Web dev with django

- Web app
- MVC in diango

ref：https://docs.djangoproject.com/en/3.1/

Django installation

1、install python
2、install Django
python -m pip install Django==3.1
3、validation jango
①python program:
import Django
(no error)

print(django.get_version())

②python -m django --version

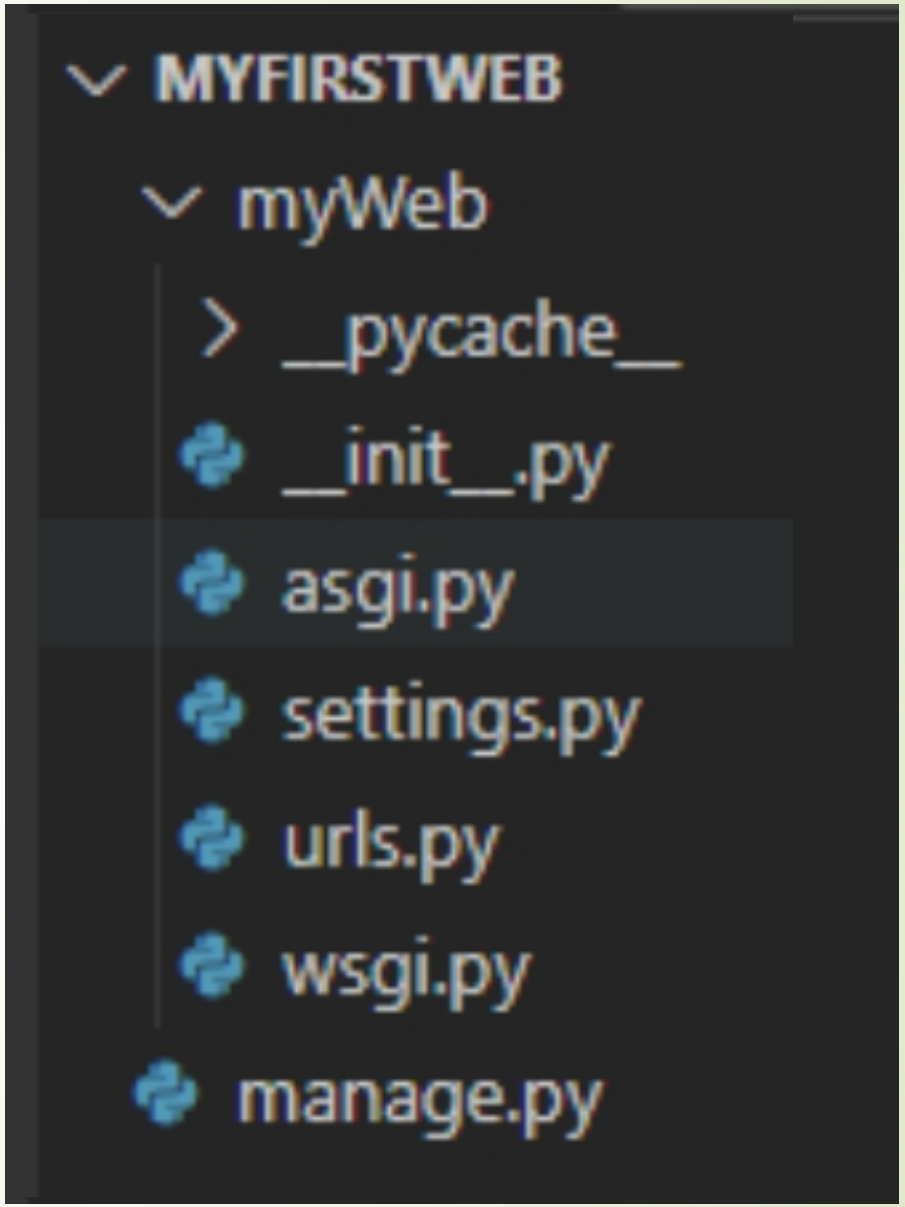
