be used for other package

4. What is the default database for Django?
   Its SQLite

5. What 2 parts does Django project have?
   One is the production website another is the admin system

6. How to create a Django project?
   Use command $ django-admin startproject PRO_NAME, this will create a Django project

7. Where should project code be?
   Any path but not static path(code exposure may cause security problem)

8. Any trick on project name?
   Do not use any keyword!

9. How to start a Django service?
   Use command $ python manage.py runserver, and it is started! (may be migration problems)

10. How to quickly avoid migrate problem?
    Use command $ python manage.py migrate(will be detailed latter)

2 Structure of Django Project

1. Does outmost folder name matter?
   No, its just a container

2. What is manage.py file for?
   For python interaction in command line

3. What does the package for the project contain?
   4 parts: ___init___.py(empty), setting.py(config file), url.py(URL dispatcher, table of content), wsgi.py(WSGI service)

4. Do we prefer WSGI?
   No, because of poor performance

5. How to start a Django service with certain port?
   Use command $ python manage.py runserver 8080, by default 8000 will be used

6. What is automatic reloading?
   You don't need to restart the server to make the code to take effects

3 View

1. How to create an app in Django?
   Use command $ python manage.py startapp APP_NAME, this will create a package

2. What does the package for the app contain?
   ___init___.py, admin.py, apps.py, models.py, test.py, urls.py, view.py and migrations folder

3. What is view.py for?
   For controlling how and what the webpage is to display, a view is a "type" of webpage, represented by a function

4. What does view do?
   Return a http response or raise an exception like Http404

5. How to write a simple view?
   1. from django.http import HttpResponse
   2. def index(request): #write index function
         return HttpResponse("Hi, this is the poll index")

6. Comment on simple view?
   Function name can be anything, but must be registered in url(next one)

7. How to register a view in urls.py?(Recommanded)
   1. create urls.py in the app package, by default, there is no url.py
   2. from django.urls import path
   3. from . import views # import the corresponding view
   4. urlpatterns = [path('', views.index, name='index')]# add url pattern list
   5. from django.urls import path, include # register in project url by include() function
      urlpatterns = [path('admin/', admin.site.urls),
      path('polls/', include('polls.urls')),]

8. Comments on registering in urls.py
   View needs to be registered to app url, app url needs to be registered to project urls, both by path function

9. Why path for admin is different from the others?
   Admin case is the only one exception

10. API of path() function?
    Route: regex contain url pattern(will be append!), view: a function, name: refer to it unambiguously in template

11. How to use URL to pass arg to function?
    Use angle brackets <>, with format <TYPE: ARG>, e.g <int:question_id>, url info will be used as arg to pass into func

4   Settings

1. Where is database config info?
   In project setting.py, DATABASES dict

2. Why Django use SQLite by default?
   SQLite is included in python, easier to use

3. How to change database type?
   In ENGINE entry, start with django.db.backends.ENG_TYPE, it can be
   sqlite3(default), mysql, oracle, postgresql

4. How to setup NAME for SQLite3?
   Just use default

5. What if RuntimeError: cryptography is required?
   Use command $ pip install cryptography

6. Preparation in MySQL?
   You must create a database schema with the target name before use it!

7. How to setup NAME for MySQL?
   Set it to be the same as the database name in MySQL, e.g "mysite"

8. Other setup info for MySQL?
   $ pip install pymysql is required for connection, (mysqlclient may have prob-
   lem)

9. How to init pymysql?
   Add import pymysql and pymysql.install_as_MySQLdb() in project ___init___.py

10. All config for MySQL?
    ENGINE, NAME, USER, PASSWORD, HOST, PORT, all var and value
    should be in string

11. How to check if MySQL connection works?
    Use command $ python manage.py migrate to see if data could be injected
    into the database

12. How to make log display SQL command(Debug)?
    Add the following code in project setting.py:
    LOGGING = {
        'version': 1,
        'disable_existing_loggers': False,
        'handlers': {
          'console': {
            'level': 'DEBUG',
            'class': 'logging.StreamHandler',
          },
        },
        'loggers': {
          'django.db.backends': {
            'handlers': ['console'],
            'propagate': True,

