

## BÀI 1. GIỚI THIỆU VÀ CÀI ĐẶT DJANGO

<https://www.djangoproject.com/>

The screenshot shows the official Django website at <https://www.djangoproject.com/>. At the top, there's a dark green header bar with the Django logo and the tagline "The web framework for perfectionists with deadlines." Below the header, a large green banner features the text "Until June 20, 2022, get PyCharm at 30% off. All money goes to the DSF!" In the center of the page, there's a white text area that says "Django makes it easier to build better web apps more quickly and with less code." Below this text is a green button with the text "Get started with Django".

### Giới thiệu document

<https://docs.djangoproject.com/en/3.0/intro/>

The screenshot shows the Django documentation page for version 3.0 at <https://docs.djangoproject.com/en/3.0/intro/>. A prominent red banner at the top states: "This document is for an insecure version of Django that is no longer supported. Please upgrade to a newer release!" Below the banner, the main content area has a green background and displays the text "Documentation – Until June 20, 2022, get PyCharm at 30% OFF. All money goes to the DSF!". At the bottom of the page is a search bar with the placeholder "Search 3.0 documentation" and a magnifying glass icon.

### Getting started

New to Django? Or to Web development in general? Well, you came to the right place: read this material to quickly get up and running.

- [Django at a glance](#)
- [Quick install guide](#)
- [Writing your first Django app, part 1](#)
- [Writing your first Django app, part 2](#)
- [Writing your first Django app, part 3](#)
- [Writing your first Django app, part 4](#)
- [Writing your first Django app, part 5](#)

### Support Django!

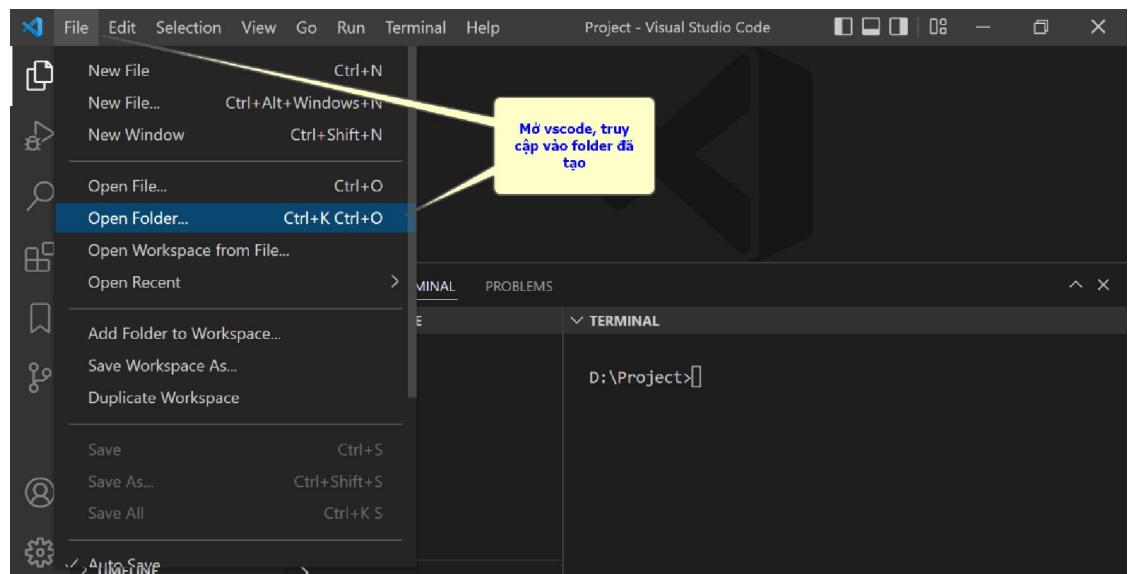
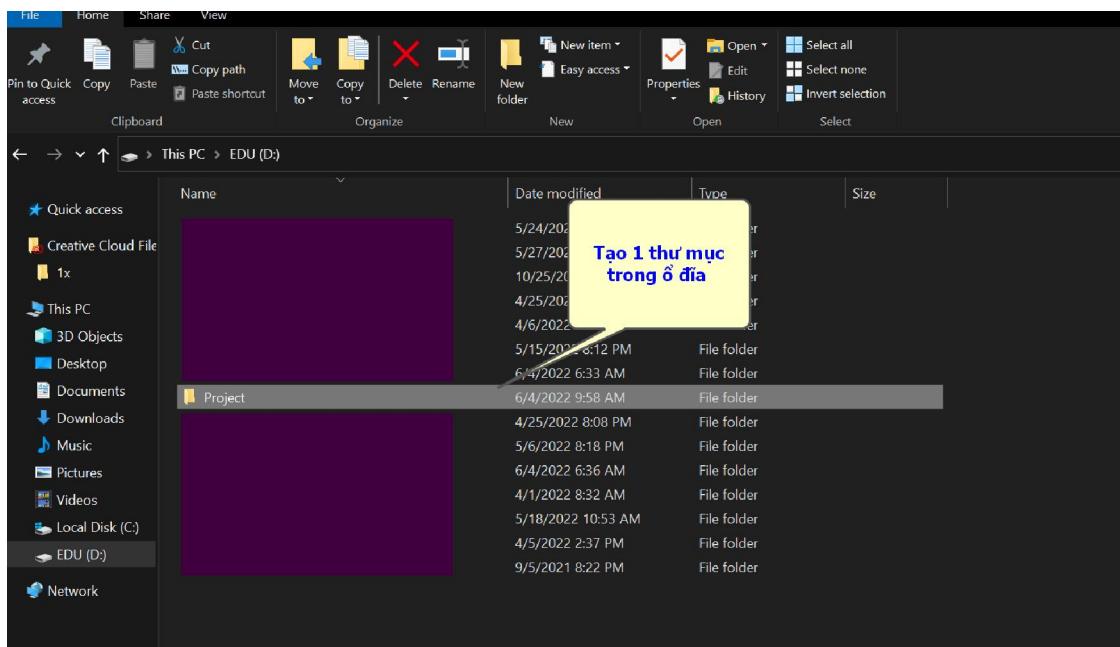


revolut donated to the Django Software Foundation to support Django development. [Donate today!](#)

### Contents

- [Getting started](#)

