

Lab 5 — Developing Web Application using Django-Part II

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Q1 — Basic Arithmetic Page

Description: Take two integers, choose an operation (add, subtract, multiply, divide), and display the result on the same page. Input validation prevents non-integers; division by zero is handled.

Code (View):

```
from django.shortcuts import render

def index(request):
    result = None
    error = None
    a = ""
    b = ""
    op = "add"

    if request.method == "POST":
        a = request.POST.get("a", "").strip()
        b = request.POST.get("b", "").strip()
        op = request.POST.get("operation", "add")
        try:
            a_val = int(a)
            b_val = int(b)
            if op == "add":
                result = a_val + b_val
            elif op == "sub":
                result = a_val - b_val
            elif op == "mul":
                result = a_val * b_val
            elif op == "div":
                if b_val == 0:
                    error = "Cannot divide by zero."
                else:
                    result = a_val / b_val
        except ValueError:
            error = "Please enter valid integers."

    return render(
        request,
```

```
    "q1_index.html",
    {"result": result, "error": error, "a": a, "b": b, "op": op},
)
```

Code (URL config):

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

urlpatterns = [
    path("", views.index, name="index"),
]
```

Code (Template):

```
<form method="post">
    {% csrf_token %}
    <label>First Integer</label>
    <input type="text" name="a" value="{{ a }}" />

    <label>Second Integer</label>
    <input type="text" name="b" value="{{ b }}" />

    <label>Operation</label>
    <select name="operation">
        <option value="add" {% if op == "add" %}selected{% endif %}>Add</option>
        <option value="sub" {% if op == "sub" %}selected{% endif %}>Subtract</option>
        <option value="mul" {% if op == "mul" %}selected{% endif %}>Multiply</option>
        <option value="div" {% if op == "div" %}selected{% endif %}>Divide</option>
    </select>

    <button type="submit">Calculate</button>
</form>
<div class="output">
    {% if error %}<div class="error">{{ error }}</div>{% elif result is not None %}<div class="result">Result: {{ result }}</div>{% endif %}
</div>
```

Output:

Arithmetic Operations

First Integer

Second Integer

Operation

Result: 28

Q2 — Magazine Cover Builder

Description: Form-driven cover builder: choose image, background color, text color, font family/size, and title/subtitle/tagline; updates preview on submit.

Code (View):

```
from django.shortcuts import render

DEFAULT_IMAGE = "https://images.unsplash.com/photo-1509021436665-8f07dbf5bf1d?
auto=format&fit=crop&w=800&q=60"
ALT_IMAGE_1 = "https://images.unsplash.com/photo-1521572267360-ee0c2909d518?
auto=format&fit=crop&w=800&q=60"
ALT_IMAGE_2 = "https://images.unsplash.com/photo-1507842217343-583bb7270b66?
auto=format&fit=crop&w=800&q=60"

def index(request):
    title = "Magazine"
    subtitle = "Your monthly dose"
    tagline = "Design the cover live"
    cover_image = DEFAULT_IMAGE
    bg_color = "#f4f4f4"
    text_color = "#111111"
    font_size = "20"
    font_family = "'Segoe UI', Arial, sans-serif"
```

```

if request.method == "POST":
    title = request.POST.get("title", title)
    subtitle = request.POST.get("subtitle", subtitle)
    tagline = request.POST.get("tagline", tagline)
    cover_image = request.POST.get("cover_image", cover_image)
    bg_color = request.POST.get("bg_color", bg_color)
    text_color = request.POST.get("text_color", text_color)
    font_size = request.POST.get("font_size", font_size)
    font_family = request.POST.get("font_family", font_family)

context = {
    "title": title,
    "subtitle": subtitle,
    "tagline": tagline,
    "cover_image": cover_image,
    "bg_color": bg_color,
    "text_color": text_color,
    "font_size": font_size,
    "font_family": font_family,
    "images": [DEFAULT_IMAGE, ALT_IMAGE_1, ALT_IMAGE_2],
}
return render(request, "q2_index.html", context)

```

Code (URL config):

```

from django.urls import path
from . import views

urlpatterns = [
    path("", views.index, name="index"),
]

```

Code (Template):

```

<form method="post" class="panel">
    {% csrf_token %}
    <label>Title</label>
    <input type="text" name="title" value="{{ title }}" />
    <!-- subtitle, tagline, image selector, colors, font size/family -->
    <button type="submit">Update Cover</button>
</form>
<div class="preview" style="background: {{ bg_color }}; font-family: {{ font_family }}; color: {{ text_color }};>
    <div class="cover">
        
        <div class="text" style="font-size: {{ font_size }}px;">
            <div class="title">{{ title }}</div>
            <div class="subtitle">{{ subtitle }}</div>
            <div class="tagline">{{ tagline }}</div>
        </div>
    </div>
</div>

```

