# Complete Django Project Guide - From Scratch to Running

This guide will walk you through creating a Django project from scratch and getting it running in your browser, following the exact steps we performed in class.

# **Prerequisites**

- **Python 3**: Verify with (python3 --version)
- Terminal/Command Prompt: Basic navigation skills
- **VS Code**: Code editor for development
- Web Browser: To view your Django application

# **Step-by-Step Guide**

## Step 1: Navigate to Your Development Directory

Open your terminal and navigate to your development folder:

bash

cd /path/to/your/development/folder

If you have a Django directory:

bash

cd Django/

# Step 2: Create Virtual Environment

Create an isolated Python environment:

bash

python3 -m venv denv

# Step 3: Activate Virtual Environment

macOS/Linux:

source denv/bin/activate

### Windows (Command Prompt):

cmd

denv\Scripts\activate

### Windows (PowerShell):

powershell

.\denv\Scripts\Activate.ps1

**Confirmation:** You should see ((denv)) at the beginning of your terminal prompt.

## Step 4: Install Django

Install Django with pip:

bash

pip install django

# Step 5: Create Django Project

Create a new Django project:

bash

django-admin startproject todo\_project

## Step 6: Navigate to Project Directory

Move into your project folder:

bash

cd todo\_project/

# Step 7: Create Django App

Create a new app within your project:

python3 manage.py startapp tasks

# **Step 8: Apply Initial Migrations**

Set up the database with Django's built-in tables:

bash

python3 manage.py migrate

### Step 9: Create Superuser

Create an admin user for the Django admin interface:

bash

python3 manage.py createsuperuser

Enter the following when prompted:

- **Username**: (press Enter for default or type your preferred username)
- **Email**: (optional, can be left blank)
- **Password**: (type a secure password)
- **Password confirmation**: (retype the same password)

# Step 10: Start the Development Server

Run the Django development server:

bash

python3 manage.py runserver

You should see output like:

Watching for file changes with StatReloader Performing system checks...

System check identified no issues (0 silenced).

January 06, 2025 - 10:30:45

Django version 4.2.x, using settings 'todo\_project.settings'

Starting development server at http://127.0.0.1:8000/

Quit the server with CONTROL-C.

## Step 11: Open in Browser

Open your web browser and visit:

### Main Django Welcome Page:

http://127.0.0.1:8000/

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http://localhost:8000/

You should see the Django welcome page with a rocket ship!

### Django Admin Interface:

http://127.0.0.1:8000/admin/

Log in with the superuser credentials you created in Step 9.

# **Complete Command Summary**

Here's the complete sequence of commands to copy and paste:

```
bash

# Navigate to your development directory
cd /path/to/your/development/folder

# Create virtual environment
python3 -m venv denv

# Activate virtual environment
source denv/bin/activate # macOS/Linux
# OR
denv\Scripts\activate # Windows
```

# Install Django
pip install django

# Create Django project django-admin startproject todo\_project

# Navigate to project directory cd todo\_project/

# Create Django app
python3 manage.py startapp tasks

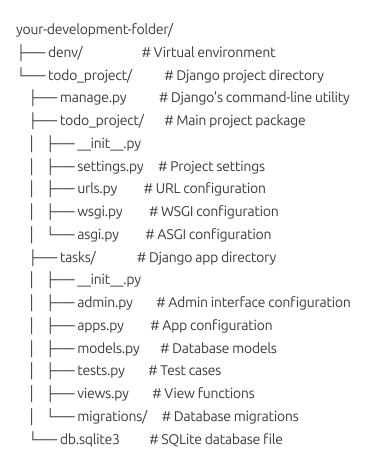
# Apply initial migrations
python3 manage.py migrate

# Create superuser
python3 manage.py createsuperuser

# Start development server python3 manage.py runserver

# **Project Structure**

After completing these steps, your project structure will look like:



# Server Management

## Starting the Server

bash

python3 manage.py runserver

# Starting on Different Port

bash

python3 manage.py runserver 8080

# Stopping the Server

Press (Ctrl + C) in the terminal where the server is running.

# Restarting the Server

- 1. Stop with Ctrl + C
- 2. Run (python3 manage.py runserver) again

### **Browser Access Points**

Once your server is running, you can access:

URL	Description
(http://127.0.0.1:8000/)	Main Django welcome page
(http://localhost:8000/)	Alternative main page URL
(http://127.0.0.1:8000/admin/)	Django admin interface
◀	)

## **Important Notes**

- 1. **Keep Terminal Open**: The server runs in your terminal, so keep it open while developing
- 2. Virtual Environment: Always activate your virtual environment before working on the project
- 3. File Changes: Django automatically reloads when you make changes to your code
- 4. **Database**: The SQLite database file (db.sqlite3) is created automatically

# **Next Session Setup**

When you return to work on your project:

1. Navigate to project directory:

bash

cd /path/to/your/todo\_project

2. Activate virtual environment:

bash

source ../denv/bin/activate

3. Start server:

bash

python3 manage.py runserver

4. Open browser to:

http://127.0.0.1:8000/

# **Troubleshooting**

#### **Common Issues**

### Server won't start:

- Check if virtual environment is activated ((denv))
- Ensure you're in the correct directory (where manage.py) is located)
- Try a different port: (python3 manage.py runserver 8080)

### Can't access in browser:

- Verify the server is running (check terminal output)
- Try both (127.0.0.1:8000) and (localhost:8000)
- Check if your firewall is blocking the connection

### Virtual environment issues:

- Make sure you created it: (python3 -m venv denv)
- Activate it properly: (source denv/bin/activate)
- Check for (denv) in your terminal prompt

You now have a complete Django project running locally! �