New project

django-admin startproject myWeb

```
> django-admin startproject myWeb
```

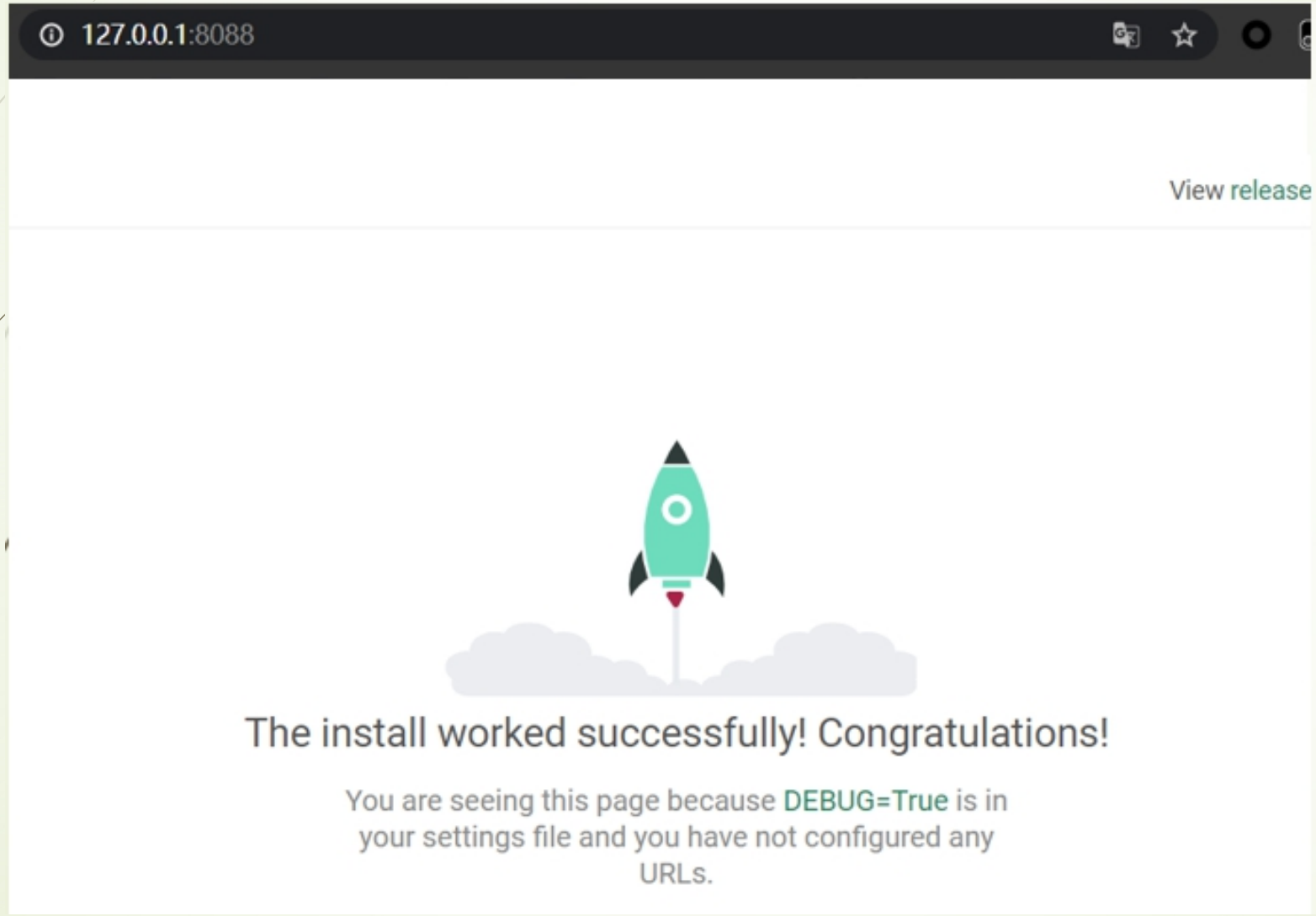
myWeb: named by yourself

Setting.py: Django project config
manage.py: Django management with cmd



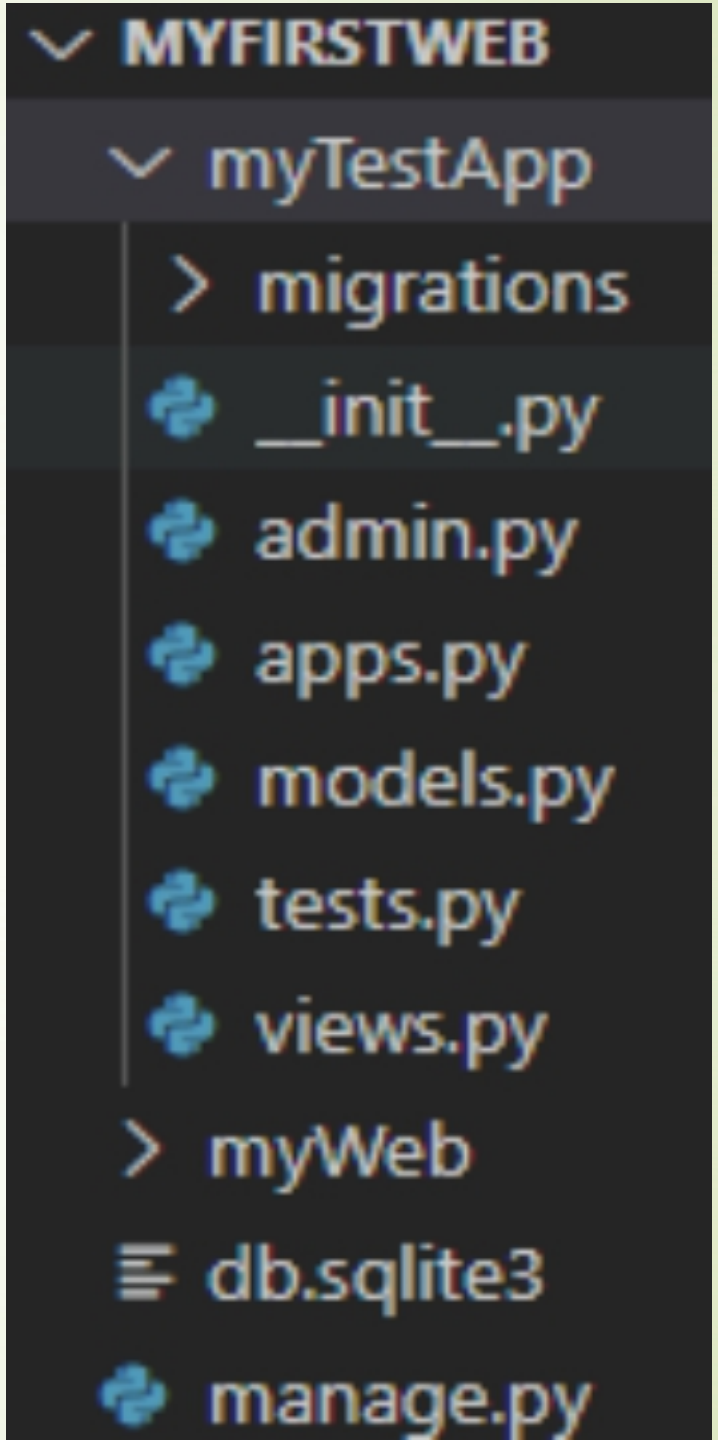
Run web server

```
python .\manage.py runserver 8088
```



New APP

python manage.py startapp myTestApp



views

myTestApp/views.py: add the following code

```
from django.http import HttpResponse

def index(request):
    return HttpResponse("Hello, world.")
```

Receive web request -> return web response

urls

localhost/*myTestApp/index*

settings.py > ...