## 1. Cài đặt Django vào máy



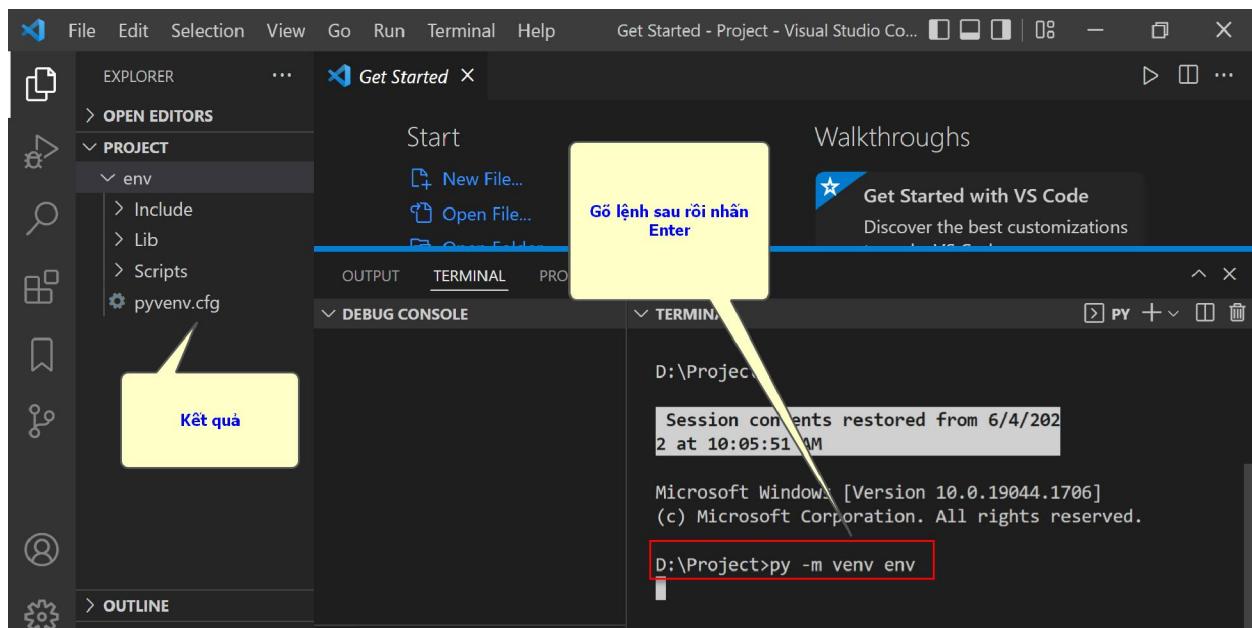
### a. Tạo thư mục ảo

<https://packaging.python.org/en/latest/guides/installing-using-pip-and-virtual-environments/>