```

        </div>
    </div>
</div>

```

Output:

Front Cover Form

Title

Subtitle

Tagline / Message

Cover Image

Background Color

Text Color

Font Size (px)

Font Family

Q3 — Book Information App

Description: Single-page app with tabs (via query param `page`) for Home, Metadata, Reviews, and Publisher info. Home shows cover, summary, and key details; other tabs show list data and include back links.

Code (View):

```

from django.shortcuts import render

BOOK = {
    "title": "The Art of Web",
    "author": "Aditya Sinha",
    "year": "2026",
    "publisher": "Campus Press",
    "isbn": "978-1-23456-789-0",
    "cover": "https://images.unsplash.com/photo-1524995997946-a1c2e315a42f?
auto=format&fit=crop&w=800&q=60",
    "summary": "A concise walk-through of building interactive web applications.",
    "reviews": [
        "Clear and practical guide for students.",
        "Great examples and easy to follow."
    ]
}

```

```
        "Perfect quick reference for labs.",  
    ],  
}  
  
def index(request):  
    page = request.GET.get("page", "home")  
    context = {"book": BOOK, "page": page}  
    return render(request, "q3_index.html", context)
```

Code (URL config):

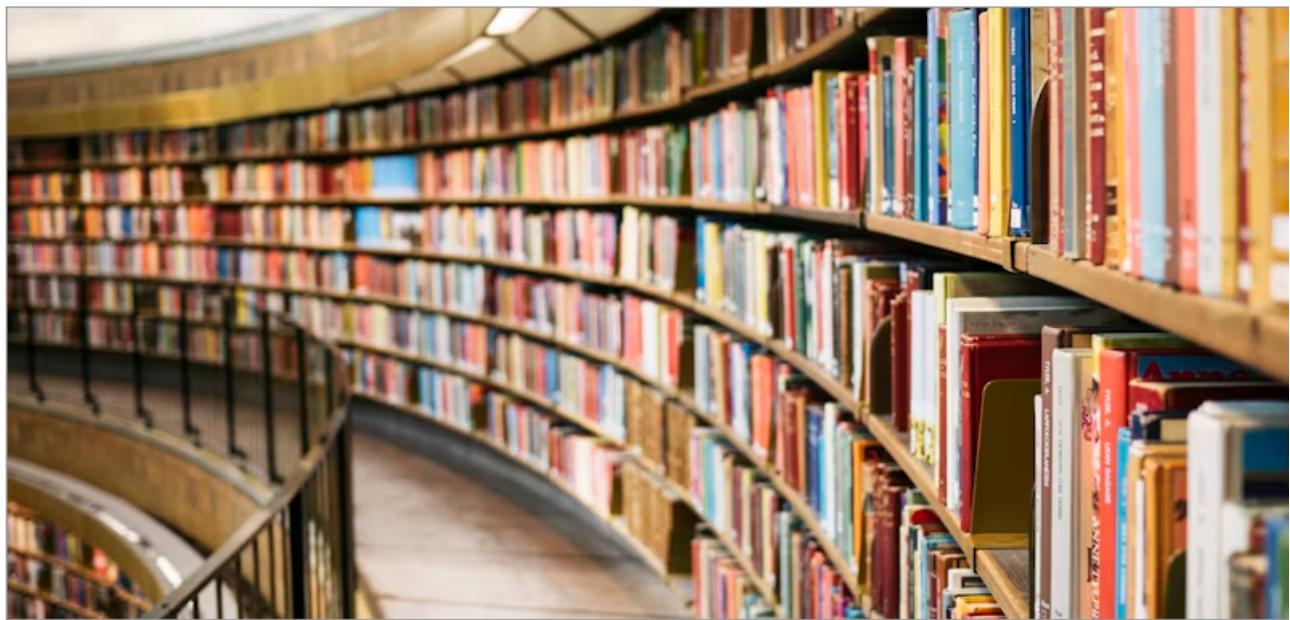
```
from django.urls import path  
from . import views  
  
urlpatterns = [  
    path("", views.index, name="index"),  
]
```

Code (Template):

```
<nav>  
    <a href="/?page=home">Home</a>  
    <a href="/?page=metadata">Metadata</a>  
    <a href="/?page=reviews">Reviews</a>  
    <a href="/?page=publisher">Publisher Info</a>  
</nav>  
{% if page == "home" %}  
    <!-- cover, summary --&gt;<br/>{% elif page == "metadata" %}  
    <!-- list metadata --&gt;<br/>{% elif page == "reviews" %}  
    <!-- list reviews --&gt;<br/>{% elif page == "publisher" %}  
    <!-- publisher info --&gt;<br/>{% endif %}
```

Output:

The Art of Web

[Home](#) [Metadata](#) [Reviews](#) [Publisher Info](#)

Author: Aditya Sinha

Year: 2026

ISBN: 978-1-23456-789-0

A concise walk-through of building interactive web applications.