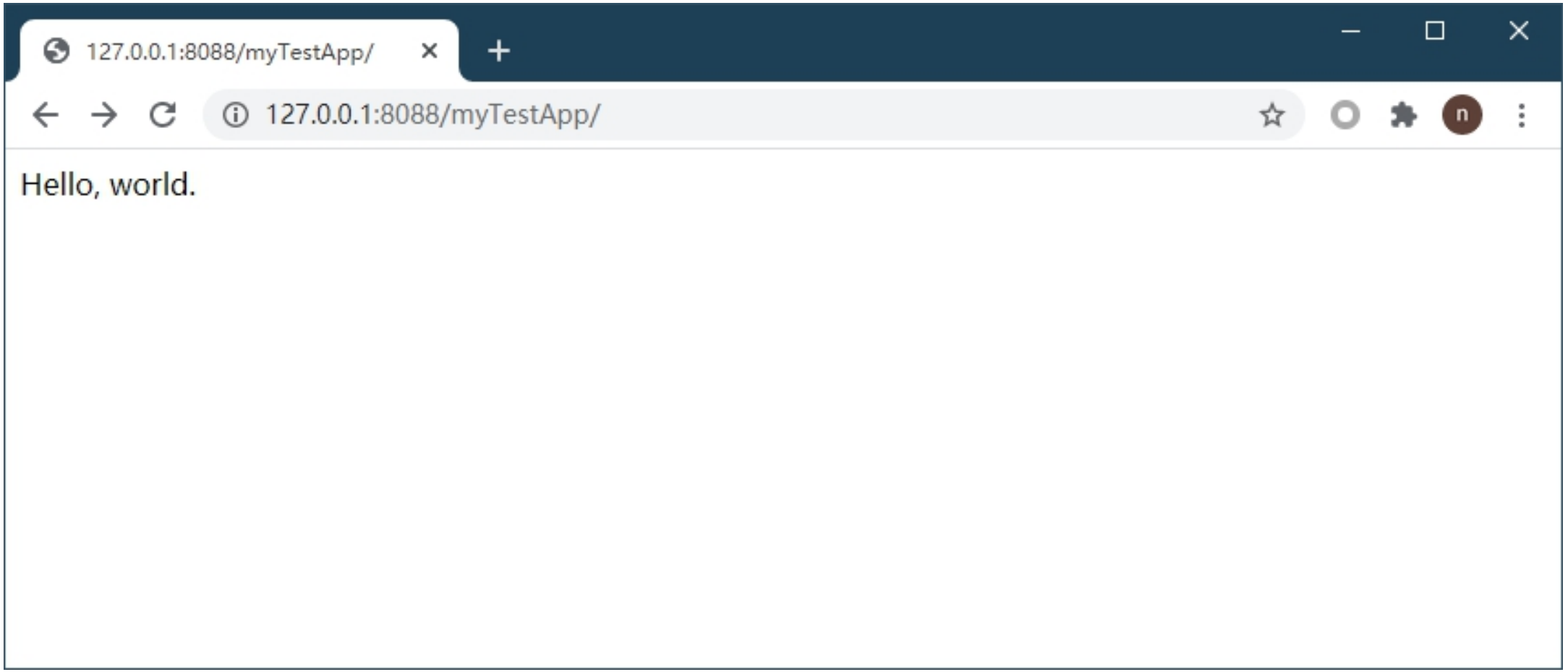
```
ROOT_URLCONF = 'myWeb.urls'
```

myTestApp/ create a new file: urls.py

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

myWeb/urls.py: add a new line

```
urlpatterns = [
    path('admin/', admin.site.urls),
    path('myTestApp', include('myTestApp.urls'))]
```


127.0.0.1:8088/myTestApp/
127.0.0.1:8088/myTestApp/
Hello, world.

```
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| username | varchar(20) | NO   | PRI | NULL    |       |
| password | varchar(20) | NO   |     | NULL    |       |
| age      | int         | NO   |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
```

Web Input :
user and password

Use mysql

1、create a database in mysql
2、pip install mysqlclient or pymysql
3、setting: config

```
DATABASES = {
    'default': {
        # 'ENGINE': 'django.db.backends.sqlite3',
        # 'NAME': BASE_DIR / 'db.sqlite3',
        'ENGINE': 'django.db.backends.mysql',   # database engine
        'NAME': 'lib',  # database name
        'USER': 'root',     # username for mysql
        'PASSWORD': '123456',  # password for mysql user
        'HOST': '127.0.0.1',  # mysql server
        'PORT': '3306',         # mysql port
    }
}
```

models

Model: a table in database

```python
from django.db import models


# Create your models here.


class User(models.Model):
    # username = models.CharField(primary_key=True, max_length=20)  # db_column = 'mytestapp_user_username'
    # password = models.CharField(null=False, max_length=20)
    # age = models.IntegerField()

    username = models.CharField(primary_key=True, max_length=20, db_column='username')
    password = models.CharField(null=False, max_length=20, db_column='password')
    age = models.IntegerField(db_column='age')

    class Meta:
        db_table = 'user'  # 通过db_table自定义数据表名
```

```python
def login(request):
    if request.method == "POST":
        username = request.POST.get('username')
        password = request.POST.get('password')

        # Select * from User where username=username and password=password
        userInfo = User.objects.filter(username=username, password=password)
        if userInfo:
            msg = 'Login Success'
        else:
            msg = 'Login Fail'

        ret = {
            'username': username,
            'password': password,
            'msg': msg,
            'info': list(User.objects.all().values())
        }
        return render(request, 'index.html', ret)
    else:
        return render(request, 'login.html')
```