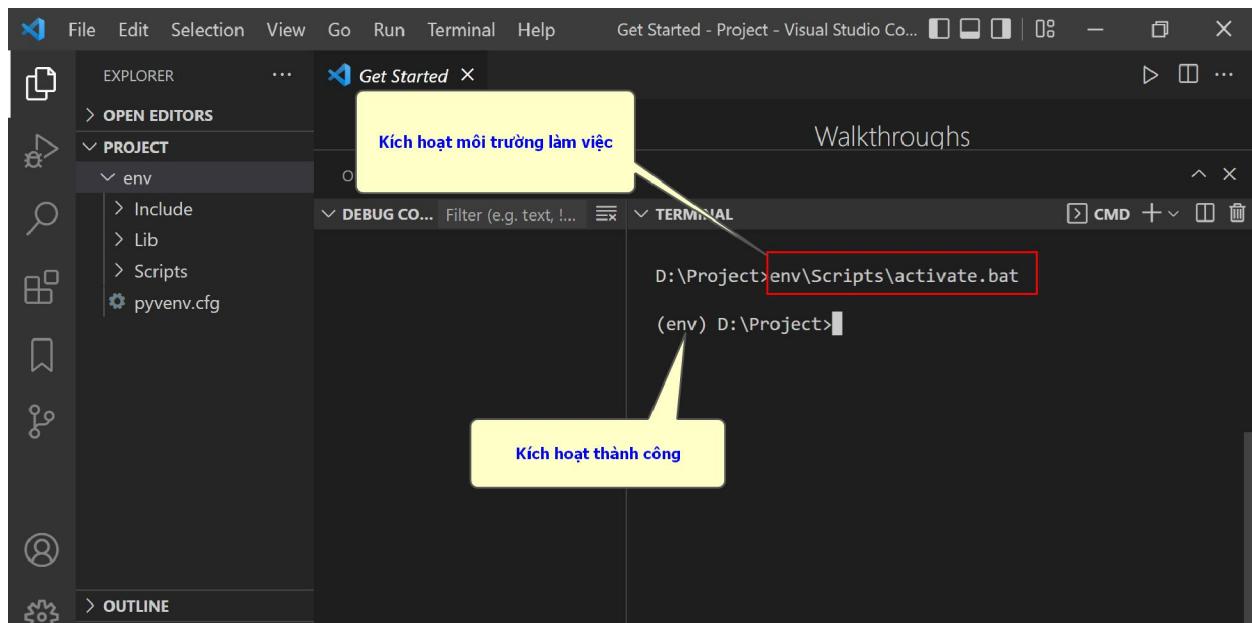
Unix/macOS

Windows

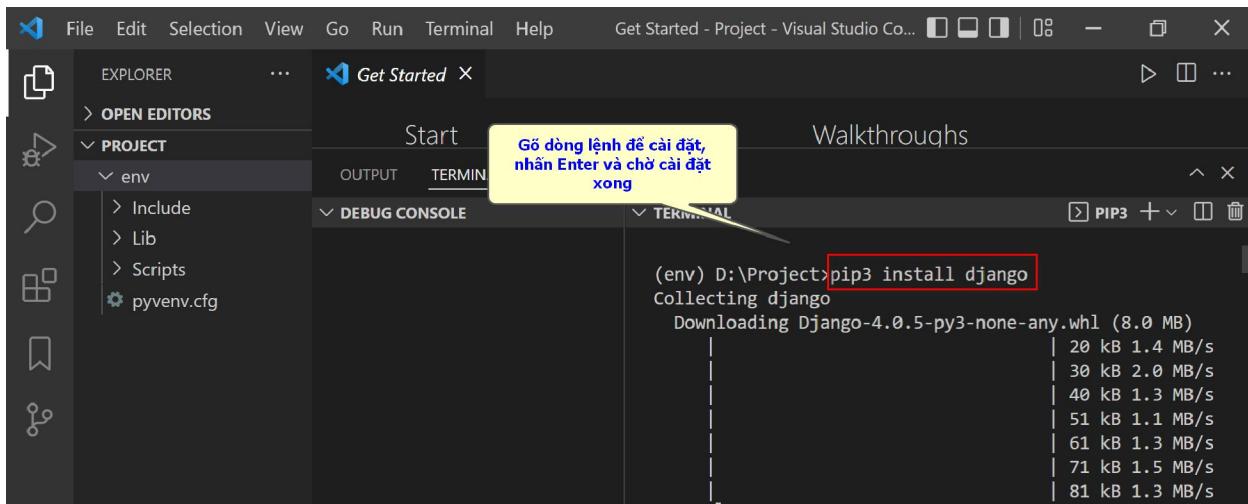
```
py -m venv env
```



### b. Kích hoạt môi trường làm việc ảo

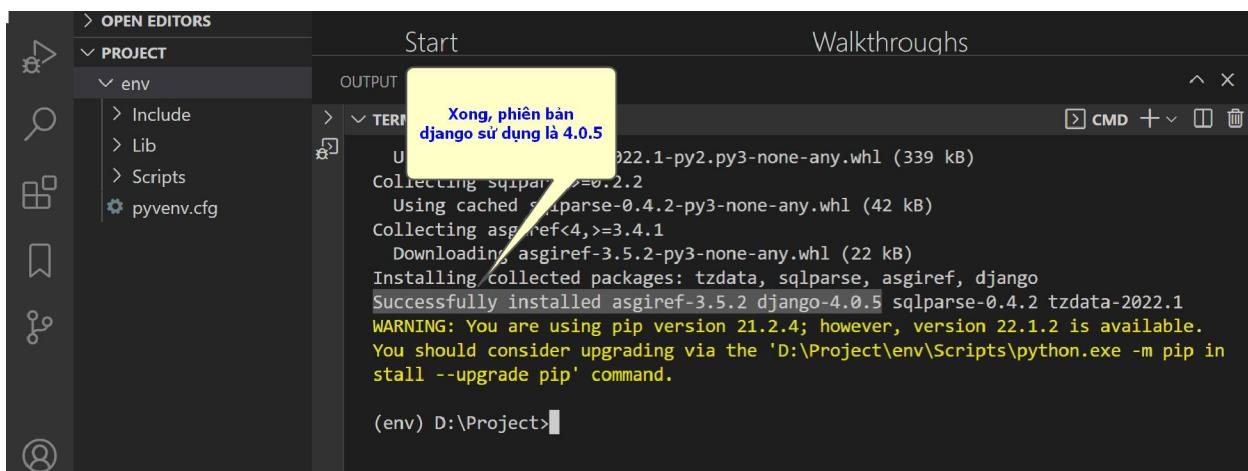


### c. Cài đặt Django vào thư mục ảo



Gõ dòng lệnh để cài đặt, nhấn Enter và chờ cài đặt xong

```
(env) D:\Project>pip3 install django
Collecting django
  Downloading Django-4.0.5-py3-none-any.whl (8.0 MB)
| 20 kB 1.4 MB/s
| 30 kB 2.0 MB/s
| 40 kB 1.3 MB/s
| 51 kB 1.1 MB/s
| 61 kB 1.3 MB/s
| 71 kB 1.5 MB/s
| 81 kB 1.3 MB/s
```



Xong, phiên bản django sử dụng là 4.0.5

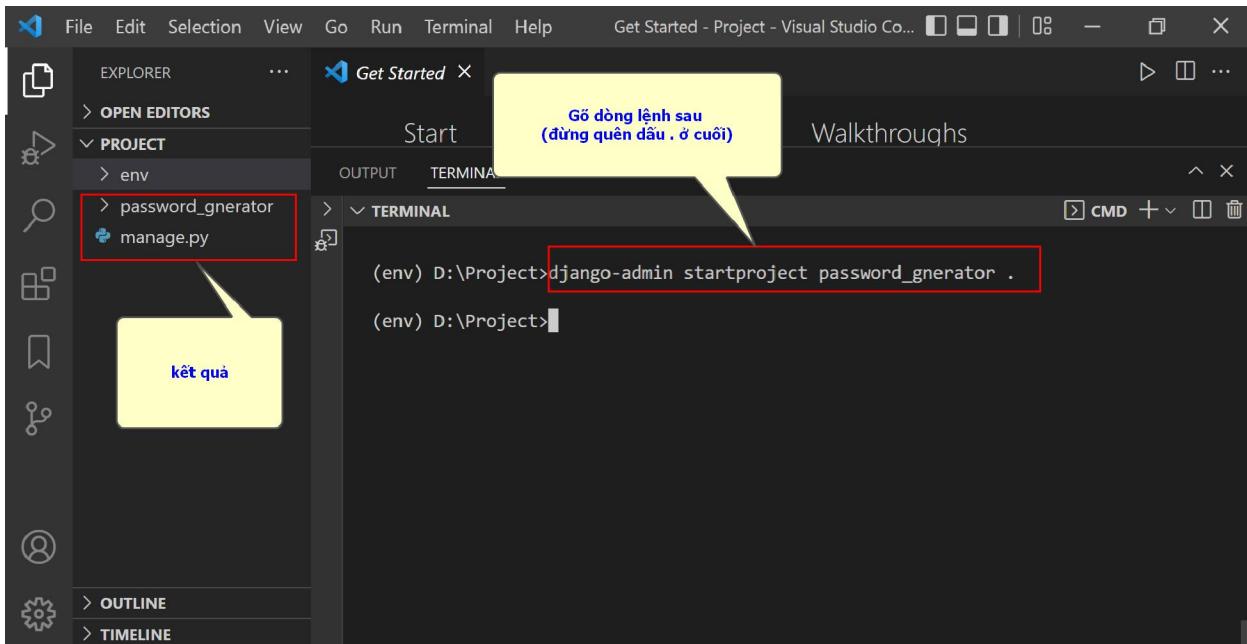
```
U   Downloading sqlparse-0.2.2
Collecting sqlparse >=0.2.2
  Using cached sqlparse-0.4.2-py3-none-any.whl (42 kB)
Collecting asgiref<4,>=3.4.1
  Downloading asgiref-3.5.2-py3-none-any.whl (22 kB)
Installing collected packages: tzdata, sqlparse, asgiref, django
Successfully installed asgiref-3.5.2 django-4.0.5 sqlparse-0.4.2 tzdata-2022.1
WARNING: You are using pip version 21.2.4; however, version 22.1.2 is available.
You should consider upgrading via the 'D:\Project\env\Scripts\python.exe -m pip install --upgrade pip' command.

(env) D:\Project>
```

