



**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,  
Vallabh Vidyanagar-388120, Dist. Anand (Gujarat) INDIA  
Ph: 02692-234955; Email: principal.istar@cvmu.edu.in , office.istar@cvmu.edu.in, Web: www.istar.edu.in

**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**

1.	<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>
2.	<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 <code>http://127.0.0.1:8000/</code> .
3.	<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 <code>/time/</code> . <b>D.</b> Verify that the current server time displays in the browser footer for all pages.
4.	<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>



**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,  
Vallabh Vidyanagar-388120, Dist. Anand (Gujarat) INDIA

Ph: 02692-234955; Email: principal.istar@cvmu.edu.in , office.istar@cvmu.edu.in, Web: www.istar.edu.in

	<p><b>B. Modify Urls.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 TEMPLATES=[{'DIR':['<b>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 render() 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 <b>header, navigation menu, and footer</b>.</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.</b> Perform database migrations:</p> <p><b>B.</b> Create a superuser:</p> <p><b>C.</b> Access admin site at <b>http://127.0.0.1:8000/admin/</b>.</p>



**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,  
Vallabh Vidyanagar-388120, Dist. Anand (Gujarat) INDIA

Ph: 02692-234955; Email: principal.istar@cvmu.edu.in , office.istar@cvmu.edu.in, Web: www.istar.edu.in

	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 settings.py. 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 settings.py 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 settings.py B. Use view for sending email send_mail() 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



**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,  
Vallabh Vidyanagar-388120, Dist. Anand (Gujarat) INDIA

Ph: 02692-234955; Email: principal.istar@cvmu.edu.in , office.istar@cvmu.edu.in, Web: www.istar.edu.in

	<div>C. Create a <b>Login</b> form using <b>view.py</b><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></div> <div>D. Create a <b>post</b> form using <b>form.py</b><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></div> <div>E. Create a <b>Category</b> form Using <b>form.py</b><ul style="list-style-type: none"><li>➤ Id</li><li>➤ Name</li><li>➤ description</li></ul></div>												
16.	Display Form Validation and Error Handling												
	<div>A. Use is_valid() method</div> <div>B. Display field and non-field errors</div> <div>C. Apply custom CSS for errors</div>												
17.	Static Files Management												
	<div>A. Create static/ directory<ul style="list-style-type: none"><li>➤ Add CSS file (style.css)</li><li>➤ Configure STATIC_URL and STATIC_ROOT</li><li>➤ Load static files in templates using {% load static %}</li><li>➤ Styled HTML page using external CSS.</li></ul></div>												
18.	Create a model using model.py												
	<div>A. Contact_us model</div> <table><tr><th>Field Name</th><th>Field Type</th><th>Rules</th></tr><tr><td>name</td><td>CharField(max_length=100, blank=True)</td><td>Required = False</td></tr><tr><td>email</td><td>EmailField()</td><td>Label applied</td></tr><tr><td>comment</td><td>TextField()</td><td>TextArea</td></tr></table> <div>B. Registration model</div>	Field Name	Field Type	Rules	name	CharField(max_length=100, blank=True)	Required = False	email	EmailField()	Label applied	comment	TextField()	TextArea
Field Name	Field Type	Rules											
name	CharField(max_length=100, blank=True)	Required = False											
email	EmailField()	Label applied											
comment	TextField()	TextArea											

Field Name	Field Type	Rules
Name	CharField(max_length=100, blank=True)	Required = True
User_name	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



**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,  
Vallabh Vidyanagar-388120, Dist. Anand (Gujarat) INDIA

Ph: 02692-234955; Email: principal.istar@cvmu.edu.in , office.istar@cvmu.edu.in, Web: www.istar.edu.in

19.	<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>
20.	<b>CRUD Operations using Django ORM (Insert,Read,update,delete)</b>
	<p><b>A.</b> Accessing the Django ORM via Django Shell From &lt;appname&gt;.model import &lt;mode_name&gt;</p> <p><b>B.</b> Creating and Saving Object: ➤ Minimum 5 recode insert each model</p> <p><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)</p> <p><b>D.</b> Modifying Object ➤ Modifying an Existing Object ➤ Bulk Update</p> <p><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>)</p>
21.	<b>Perform a CRUD operation using <i>Veiw.py</i></b>
	<b>Add the link of GitHub</b>