Get the value from web

Return value to web

templates

login.html

```
<html>
<head>
<title>Login</title>
</head>

<body>
    <form action="/myTestApp/login" method="POST">
        <input type="text" placeholder="username" name="username">
        <input type="password" placeholder="password" name="password">
        <button>Login</button>
    </form>
</body>

</html>
```

templates

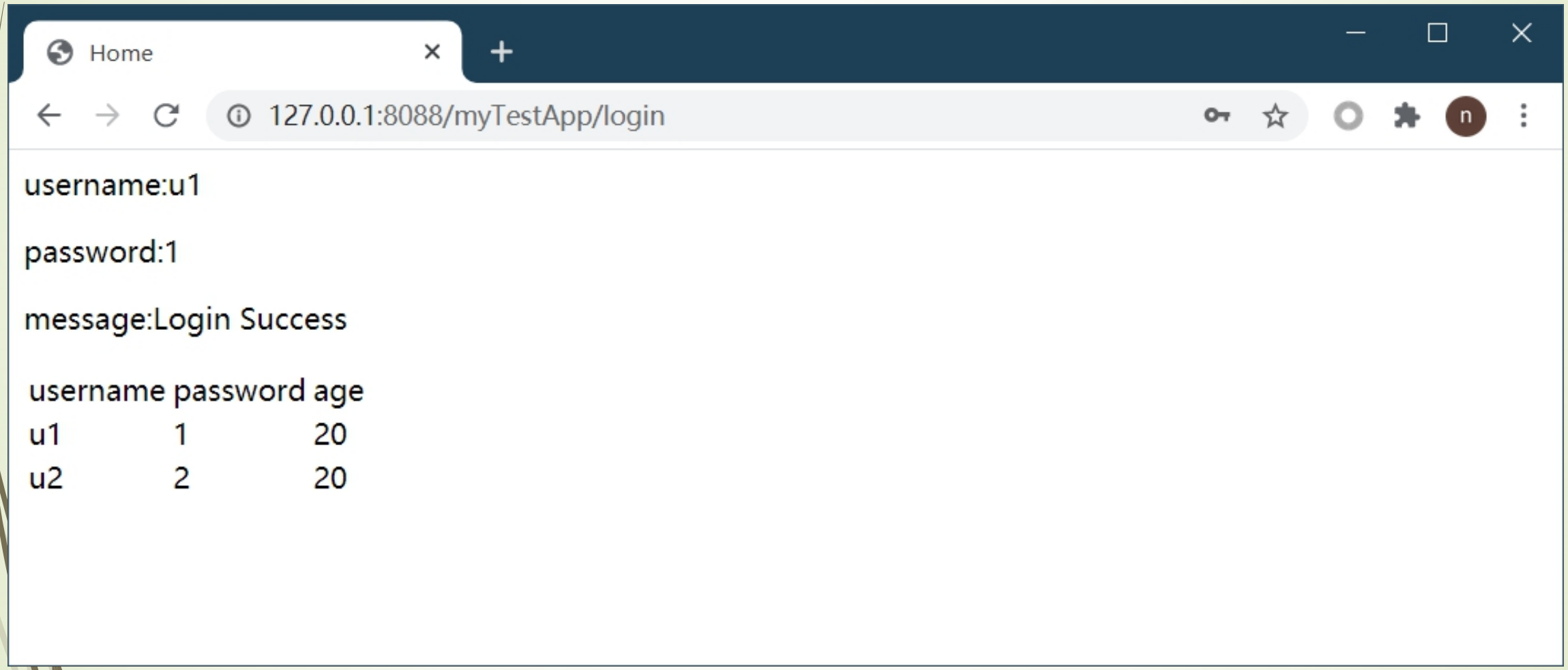
index.html

```
<html>
<head><title>Home</title></head>
<body>
    <p>username:{{username}}</p>
    <p>password:{{password}}</p>
    <p>message:{{msg}}</p>
    <table>
        <tr>
            <td>username</td>
            <td>password</td>
            <td>age</td>
        </tr>
        {% for i in info %}
        <tr><td>{{i.username}}</td>
            <td>{{i.password}}</td>
            <td>{{i.age}}</td></tr>
        {% endfor %}
    </table>
</body>
</html>
```

