**Project 1: PASSWORD GENERATOR**

**PYTHON CODE:**

from flask import Flask, render\_template, request

import string

import random

app = Flask(\_\_name\_\_)

def generate\_password(length, upper, lower, digits, symbols):

    characters = ''

    if upper:

        characters += string.ascii uppercase

    if lower:

        characters += string.ascii\_lowercase

    if digits:

        characters += string.digits

    if symbols:

        characters += string.punctuation

    if not characters:

        return "Select at least one option."

    return ''.join(random.choice(characters) for \_ in range(length))

@app.route("/", methods=["GET", "POST"])

def index():

    password = ""

    if request.method == "POST":

        length = int(request.form["length"])

        upper = "upper" in request.form

        lower = "lower" in request.form

        digits = "digits" in request.form

        symbols = "symbols" in request.form

        password = generate\_password(length, upper, lower, digits, symbols)

    return render\_template("index.html", password=password)

if \_\_name\_\_ == "\_\_main\_\_":

    app.run(debug=True)

**HTML CODE:**

<!DOCTYPE html>

<html>

<head>

  <title>Password Generator</title>

  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">

</head>

<body class="bg-light">

  <div class="container mt-5">

    <h2 class="text-center mb-4">🔐Password Generator</h2>

    <form method="POST" class="card p-4 shadow">

      <div class="mb-3">

        <label class="form-label">Password Length</label>

        <input type="number" name="length" class="form-control" value="12" min="4" required>

      </div>

      <div class="form-check">

        <input class="form-check-input" type="checkbox" name="upper" checked>

        <label class="form-check-label">Include Uppercase Letters</label>

      </div>

      <div class="form-check">

        <input class="form-check-input" type="checkbox" name="lower" checked>

        <label class="form-check-label">Include Lowercase Letters</label>

      </div>

      <div class="form-check">

        <input class="form-check-input" type="checkbox" name="digits" checked>

        <label class="form-check-label">Include Numbers</label>

      </div>

      <div class="form-check mb-3">

        <input class="form-check-input" type="checkbox" name="symbols" checked>

        <label class="form-check-label">Include Symbols</label>

      </div>

      <button type="submit" class="btn btn-primary w-100">Generate</button>

    </form>

    {% if password %}

    <div class="alert alert-success mt-4 text-center">

      <strong>Your Password:</strong> {{ password }}

    </div>

    {% endif %}

  </div>

</body>

</html>

**OUTPUT SCREENS:**

