



**INSTITUTE OF SCIENCE &  
TECHNOLOGY FOR  
ADVANCED STUDIES & RESEARCH**  
**THE CHARUTAR VIDYA MANDAL (CVM) UNIVERSITY**



Sardar Patel Centre for Science & Technology, P.O. Box No. 13, Near Post Office, Mota Bazar,  
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**A.Y. 2025-2026**  
**MASTER OF SCIENCE IN (INFORMATION TECHNOLOGY)**  
**SEMESTER - II**  
**101410237 – PRACTICAL BASED ON PYTHON FRAMEWORK**

**Remarks:**

- You might want to create a new folder with your **EnrollmentNo.** for each exercises to keep them organized.

**Mini Blog Web Application using Django Framework**

<b>1.</b>	<b>Develop a DJANGO Web Application Based on the Following Instructions:</b>  <b>A. Project Setup</b> <ul style="list-style-type: none"><li>➢ Install <b>Python</b> and verify installation using the command.</li><li>➢ Install <b>Django Framework</b> using pip command.</li><li>➢ Create a <b>virtual environment</b> using command prompt.</li></ul> <b>B. Create Django Project and App</b> <ul style="list-style-type: none"><li>➢ Create a <b>Django project</b> using terminal/CMD project named '<b>myblogproject</b>'.</li><li>➢ Create a <b>Django app</b> using terminal /CMD named '<b>blog</b>'.</li><li>➢ Add '<b>blog</b>' in the <b>INSTALLED_APPS</b> section of settings.py.</li><li>➢ Run the server and verify setup:</li></ul>
<b>2.</b>	<b>Develop a Django App to Display a Welcome Message</b>  <b>A.</b> Define a view in views.py that returns "Welcome to Django Framework". <ul style="list-style-type: none"><li>➢ Using function based view.</li><li>➢ For message rendering <b>import HttpResponse</b></li></ul> <b>B.</b> Create a URL route in urls.py to map the view. <b>C.</b> Test the output in a browser using <a href="http://127.0.0.1:8000/">http://127.0.0.1:8000/</a> .
<b>3.</b>	<b>Develop a Django app that displays current date and time in server</b>  <b>A.</b> Modify views.py Import the <b>datetime</b> module. <b>B.</b> Write a <b>function-based view</b> that returns current date and time using <b>HttpResponse</b> . <b>C.</b> Map the view to a URL pattern /time/. <b>D.</b> Verify that the current server time displays in the browser footer for all pages.
<b>4.</b>	<b>Develop Dynamic URL Routing Using Path Converters</b>  <b>A. Modify Views.py</b> <ul style="list-style-type: none"><li>➢ Create a custom function with argument for three deferent url type(<b>slug,string,integer</b>).</li><li>➢ Display a personalized message using <b>HttpResponse</b>.</li></ul>