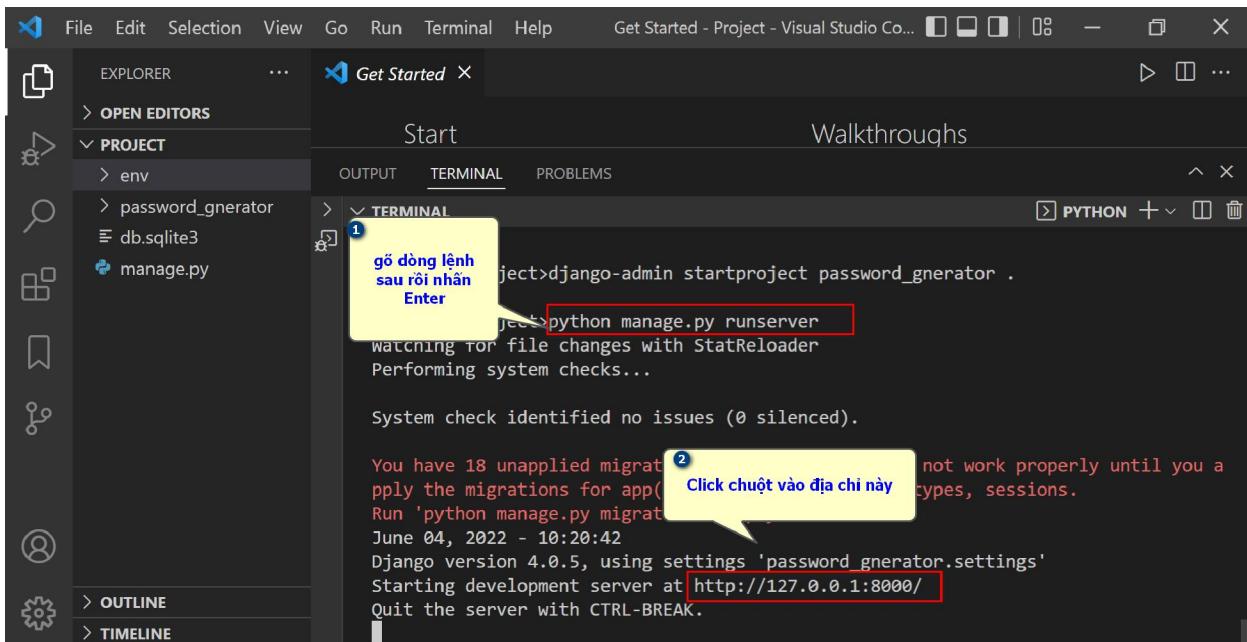
Các lệnh sẽ sử dụng trong khi làm việc vs django

<https://zappycode.com/posts/1/django-cheat-sheet>

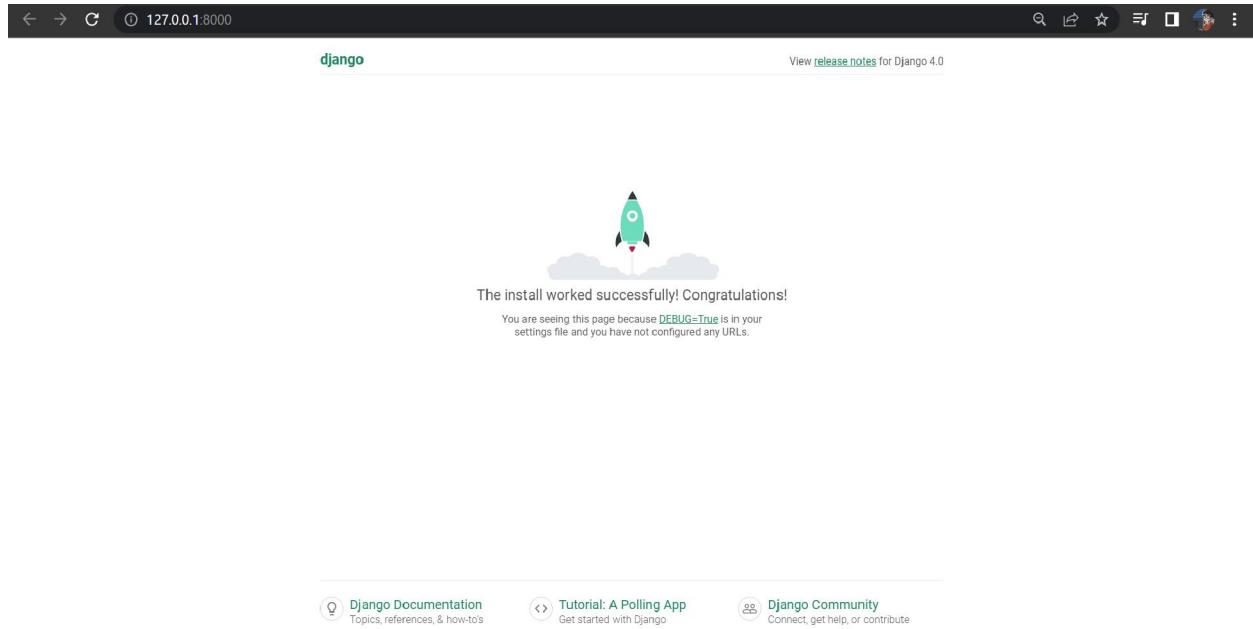
#### d. Tạo ứng dụng trong Django



#### e. Khởi chạy website Django



## Kết quả



# Bài 2. Ứng dụng trong dự án Django

## 1. Cấu trúc dự án

The screenshot shows the Visual Studio Code interface with the Explorer sidebar open. The project structure is as follows:

