Learn Djando

install Django module 3.2.3

```
pip install django
python -m pip install --upgrade pip
```

check all modules that pip installed

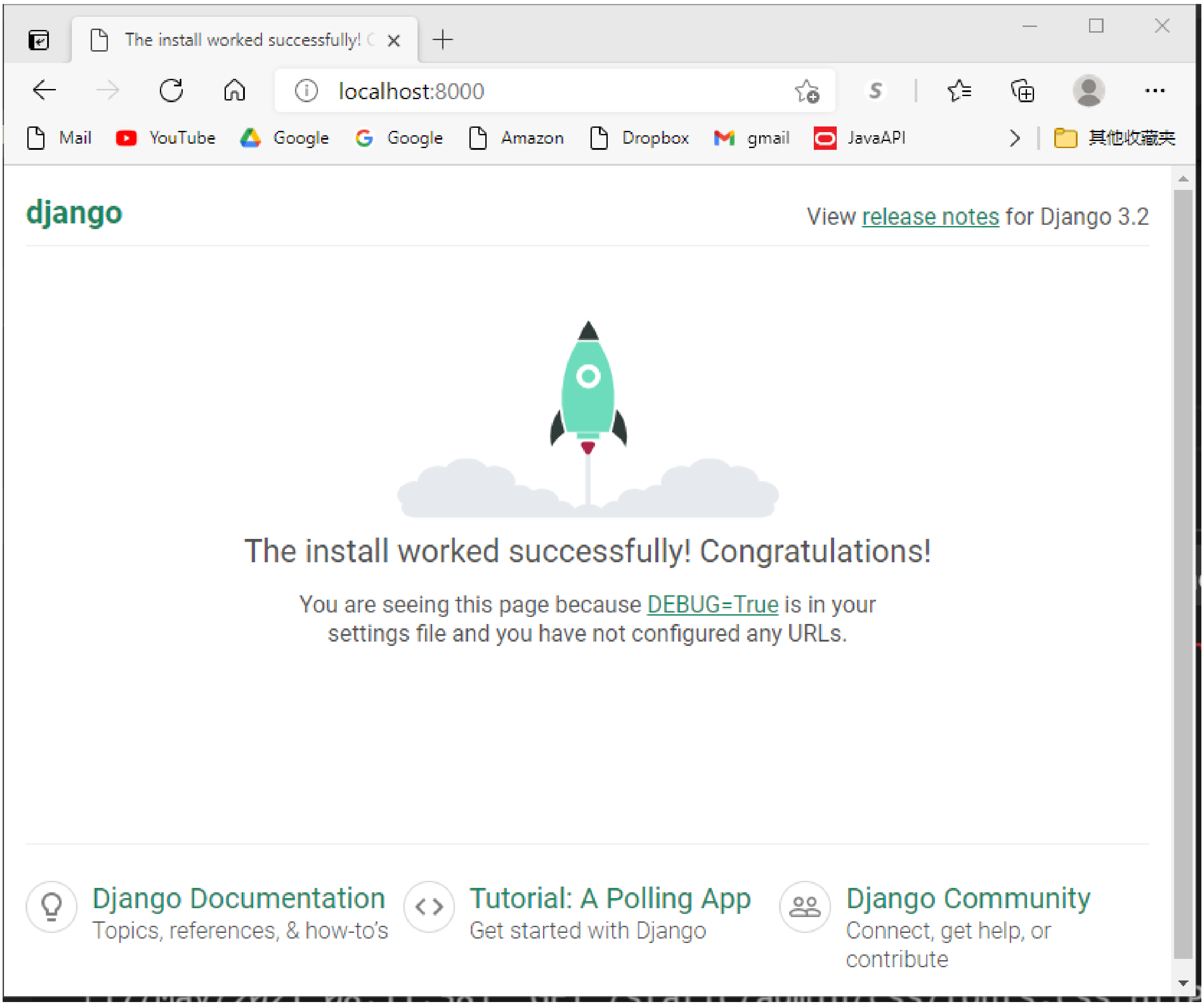
```
pip freeze
```

django-admin

```
django-admin
mkdir src
cd src
django-admin startproject <project name> .
django-admin startproject trydjango
python manage.py runserver
```

Open browser, type in "localhost:8000"

localhost:8000



The install worked successfully! Congratulations!