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	<p><b>B. ModifyUrls.py</b></p> <ul style="list-style-type: none"><li>➤ Implement three deferent url path.</li></ul> <p><b>C. Test the route for multiple inputs</b></p> <ul style="list-style-type: none"><li>➤ For int http://127.0.0.1:8000/blog/1</li><li>➤ For int http://127.0.0.1:8000/blog/slug:django project</li><li>➤ For int http://127.0.0.1:8000/blog/this my first django project</li></ul>
<b>5.</b>	<b>Implement Template Rendering</b> <p><b>A. Create a templates folder inside your project.</b></p> <ul style="list-style-type: none"><li>➤ Template folder as equal to your sub project and app directory</li><li>➤ Create an HTML file named <b>index.html</b> with a <b>welcome message</b>.</li><li>➤ Configure the <b>TEMPLATES</b> directory in <b>settings.py</b>.</li><li>➤ Add template in <b>TEMPLATES=[{'DIR':['templates']}</b>]</li></ul> <p><b>B. In the Views.py</b></p> <ul style="list-style-type: none"><li>➤ Create custom function name is <b>DEMO</b></li><li>➤ Render HTML output using the <b>render()</b> function.</li></ul> <p><b>C. In Urls.py</b></p> <ul style="list-style-type: none"><li>➤ Add that views function path using Path function. (<b>path('index' , views.demo)</b>)</li></ul> <p><b>D. Run the project</b></p> <ul style="list-style-type: none"><li>➤ After click the link select <b>index</b>.</li></ul>
<b>6.</b>	<b>Use Django Template Language (DTL) for Blog Content</b> <p><b>A. Create about.html pages under templates</b></p> <ul style="list-style-type: none"><li>➤ Pass variables (<b>e.g., Blog_author, post_title, date</b>) from views to templates.</li><li>➤ Display values using <b>{{ variable }}</b> syntax.</li><li>➤ Apply DTL filters like <b>{{ post_title upper }}</b> or <b>{{ date date:"D, d M Y" }}</b>.</li></ul>
<b>7.</b>	<b>Implement Template Tags and Loops</b> <ul style="list-style-type: none"><li>➤ Create a list of blog post titles in a view.</li><li>➤ Use <b>{% for %}</b> tag to display all post titles in the template (<b>post_detail.html</b>).</li><li>➤ Highlight recent posts using <b>{% if %}</b> condition.</li></ul>
<b>8.</b>	<b>Demonstrate Template Inheritance</b> <ul style="list-style-type: none"><li>➤ Create <b>base.html</b> with blog header, navigation menu, and footer.</li><li>➤ Extend <b>base.html</b> into <b>home.html, about.html, and post_detail.html</b>.</li><li>➤ Use <b>{% block content %}</b> for dynamic sections.</li><li>➤ Verify consistent layout across all pages.</li></ul>
<b>9.</b>	<b>Set Up and Access Django Admin Interface</b> <p><b>A. Perform database migrations:</b></p> <p><b>B. Create a superuser:</b></p> <p><b>C. Access admin site at <a href="http://127.0.0.1:8000/admin/">http://127.0.0.1:8000/admin/</a>.</b></p>



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	D. Verify admin dashboard login.
10.	<b>Implement Custom Middleware for Request Logging</b> A. Create <b>middleware.py</b> inside the <b>blog</b> . B. Write middleware that prints or logs each blog page request timestamp. C. Register it in <b>MIDDLEWARE</b> list inside <b>settings.py</b> . D. Verify log output in terminal.
11.	<b>Demonstrate Context Processor for Blog Title</b> A. Create a custom context processor that returns the <b>blog's title</b> and tagline. B. Add it to <b>TEMPLATES['OPTIONS']['context_processors']</b> in <b>settings.py</b> . C. Display the title dynamically on all pages.
12.	<b>Study and Configuration of Django settings.py</b> A. Change the all configuration for production environment B. Explore DATABASES settings (SQLite default) C. Successfully run the project after modifying settings.
13.	<b>Email Service Configuration in Django</b> A. Configure email settings in <b>settings.py</b> B. Use Gmail <b>SMTP</b> with App Password C. Send test email from view using gmail D. Email successfully sent to receiver address.
14.	<b>Email services in developing environment.</b> A. Configure email settings in <b>settings.py</b> B. Use view for sending email <b>send_mail()</b> C. Show the output in the console
15.	<b>Creating a Simple Django Form</b> A. Create a <b>contact_us</b> form using <b>model.py</b> ➤ Filed for contact_us:- ✓ Name-required-false ✓ Email-label ✓ Comment-Text area B. Create a <b>Registration</b> form using <b>form.py</b> ➤ Filed for Registration:- ✓ Name ✓ User_name- required-True ✓ Mobile_no ✓ Password ✓ Re_password