- > PROJECT
  - > env
  - > password\_generator
    - ① > \_\_pycache\_\_
    - ② \_\_init\_\_.py
    - ③ asgi.py
    - ④ settings.py
    - ⑤ urls.py
    - ⑥ wsgi.py
    - ⑦ db.sqlite3
    - ⑧ manage.py

On the right side of the image, there is a list of 8 numbered points explaining the purpose of each file:

1. Thư mục cache, tự tạo bởi django, giúp chương trình chạy nhanh hơn
2. File để thêm các thuộc tính nâng cao trong Django (thư viện... ) và được load ngay đầu tiên khi dự án django được chạy
3. & 6. Giúp cấu hình thông tin cho dự án khi khởi chạy trên Internet
4. File cấu hình các thông tin quan trọng của một dự án Django. Kết nối database,
5. File cấu hình đường dẫn URL cho các ứng dụng con hoặc trang web con trong dự án Django
7. File lưu trữ cơ sở dữ liệu
8. File cấu hình chạy trang dự án Django, online và offline

## 2. Tạo dự án

### a. Tạo cấu trúc ứng dụng

The screenshot shows the Visual Studio Code interface with the Explorer sidebar open. A new application named "generator" has been created under the "PROJECT" folder. The "generator" folder contains the following files:

- > migrations
- ② \_\_init\_\_.py
- ③ admin.py
- ④ apps.py
- ⑤ models.py
- ⑥ tests.py
- ⑦ views.py

A yellow callout box with the text "Kết quả" points to the "generator" folder in the Explorer. Another yellow callout box with the text "Chạy dòng lệnh sau rồi nhấn Enter" points to the terminal window. The terminal window shows the command:

```
(env) D:\Project>manage.py startapp generator
```

## b. Định nghĩa cấu trúc ứng dụng trong file setting.py

```
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',
    'generator',
]
```

OUTPUT TERMINAL PROBLEMS

(env) D:\Project>manage.py startapp generator

(env) D:\Project>

## c. Định nghĩa url

```
1. Import the include() function: from django.urls import include, path
2. Add a URL to urlpatterns: path('blog/', include('blog.urls'))
```

```
"""
from django.contrib import admin
from django.urls import path
from generator import views

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

#### d. Tạo chức năng hiển thị lên trang html

The screenshot shows the Visual Studio Code interface with the following elements:

- EXPLORER** sidebar: Shows the project structure with files like `env`, `migrations`, `generator` (selected), `_init_.py`, `admin.py`, `apps.py`, `models.py`, `tests.py`, and `views.py`. A callout bubble labeled "Mở file views.py trong app generator" points to the `views.py` file in the sidebar.
- OPEN EDITORS**: Two tabs are open: `urls.py` and `views.py`.
- views.py** content:

```
2 from django.shortcuts import render
3 from django.http import HttpRequest, HttpResponseRedirect
4 # Create your views here.
6 def home(request):
7     return HttpResponseRedirect('Hello Django')
```

A red box highlights the code block starting with `def home(request):`.
- TERMINAL**: Shows the command line output of running the application.

```
(env) D:\Project>manage.py startapp generator
(env) D:\Project>python manage.py runserver
Watching for file changes with StatReloader
Performing system checks...
System check identified no issues (0 silenced).
```

A yellow box highlights the command `python manage.py runserver`, and another callout bubble labeled "Test ứng dụng" points to it.

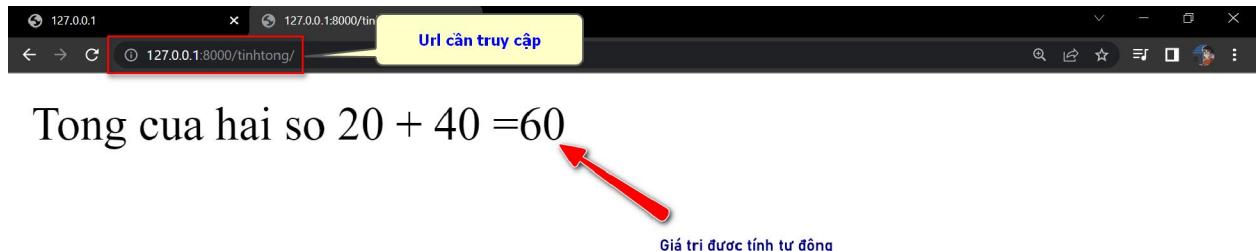
Kết quả đã tạo được ứng dụng Hiển thị nội dung lên trang web



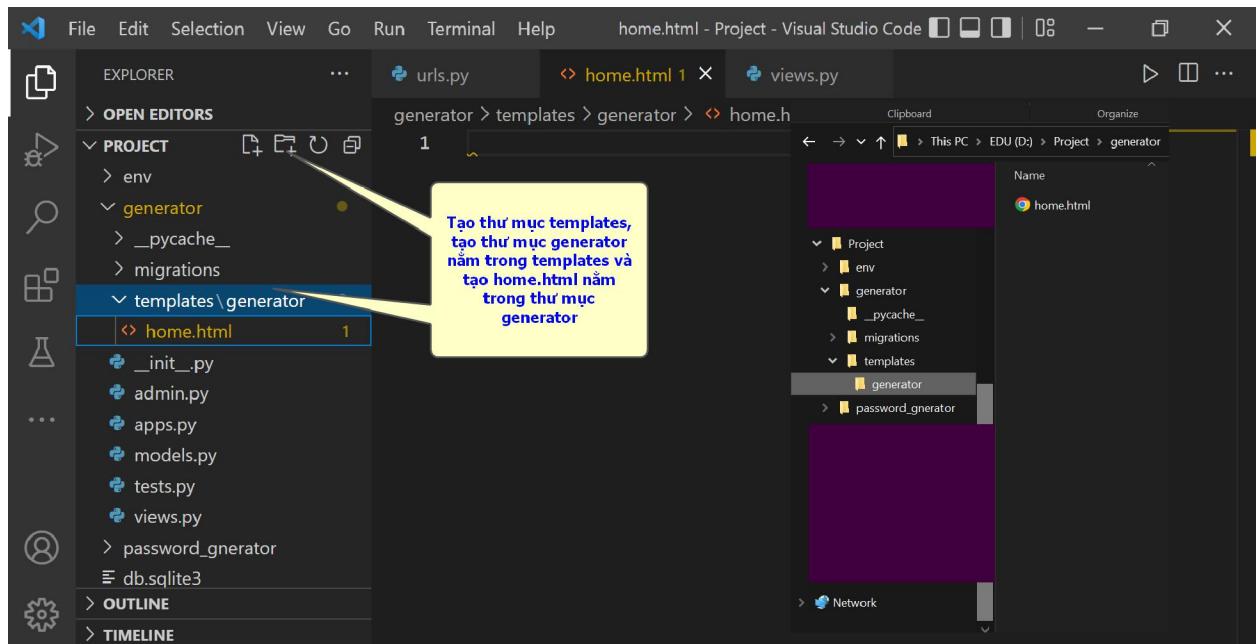
Hello Django

Bài tập:

Hãy tạo đường dẫn Url để khi gõ địa chỉ thì ra kết quả như sau:



### e. Templates