You are seeing this page because DEBUG=True is in your settings file and you have not configured any URLs.

admin

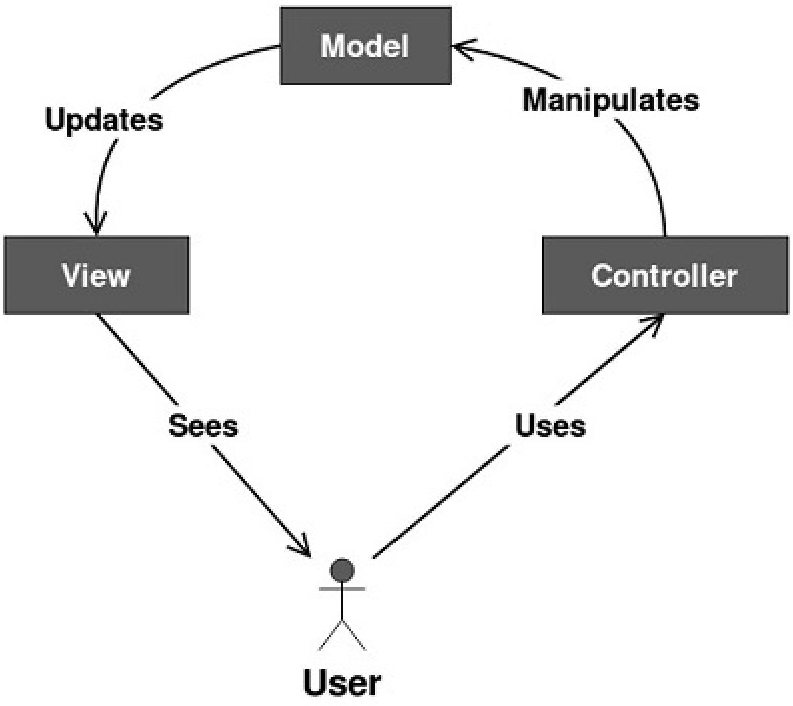
Stop the app by click Ctrl+c on terminal

```
python manage.py migrate
python manage.py createsuperuser
```

