

WP LAB 5 – Developing Web Application using Django - Part I

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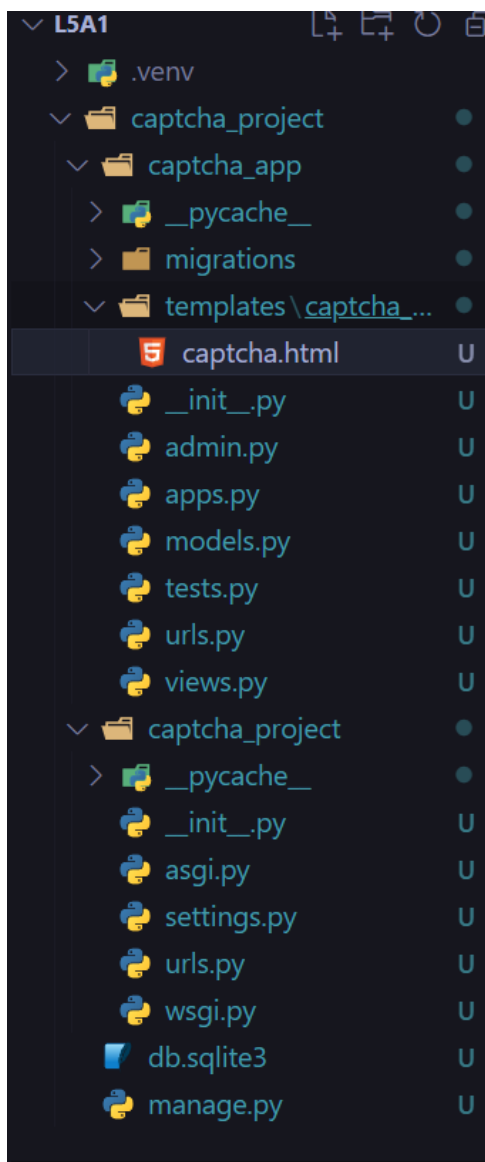
Class: CSE A

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Q1) Develop a simple web page to reproduce the given Captcha. Upon match, suitable message has to be displayed. If there is a mismatch for more than 3 times, TextBox has to be disabled.

i)Directory structure



ii)captcha_project/captcha_project/urls.py

```
from django.contrib import admin
from django.urls import path, include
urlpatterns = [
    path('admin/', admin.site.urls),
```

```
    path("", include('captcha_app.urls')),
]
```

iii) captcha_project/ captcha_app/urls.py

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

urlpatterns = [
    path("", captcha_view, name='captcha_page'),
]
```

iv) captcha_project/ captcha_app/views.py

```
from django.shortcuts import render
from django.http import JsonResponse
import random
import string
from io import BytesIO
from PIL import Image, ImageDraw, ImageFont
import base64

# Store the failed attempts count
attempts = 0

# Generate a random CAPTCHA text
def generate_captcha_text(length=5):
    return ''.join(random.choices(string.ascii_uppercase + string.digits, k=length))

# Create CAPTCHA image
def generate_captcha():
    captcha_text = generate_captcha_text()
    image = Image.new('RGB', (150, 60), color=(255, 255, 255))
    draw = ImageDraw.Draw(image)

    # Load a default font (adjust path if necessary)
    try:
        font = ImageFont.truetype("arial.ttf", 40) # Change this if you have a custom font
    except IOError:
        font = ImageFont.load_default()

    draw.text((20, 10), captcha_text, font=font, fill=(0, 0, 0))

    # Save image to a bytes buffer
    buffer = BytesIO()
    image.save(buffer, format="PNG")
    image_base64 = base64.b64encode(buffer.getvalue()).decode()

    return captcha_text, f"data:image/png;base64,{image_base64}"

# View to render the form
def captcha_view(request):
    global attempts
    if request.method == "POST":
        user_input = request.POST.get("captcha_input")
```

```

correct_captcha = request.session.get("captcha_text", "")

if user_input == correct_captcha:
    message = "✅ Correct CAPTCHA! Access Granted."
    attempts = 0 # Reset attempts
else:
    attempts += 1
    message = f"❌ Incorrect CAPTCHA! Attempt {attempts}/3"

if attempts >= 3:
    message = "🚫 Too many failed attempts. Try again later."

# Generate a new CAPTCHA for the next attempt
new_captcha_text, new_captcha_image = generate_captcha()
request.session["captcha_text"] = new_captcha_text

return JsonResponse({
    "message": message,
    "captcha_image": new_captcha_image,
    "disable_input": attempts >= 3
})

# Initial CAPTCHA generation
captcha_text, captcha_image = generate_captcha()
request.session["captcha_text"] = captcha_text
attempts = 0 # Reset attempts on refresh
return render(request, "captcha_app/captcha.html", {"captcha_image": captcha_image})

```

v) captcha_project/ captcha_app/ templates/captcha_app/captcha.html

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Simple CAPTCHA</title>
    <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
    <style>
        body {
            background-color: #f8f9fa;
            padding: 20px;
        }
        .container {
            max-width: 400px;
            background: white;
            padding: 20px;
            border-radius: 10px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
            text-align: center;
        }
    </style>

```

```

    img {
        margin-bottom: 10px;
    }
    .message {
        margin-top: 10px;
        font-weight: bold;
    }
</style>
</head>
<body>
    <div class="container">
        <h2>Verify CAPTCHA</h2>
        
        <input type="text" id="captcha_input" class="form-control mt-2" placeholder="Enter
CAPTCHA">
        <button id="verify_btn" class="btn btn-primary mt-2 w-100">Verify</button>
        <p id="message" class="message"></p>
    </div>
    <script>
        $(document).ready(function() {
            $("#verify_btn").click(function() {
                var captchaInput = $("#captcha_input").val();

                $.ajax({
                    url: "",
                    type: "POST",
                    data: {
                        csrfmiddlewaretoken: "{{ csrf_token }}",
                        captcha_input: captchaInput
                    },
                    success: function(response) {
                        $("#message").text(response.message);
                        $("#captcha_image").attr("src", response.captcha_image);

                        if (response.disable_input) {
                            $("#captcha_input").prop("disabled", true);
                            $("#verify_btn").prop("disabled", true);
                        } else {
                            $("#captcha_input").val(""); // Clear input field
                        }
                    }
                });
            });
        });
    </script>
</body>
</html>

```

vii) Screenshots

Verify CAPTCHA

UQYZE

Enter CAPTCHA

Verify

✔ Correct CAPTCHA! Access Granted.

Verify CAPTCHA

UIE7Q

Enter CAPTCHA

Verify

✘ Incorrect CAPTCHA! Attempt 1/3

Verify CAPTCHA

NBE63

qefwf

Verify

⊘ Too many failed attempts. Try again later.