```
generator > templates > generator > home.html > html > head
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="UTF-8">
6      <meta http-equiv="X-UA-Compatible" content="IE=edge">
7      <meta name="viewport" content="width=device-width, initial-
8          <title>Document</title>
9      </head>
10
11 <body>
12     <h1>My home pages</h1>
13 </body>
14
15 </html>
```

Tạo cấu trúc trang html, trong thẻ body có thẻ h1

## Chỉnh lại render url

Chinh sửa lại render

```
def home(request):
    return render(request, 'generator/home.html')
```

Mở file views.py

Test

```
(env) (base) D:\Project: manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

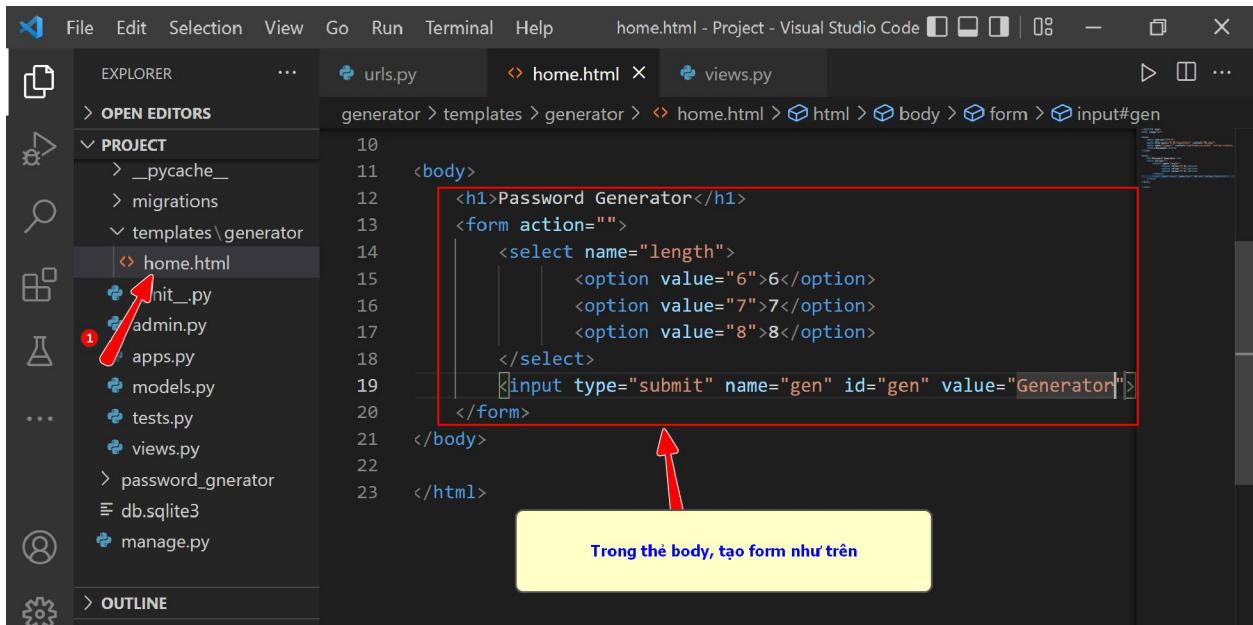
Exception in thread django-main-thread:
Traceback (most recent call last):
  File "C:\Users\admin\AppData\Local\Programs\Python\Python
```

Thành công

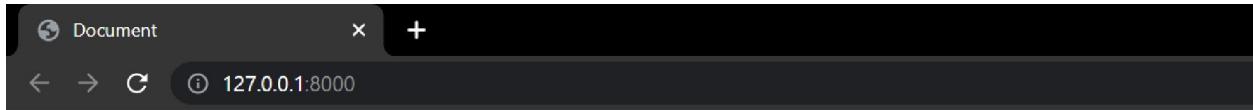


# My home pages

f. Tạo form



Kết quả



# Password Generator

6 ▾ Generator

### g. Tạo trang html mới để hiển thị password sau khi generator

The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar displays a project structure with files like `urls.py`, `home.html`, and `password.html`. The `password.html` file is currently open in the editor. The code for `password.html` is as follows:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <h1>Password</h1>
</body>
</html>
```

A callout bubble with the text "Tạo trang html" (Create HTML page) points to the `password.html` file in the Explorer.