Start your own application

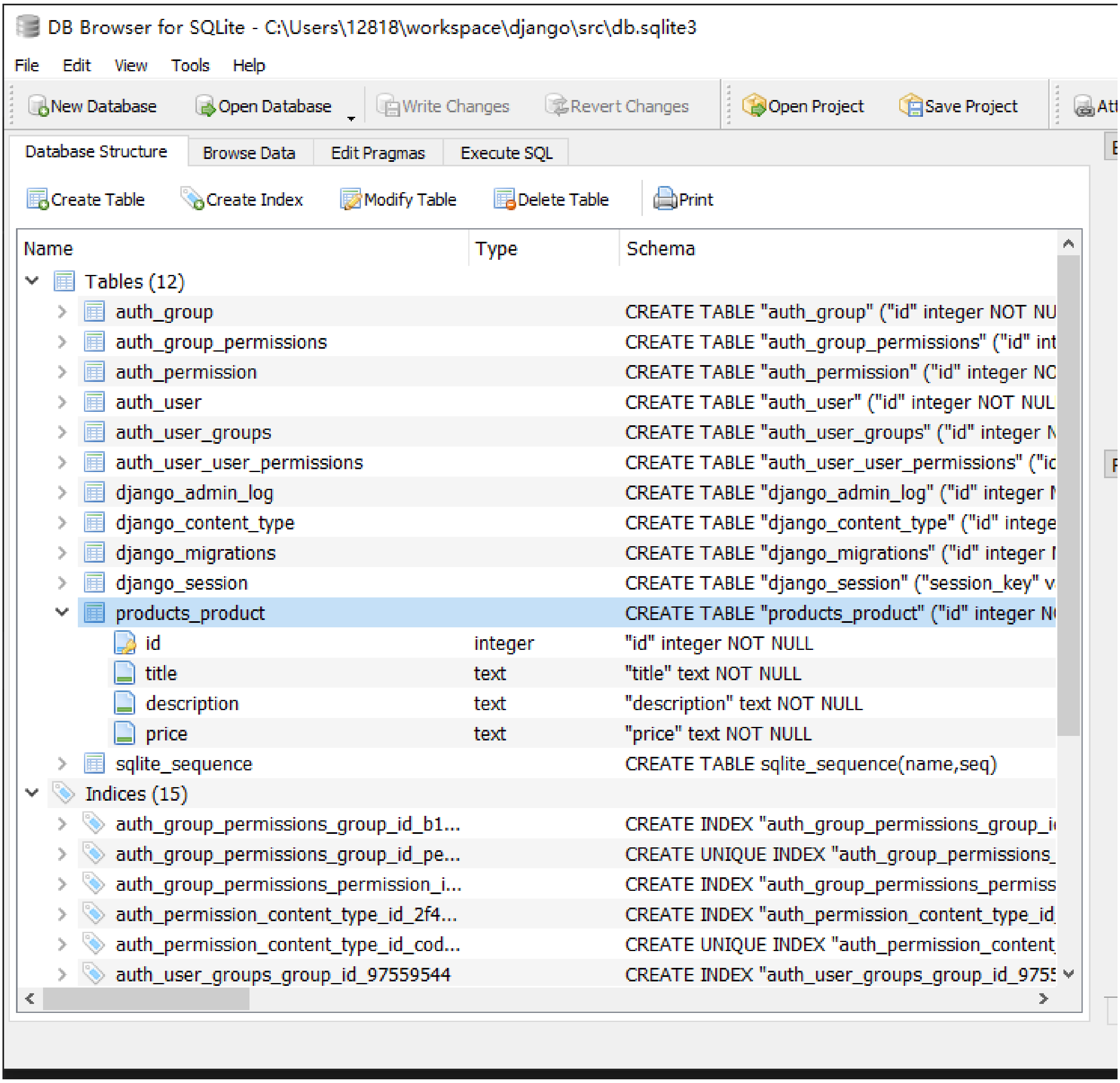
```
python manage.py startapp products
```

- ./products/models.py



- Create class named Product inside models.py
- add 'product' as INSTALLED_APP in trydjango/settings.py
- migrate your model to database

```
python manage.py makemigrations
python manage.py migrate
```

