MySQL Workbench
1. Make model - name new schema
2. Database tab - Synchronize Model

elevated command prompt

General commands:
C:\>cls - clears everything on the screen
C:\>cd\ - returns to root directory (C:)
C:\>cd .. - goes up one directory level
C:\>dir - directory

Check pip installation (should say requirement satisfied)
C:\>python -m pip install --upgrade pip

Check virtualenv installation (should say requirement satisfied)
C:\>pip install virtualenv

Create pip virtual environment (isolate all project dependencies in one, virtual location)
C:\>virtualenv csi3450

Use pip virtual environment
C:\csi3450\Scripts>activate
Now you are in the virtual environment: (csi3450) C:\csi3450\Scripts>
(csi3450) C:\csi3450\dependencies>deactivate (gets you out of the virtual environment)

Install django in virtual environment
(csi3450) C:\csi3450\Scripts>pip install django

Check django installation
(csi3450) C:\csi3450\Scripts>python (open python shell)
>>> import django
>>> django.get_version() (should return something like '3.2')
>>> ^Z (ctrl + z, to exit python shell)

Create django project folder
(csi3450) C:\csi3450\django-admin startproject dependencies ("dependencies" is the project name, I chose)
Project files, and manage.py are here: (csi3450) C:\csi3450\dependencies>

Test server
(csi3450) C:\csi3450\dependencies>python manage.py runserver
ctrl + pause/break button, to stop running server

manage.py
root directory is the one where manage.py is located
python manage.py runserver - starts server
python manage.py makemigrations - sets up/shows new changes to project
python manage.py migrate - commits new changes
python manage.py startapp projectName - creates new DB project
python manage.py inspectdb - converts DB into python
python manage.py inspectdb > projectFolderName\models.py
- pushes python to Visual Studio Code models folder

python manage.py createsuperuser - creates user with admin privileges

Create actual DB project
(csi3450) C:\csi3450\dependencies>python manage.py startapp project ("project" is the name I chose)

Open project in Visual Studio Code
File > Open Folder > C:\csi3450\dependencies

Install MySQL client to connect database to Visual Studio
(csi3450) C:\csi3450\dependencies>pip install mysqlclient

Implement database on MySQL Server - make your project in MySQL Workbench, or wherever, before trying to connect it to Visual Studio, in the next step.

Connect your database to Visual Studio in settings.py file

```
DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.mysql',
        'NAME': 'project', # name of db you are connecting to
        'USER': 'root',
        'PASSWORD': "[redacted]", # your db password
        'HOST': "localhost",
        'PORT': "3306",
        'OPTIONS': {
            'init_command': "SET sql_mode = 'STRICT_TRANS_TABLES'"
        }
    }
}
```

Commit changes to settings.py - save changes in Visual Studio Code, then migrate in command prompt
(csi3450) C:\csi3450\dependencies>python manage.py migrate (to commit changes)
(csi3450) C:\csi3450\dependencies>python manage.py runserver (to make sure everything worked)

Validate that connection to db worked - open another command prompt, and open MySQL shell:
C:\Program Files\MySQL\MySQL Server 8.0\bin>mysql -u root -p
mysql> use project; (name of by database)
mysql> show tables; (show now see tables created by django, in addition to tables I created)

```
+---------------------------+
| Tables_in_project         |
+---------------------------+
| auth_group                |
| auth_group_permissions    |
| auth_permission           |
| auth_user                 |
| auth_user_groups          |
| auth_user_user_permissions|
| django_admin_log          |
| django_content_type       |
| django_migrations         |
| django_session            |
| employee                  |
| jobtype                   |
| paycheck                  |
| timecard                  |
| vacation                  |
+---------------------------+
15 rows in set (0.00 sec)
```

Migrate database tables to server backend
ctrl + pause/break to stop running server
(csi3450) C:\csi3450\dependencies>python manage.py inspectdb (converts SQL to python)
(csi3450) C:\csi3450\dependencies>python manage.py inspectdb > project\models.py
- dumps contents of command into location (now shows up in Visual Studio Code)

Lots of changes and updates from lectures....

Create superuser

```
(csi3450) C:\csi3450\dependencies>python manage.py createsuperuser
Username (leave blank to use 'z220'): admin
Email address: admin@project.com
Password:
Password (again):
Superuser created successfully.
```

To view users in your db project:
mysql> select * from auth_user \G (\G groups the info to make it easier to read)