### h. Định nghĩa thêm url

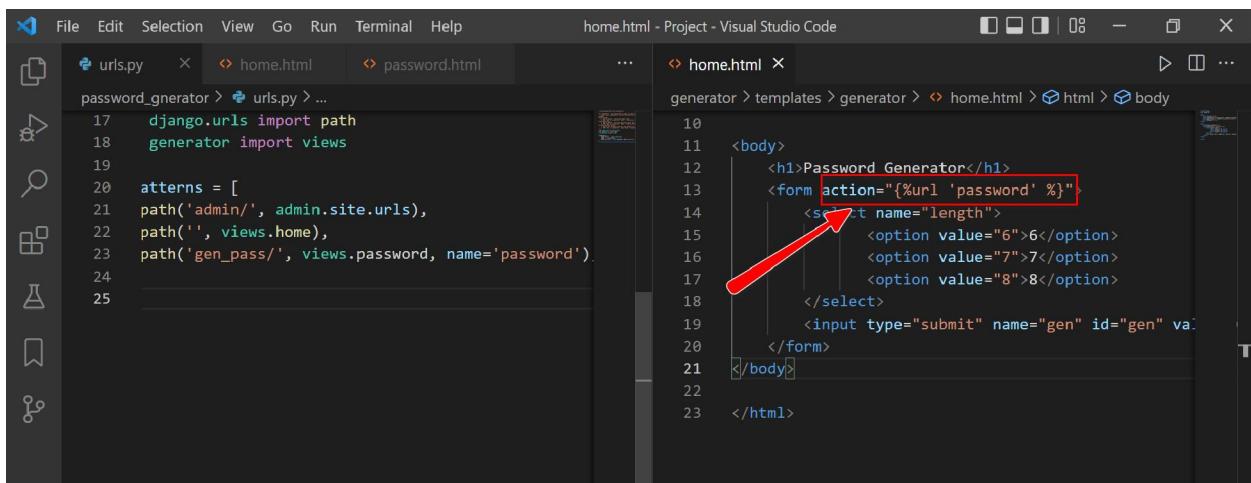
The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar displays a project structure with files like `urls.py`, `wsgi.py`, and `settings.py`. The `urls.py` file is currently open in the editor. The code for `urls.py` is as follows:

```
from django.urls import path
from generator import views

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

A callout bubble with the text "Tạo thêm đường dẫn" (Create additional path) points to the new URL pattern `path('gen_pass/', views.password, name='password'),`. Another callout bubble with the text "Mở urls.py trong thư mục root" (Open urls.py in the root directory) points to the `urls.py` file in the Explorer.

### i. Khai báo action cho form



File Edit Selection View Go Run Terminal Help

home.html - Project - Visual Studio Code

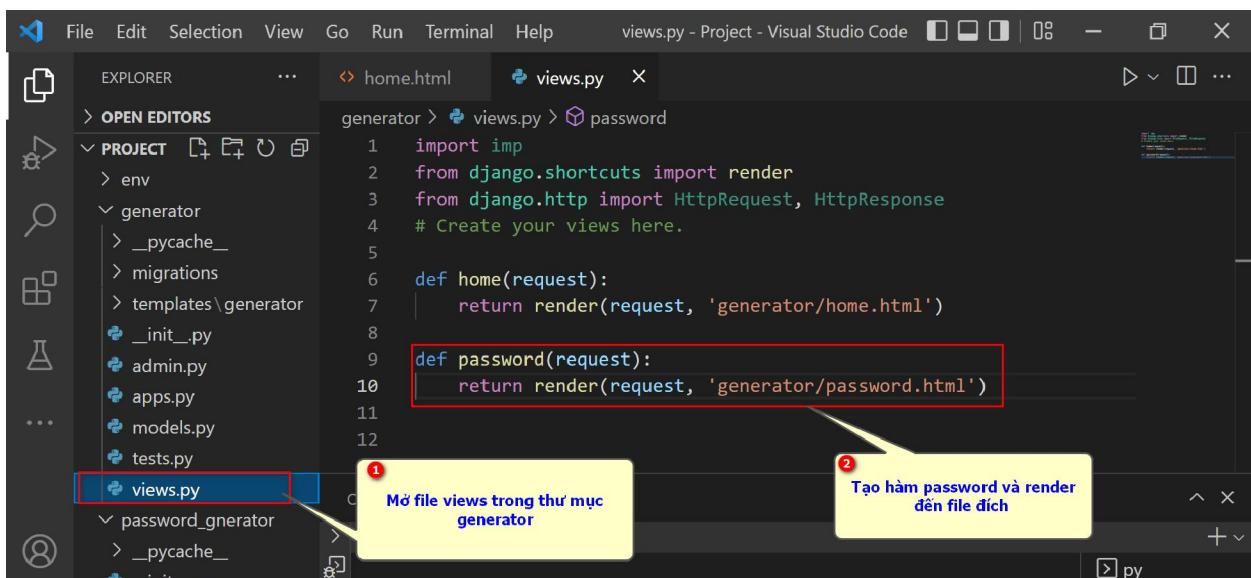
urls.py

```
17 django.urls import path
18 generator import views
19
20 urlpatterns = [
21     path('admin/', admin.site.urls),
22     path('', views.home),
23     path('gen_pass/', views.password, name='password')
24 ]
25
```

home.html

```
10
11 <body>
12     <h1>Password Generator</h1>
13     <form action="{%url 'password'%}">
14         <select name="length">
15             <option value="6">6</option>
16             <option value="7">7</option>
17             <option value="8">8</option>
18         </select>
19         <input type="submit" name="gen" id="gen" value="Generate" />
20     </form>
21 </body>
22
23 </html>
```

### k. Tạo hàm password trong views.py của app generator



File Edit Selection View Go Run Terminal Help

views.py - Project - Visual Studio Code

OPEN EDITORS

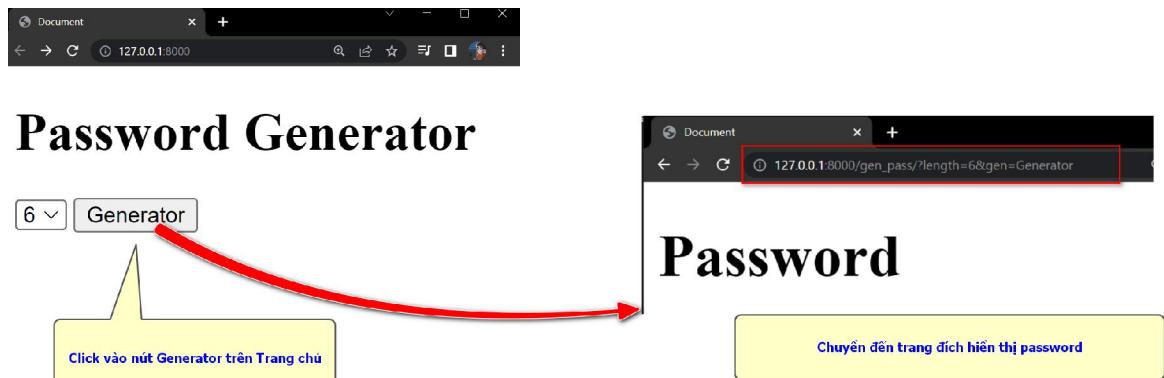
PROJECT

- env
- generator
  - \_pycache\_
  - migrations
  - templates\generator
  - \_\_init\_\_.py
  - admin.py
  - apps.py
  - models.py
  - tests.py
- views.py
- password\_generator
  - \_pycache\_
  - \_\_init\_\_.py

generator > views.py > password

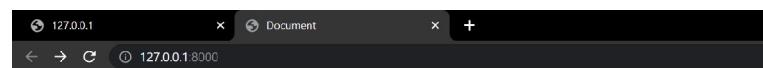
```
1 import imp
2 from django.shortcuts import render
3 from django.http import HttpResponseRedirect
4 # Create your views here.
5
6 def home(request):
7     return render(request, 'generator/home.html')
8
9 def password(request):
10    return render(request, 'generator/password.html')
```

## Chạy Test ứng dụng



### I. Tạo thêm các chức năng cho trang home, bổ sung các input như hình dưới