'level': 'DEBUG',
            },
          }
        }

13. What TIME_ZONE setting should use?
    Always use TIME_ZONE = 'UTC', other time should be converted

14. Where does all Apps registered?
    In INSTALLED_APPS list in project settings, there are several apps by
    default for connivence

15. What does migrate command do?
    Look INSALLED_APPS settings and create necessary database table ac-
    cording to project settings

5 Models

1. What is model?
   Database layout and additional metadata, highly related to database

2. How to import model class?
   In app models.py, add from django.db import models, and create class inherit
   from models.Model

3. Mechanism of model class?
   Each var has a field type which is directly linked to field in database

4. API for models.ForeignKey?
   Set a field as foreign key, has 2 args, first one is the class name as foreign
   key, second on_delete=models.CASCADE

5. How on_delete works?
   Control if foreign key needs to be delete if primary key is delete, CASCADE
   will, and DO_NOTHING will not

6. API for models.CharField()?
   Create a string, have a arg max_length=200, which set the max length

7. API for models.DateTimeField()?
   Create a time field, arg is a string to give it name

8. API for models.IntegerField()?
   Create a integer field, arg is default=0, default value should be set

9. How to activate a model?
   In project setting, add 'APP_NAME.app.APP_NAMEConfig' in INSTALLED_APPS

10. How to apply changes in models to database?
    Use command $ python manage.py makemigrations [poll], app name is op-
    tional

11. How to see corresponding SQL to migrations?
    Use command $ python manage.py sqlmigrate APP_NAME 000x, this will print SQL

12. How to bring migrations into effects?
    Again, use command $ python manage.py migrate, this will create corresponding tables in DB

13. Migrate vs makemigrations?
    That createmigrate creates the changes in model and migrate apply changes to database

14. How to change the model class representation?
    Use ___str___() function, make the return value easy to read

15. How to add method to a model?
    Directly add a method as general method

16. How to get a model latest list?
    Use syntax list = CLASS_NAME.object.order_by('-ATTR_NAME')[num1:num2]

17. How to get a model total list?
    Use syntax list = CLASS_NAME.object.all()

6 Debug and Shell

1. How to use shell to debug?
   Use command $ python manage.py shell, which is not recommend

2. How to get current time?
   Use from django.utils import timezone and use timezone.now() to get current time

3. How to get current year?
   Use time.now().year

4. More advanced way to debug?
   Use debug script with format:
   import os
   import django
   if ___name___ == "___main___":
       #copy from manage.py
       os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'mysite.settings')
       django.setup()

5. How to see table details?
   Import corresponding class and use CLASS_NAME.object.all() to get list

6. How to see record count?
   Import corresponding class and use CLASS_NAME.object.count() to num of record

7. How to create a record?
   VAR = CLASS_NAME(var1=val1. . .), then VAR.save()

8. How to get field value from a record?
   VAR.FIELD_NAME

9. How to set field value for a record?
   Use VAR.FIELD_NAME = new_val, after this, must call VAR.save()

10. How to use filter API?
    With syntax CLASS_NAME.object.filter(condition)

11. What condition could be implemented to filter?
    Value equality condition(id=1), relationship className_property___filterMethod=value, all should in low case

7   Django Admin

1. What is Django admin?
   A site for stuff and management, site for manager

2. How to create Django admin?
   Use command $ python manage.py createsuperuser, and then follow instruction

3. How to go to admin site?
   Use command $ python manage.py runserver and then go to /admin to login

4. Which app offer service to group and users?
   By app: django.contrib.auth

5. How to make app modifiable in admin?
   In app admin.py, import needed class and use admin.site.register(CLASS_NAME) to do,Tip: no indication on register() function and dont register a class more than once!

8   Template

1. What is template?
   Mechanism to separate design from python

2. How to create template?
   Create a folder named "template" in app package and then a folder with the same name as app(namespacing issue)

3. Where the template setting is?
   In project setting.py, TEMPLATES list, by default, 'APP_DIRS': True

4. How to write a template?
   A Lot. . . coming soon, for now just copy and paste