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	<p>C. Create a <b>Login</b> form using <b>view.py</b></p> <ul style="list-style-type: none"><li>➤ Filed for Login:-<ul style="list-style-type: none"><li>✓ User_name</li><li>✓ Password</li></ul></li></ul> <p>D. Create a <b>post</b> form using <b>form.py</b></p> <ul style="list-style-type: none"><li>➤ Id</li><li>➤ Title</li><li>➤ Slug</li><li>➤ Content</li><li>➤ Author</li><li>➤ Created_at</li><li>➤ Updated_at</li><li>➤ Is_published (yes or no radio button)</li></ul> <p>E. Create a <b>Category</b> form Using <b>form.py</b></p> <ul style="list-style-type: none"><li>➤ Id</li><li>➤ Name</li><li>➤ description</li></ul>												
<b>16.</b>	<b>Display Form Validation and Error Handling</b> <p>A. Use <code>is_valid()</code> method</p> <p>B. Display field and non-field errors</p> <p>C. Apply custom CSS for errors</p>												
<b>17.</b>	<b>Static Files Management</b> <p>A. Create static/ directory</p> <ul style="list-style-type: none"><li>➤ Add CSS file (<code>style.css</code>)</li><li>➤ Configure <code>STATIC_URL</code> and <code>STATIC_ROOT</code></li><li>➤ Load static files in templates using <code>{% load static %}</code></li><li>➤ Styled HTML page using external CSS.</li></ul>												
<b>18.</b>	<b>Create a model using <code>model.py</code></b> <p>A. <b>Contact_us</b> model</p> <table border="1"><thead><tr><th>Field Name</th><th>Field Type</th><th>Rules</th></tr></thead><tbody><tr><td>name</td><td><code>CharField(max_length=100, blank=True)</code></td><td>Required = False</td></tr><tr><td>email</td><td><code>EmailField()</code></td><td>Label applied</td></tr><tr><td>comment</td><td><code>TextField()</code></td><td><code>TextArea</code></td></tr></tbody></table> <p>B. <b>Registration</b> model</p>	Field Name	Field Type	Rules	name	<code>CharField(max_length=100, blank=True)</code>	Required = False	email	<code>EmailField()</code>	Label applied	comment	<code>TextField()</code>	<code>TextArea</code>
Field Name	Field Type	Rules											
name	<code>CharField(max_length=100, blank=True)</code>	Required = False											
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Field Name	Field Type	Rules
Name	CharField(max_length=100, blank=True)	Required = True
User_name1	CharField(max_length=10)	Required = True
MobileNo.	IntegerField(max_length=10)	Required = True
Password	CharField(min_length=8)	Required = True
Re_Password	CharField(min_length=8)	Required = True

#### C. Post model

Field Name	Field Type	Purpose
id	AutoField (default)	Primary Key
title	CharField(max_length=200)	Blog post title
slug	SlugField(unique=True)	SEO-friendly URL
content	TextField	Blog description/content
author	CharField(max_length=100)	Author name
created_at	DateTimeField(auto_now_add=True)	Post creation date
updated_at	DateTimeField(auto_now=True)	Last update
is_published	BooleanField(default=True)	Publish control

#### D. Category model

Field Name	Field Type	Purpose
id	AutoField	Primary Key
name	CharField(max_length=100)	Category name
description	TextField	Category details

- Used for Foreign Key or manytomany relationship



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<b>19.</b>	<b>Model Migrations</b> <ul style="list-style-type: none"><li>➤ Run python manage.py makemigrations.</li><li>➤ Verify migration file inside migrations folder.</li><li>➤ Apply migration using python manage.py migrate</li></ul>
<b>20.</b>	<b>CRUD Operations using Django ORM (Insert,Read,update,delete)</b> <b>A.</b> Accessing the Django ORM via Django Shell From <appname>.model import <model_name>  <b>B.</b> Creating and Saving Object: ➤ Minimum 5 recode insert each model  <b>C.</b> Retrieving Records ➤ Retrieve all records from <b>post</b> model.(use the <b>all()</b> method) ➤ filter records based on specific conditions from <b>registration</b> model.(using the <b>filter()</b> method) ➤ Retrieve all records except those that match a condition from <b>contact_us</b> model.(use <b>exclude()</b> method) ➤ Retrieve a single object from <b>category</b> model(use <b>get()</b> method)  <b>D.</b> Modifying Object ➤ Modifying an Existing Object ➤ Bulk Update  <b>E.</b> Deleting Record ➤ delete a specific record ➤ delete multiple records at once(use <b>filter()</b> or <b>exclude()</b> with <b>Delete()</b> )
<b>21.</b>	<b>Perform a CRUD operation using View.py</b>  <b>Add the link of GitHub</b>