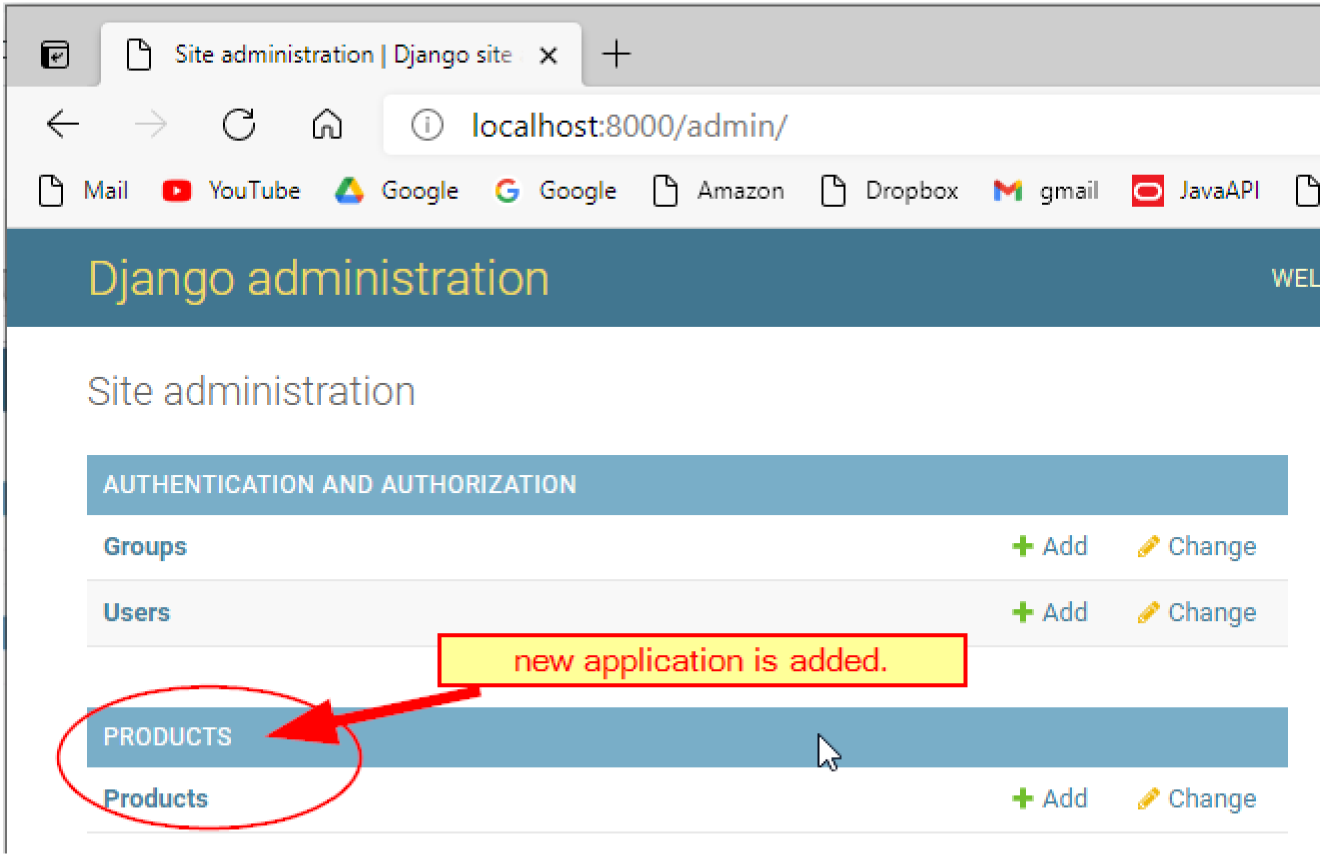


Name	Type	Schema
Tables (12)		
auth_group		CREATE TABLE "auth_group" ("id" integer NOT NU
auth_group_permissions		CREATE TABLE "auth_group_permissions" ("id" int
auth_permission		CREATE TABLE "auth_permission" ("id" integer NC
auth_user		CREATE TABLE "auth_user" ("id" integer NOT NUL
auth_user_groups		CREATE TABLE "auth_user_groups" ("id" integer N
auth_user_user_permissions		CREATE TABLE "auth_user_user_permissions" ("ic
django_admin_log		CREATE TABLE "django_admin_log" ("id" integer N
django_content_type		CREATE TABLE "django_content_type" ("id" intege
django_migrations		CREATE TABLE "django_migrations" ("id" integer N
django_session		CREATE TABLE "django_session" ("session_key" v
products_product		CREATE TABLE "products_product" ("id" integer N
id	integer	"id" integer NOT NULL
title	text	"title" text NOT NULL
description	text	"description" text NOT NULL
price	text	"price" text NOT NULL
sqlite_sequence		CREATE TABLE sqlite_sequence(name,seq)
Indices (15)		
auth_group_permissions_group_id_b1...		CREATE INDEX "auth_group_permissions_group_i
auth_group_permissions_group_id_pe...		CREATE UNIQUE INDEX "auth_group_permissions_
auth_group_permissions_permission_i...		CREATE INDEX "auth_group_permissions_permiss
auth_permission_content_type_id_2f4...		CREATE INDEX "auth_permission_content_type_id
auth_permission_content_type_id_cod...		CREATE UNIQUE INDEX "auth_permission_content
auth_user_groups_group_id_97559544		CREATE INDEX "auth_user_groups_group_id_9755