```
<select name="length">
    <option value="6">6</option>
    <option value="7">7</option>
    <option value="8">8</option>
</select>
<br>
<input type="checkbox" name="uppercase" id="uppercase">Uppercase
<br>
<input type="checkbox" name="number" id="number">Numbers
<br>
<input type="checkbox" name="special" id="special">Special Character
<br>
<input type="submit" name="gen" id="gen" value="Generator">
```



## Password Generator

6  
 Uppercase  
 Numbers  
 Special Character  
**Generator**

### I. Viết chức năng cho trang views.py

File Edit Selection View Go Run Terminal Help

views.py - Project - Visual Studio Code

EXPLORER

> OPEN EDITORS

> PROJECT

> env

> generator

> \_\_pycache\_\_

> migrations

> templates\generator

> home.html

> password.html

generator > views.py > ...

```
5 # Create your views here.  
6  
7 def home(request):  
8     return render(request, 'generator/home.html')  
9  
10 def password(request):  
11     characters = list('abcdefghijklmnopqrstuvwxyz')  
12     length = 10  
13     thepassword = ''  
14     for x in range(length):  
15         thepassword = thepassword + random.choice(characters)  
16     return render(request, 'generator/password.html', { 'password': thepassword })  
17  
18
```

Bổ sung chức năng tạo password  
Lưu ý: Phải import random

Mở file views.py trong app generator

Tham số sẽ được lấy từ phần html

# Test ứng dụng



## Sử dụng bootstrap để làm đẹp trang web

### Bước 1. Truy cập địa chỉ

<https://getbootstrap.com/docs/4.0/getting-started/introduction/>

The screenshot shows the Bootstrap documentation website at https://getbootstrap.com/docs/4.0/getting-started/introduction/. The page features a navigation bar with links to Home, Documentation, Examples, Themes, Expo, and Blog. A search bar is present. On the left, a sidebar lists 'Setting started' with sub-links: Introduction, Download, Contents, Browsers & devices, JavaScript, Theming, Build tools, Webpack, Accessibility, Layout, and Content. The main content area has a heading 'Quick start'. It contains text about using jsDelivr and a template starter page. Below this is a 'CSS' section with instructions to copy the provided stylesheet link into the head of a page. A yellow callout bubble with blue text points to the link: 'Copy đường dẫn này, đặt trong thẻ head của trang password.html'. A red box highlights the copied link: `<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/css/bootstrap.min.css" integrity="...">`. A 'Copy' button is visible to the right of the link.

The screenshot shows a Visual Studio Code interface with a dark theme. The top menu includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar says 'password.html - Project - Visual Studio Code'. The code editor displays the following HTML:

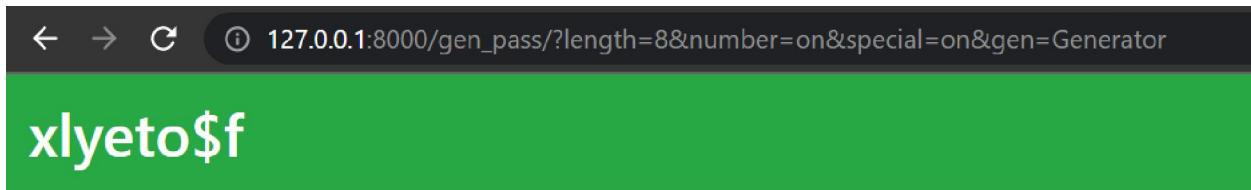
```
generator > templates > generator > password.html > html > body > h1
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="UTF-8">
6      <meta http-equiv="X-UA-Compatible" content="IE=edge">
7      <meta name="viewport" content="width=device-width, initial-scale=1.0">
8      <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/css/bootstrap.min.css" integrity="..."/>
9      <title>Document</title>
10
11 </head>
12
13 <body>
14 |     <h1>{{password}}</h1>
15 </body>
16
17 </html>
```

The line containing the Bootstrap CSS link is highlighted with a red box. The status bar at the bottom shows 'Django version 4.0.5, using settings 'password\_generator.settings''. The terminal pane shows the command: 'Django version 4.0.5, using settings 'password\_generator.settings''. It also shows 'Starting development server at http://127.0.0.1:8000/' and 'Quit the server with CTRL-BREAK.'

Truy cập vào địa chỉ sau để lấy class màu sắc

<https://getbootstrap.com/docs/4.0/utilities/colors/>

kết quả



## Bài tập

Anh/chị hãy sử dụng bootstrap để thay đổi giao diện của trang home như hình dưới đây

Gợi ý:

The image shows two side-by-side screenshots of a 'Password Generator' application at the URL '127.0.0.1:8000'.

**Trước khi sử dụng bootstrap** (Left): The interface is simple and lacks styling. It features a title 'Password Generator', a dropdown menu set to '6', and three checkboxes for 'Uppercase', 'Numbers', and 'Special Character'. A blue-bordered 'Generator' button is at the bottom.

**Sau khi sử dụng bootstrap** (Right): The same application is shown with Bootstrap styling applied. The title 'Password Generator' is centered at the top in a large, bold font. Below it is a 'Select length' dropdown with '6' selected. The checkboxes for 'Uppercase', 'Numbers', and 'Special Character' are now greyed out. The 'Generator' button is blue with white text.