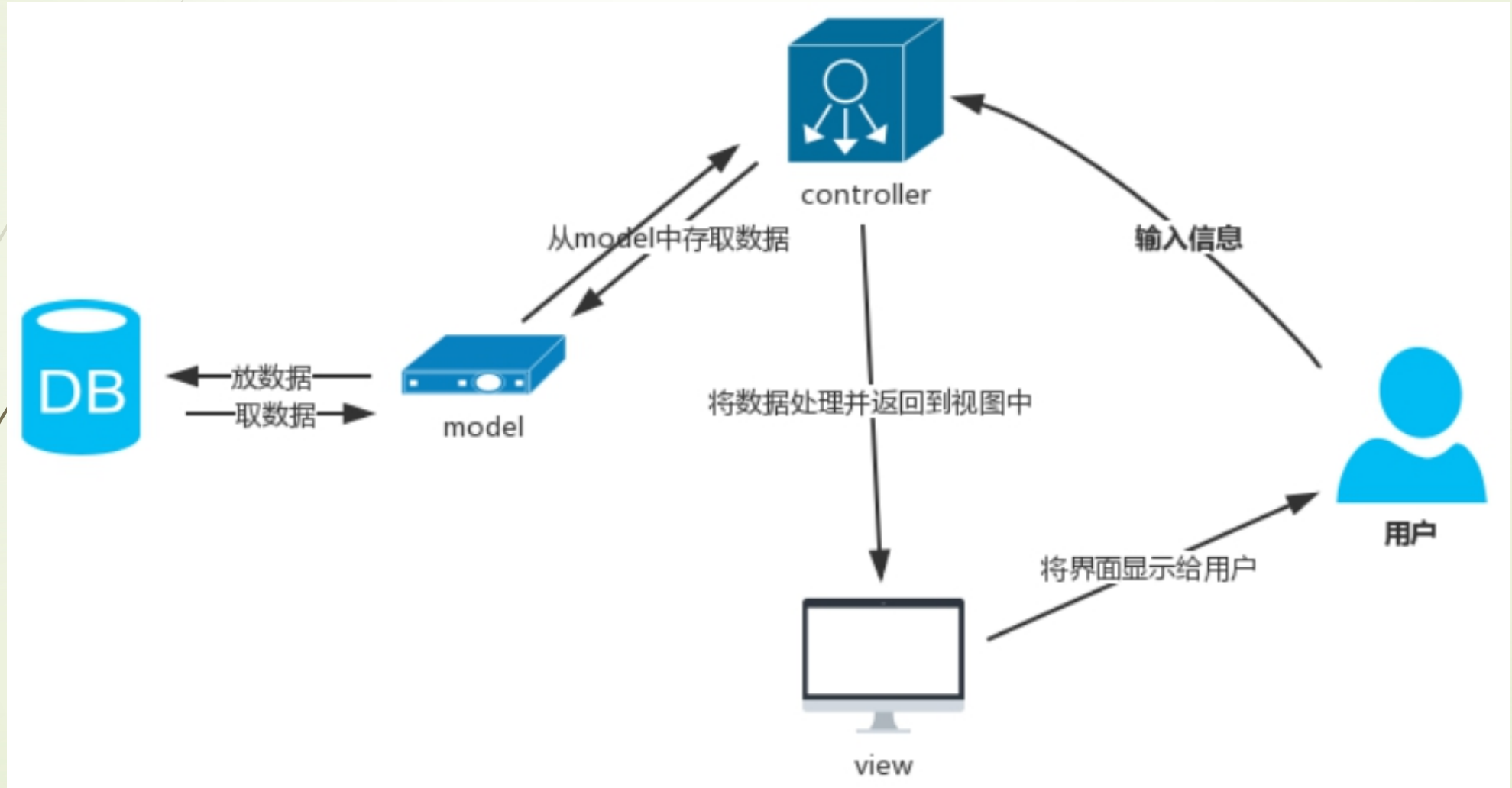
Urls: add the router information

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

- Basic Flow：
  - User access： localhost:myTestApp/login
  - Urls.py will call views.login()
  - views.login() return “login.html”
  - User input username and password, then call myTestApp/login
  - Urls.py call views.login()
  - views.login() return index.html and data
  - Index.html present


Home
127.0.0.1:8088/myTestApp/login
n
username:u1
password:1
message:Login Success
username password age
u1 1 20
u2 2 20

MVC Model-View-Controller



MVT in Django
Model-View-Template