You may need do these 2 commands every single time you make change on your products/models.py

- modify products/admin.py

```
from .models import Product
admin.site.register(Product)
```



Python Shell

```
python manage.py shell
>>> from products.models import Product
>>> Product.objects.all()
>>> Product.objects.create(title="New product", description='new description',
price='9.99',summary='this is super easy.')
```

products/views.py

products/views.py

- create application named pages

```
python manage.py startapp pages
```

- modify pages/views.py
- add the following code in trydjango/urls.py

```
from pages.views import home_view

urlpatterns = [
  path('', home_view, name='home'),
]
```

where pages is the application folder, and views is the python file in the folder.

Get rid of missing favicon.ico file

- add static/images/favicon.ico file
- in trydjango/settings.py add

```
STATICFILES_DIRS = [os.path.join(BASE_DIR, 'static')]
```

- in trydjango/urls.py add path entry for 'favicon.ico' file

```
from django.contrib.staticfiles.storage import staticfiles_storage
from django.views.generic.base import RedirectView

urlpatterns = [
    path('', home_view, name='home'),
    path('home/', home_view, name='home'),
    path('admin/', admin.site.urls),
    path('favicon.ico',
RedirectView.as_view(url=staticfiles_storage.url('images/favicon.ico')))
]
```

- modify views.py under products folder

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

# Create your views here.
def home_view(*args, **kwargs):
    return HttpResponse("<h1>Hello World!</h1>")
```

- [works, but incorrect] add products/urls.py into products folder

```
from django.contrib import admin
from django.urls import path
from products import views

urlpatterns = [
    path('', views.home_view, name='home'),
    path('admin/', admin.site.urls),
]
```

- [works, but incorrect] change the setting 'ROOT_URLCONF' point to products.urls

```
ROOT_URLCONF = 'products.urls'
```

in trydjango/settings.py file.

Django Template

- add src/templates folder (can be named whatever you want.)
- add html files in it, home.html
- Return render() in views.py

```python
def home_view(request, *args, **kwargs):
    return render(request, "home.html", {})
```

- Tell Django where is the templates folder add 'DIRS' setting in trydjango/settings.py file

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

- use {% block content %} {% endblock %} in both base.html and templates html file such as home.html
- use {% extends '<filename.html>' %} in all template html file

    ```html
    {% extends 'base.html' %}
    {% block content %}

      <h1><font color="blue">Hello World.</font></h1>
        The user {{request.user}} is authenticated?
        {{request.user.is_authenticated}}
        <p>This is a <font style="color:crimson;font-weight: bold;">Home Page</font> template.</p>
    {% endblock %}
    ```

References

- Django Document
- Field Types
- TextField

- CharField
- TextField
- DecimalField
- 3 hours and 45 minutes Django YouTube Video
- Form Field Document

Display DB data

1. create view function in views.py
2. add template html in /templates//.html file
3. add entry in trydjango/urls.py
4. add entry in navbar.html

Image Magick

Conver images from png to gif

```
magick F_*.png motion.gif
magick pencil.png favicon.ico
```

Static files

STATIC_URL

Modify settings.py

```
STATIC_URL = '/static/'
STATIC_ROOT = os.path.join(BASE_DIR, 'static')
```

Sample file structure

```
├── db.sqlite3
├── manage.py
├── wordapp
│   ├── __init__.py
│   ├── settings.py
│   ├── urls.py
│   └── wsgi.py
└── wordcountapp
    ├── admin.py
    ├── __init__.py
    ├── migrations
    │   ├── __init__.py
    ├── models.py
    ├── static
    │   └── css
    │       └── style.css
    ├── templates
    │   └── index.html
    ├── tests.py
    ├── urls.py
    └── views.py
```

Other related topics

Generic editing views

Function based views

Class based views

- FormView
- CreateView
- UpdateView
- ListView,
- DeleteView