Lab 6 - Developing Web Application using Django

Part II

settings.py

```python
INSTALLED_APPS = [
'django.contrib.admin',
'django.contrib.auth',
'django.contrib.contenttypes',
'django.contrib.sessions',
'django.contrib.messages',
'django.contrib.staticfiles',
'q1',
'q2',
'q3',
'a1',
]
```

urls.py

```python
from django.contrib import admin
from django.urls import path, include

urlpatterns = [
path('admin/', admin.site.urls),
path('q1/', include('q1.urls')),
path('q2/', include('q2.urls')),
path('q3/', include('q3.urls')),
path('a1/', include('a1.urls')),
]
```

Q1.

Codes:

views.py:

```python
from django.shortcuts import render
from django.http import HttpRequest

def calculator(request: HttpRequest):
result = None
num1 = None
num2 = None
operation = None
error = None
```

```python
if request.method == 'POST':
    try:
        num1 = int(request.POST.get('num1', 0))
        num2 = int(request.POST.get('num2', 0))
        operation = request.POST.get('operation', 'add')
        if operation == 'add':
            result = num1 + num2
        elif operation == 'subtract':
            result = num1 - num2
        elif operation == 'multiply':
            result = num1 * num2
        elif operation == 'divide':
            if num2 == 0:
                error = "Cannot divide by zero"
            else:
                result = num1 / num2
    except ValueError:
        error = "Please enter valid integers"
    context = {
        'result': result,
        'num1': num1,
        'num2': num2,
        'operation': operation,
        'error': error,
    }
    return render(request, 'q1/calculator.html', context)
```

urls.py:

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


urlpatterns = [
    path('', views.calculator, name='calculator'),
]
```

calculator.html:

```html
<!DOCTYPE html>
<html>
<head>
<title>Calculator</title>
<style>
body {
```

```css
      font-family: Arial, sans-serif;
      max-width: 400px;
      margin: 50px auto;
      padding: 20px;
    }
    form {
      border: 1px solid #ccc;
      padding: 20px;
      border-radius: 5px;
    }
    input, select {
      width: 100%;
      padding: 8px;
      margin: 10px 0;
      box-sizing: border-box;
    }
    button {
      width: 100%;
      padding: 10px;
      background-color: #4CAF50;
      color: white;
      border: none;
      border-radius: 4px;
      cursor: pointer;
    }
    button:hover {
      background-color: #45a049;
    }
    .result {
      margin-top: 20px;
      padding: 10px;
      background-color: #f0f0f0;
      border-radius: 4px;
    }
    .error {
      color: red;
      margin-top: 10px;
    }
  </style>
</head>
<body>
<h2>Arithmetic Calculator</h2>
<form method="POST">
{% csrf_token %}
<label>First Number:</label>
```
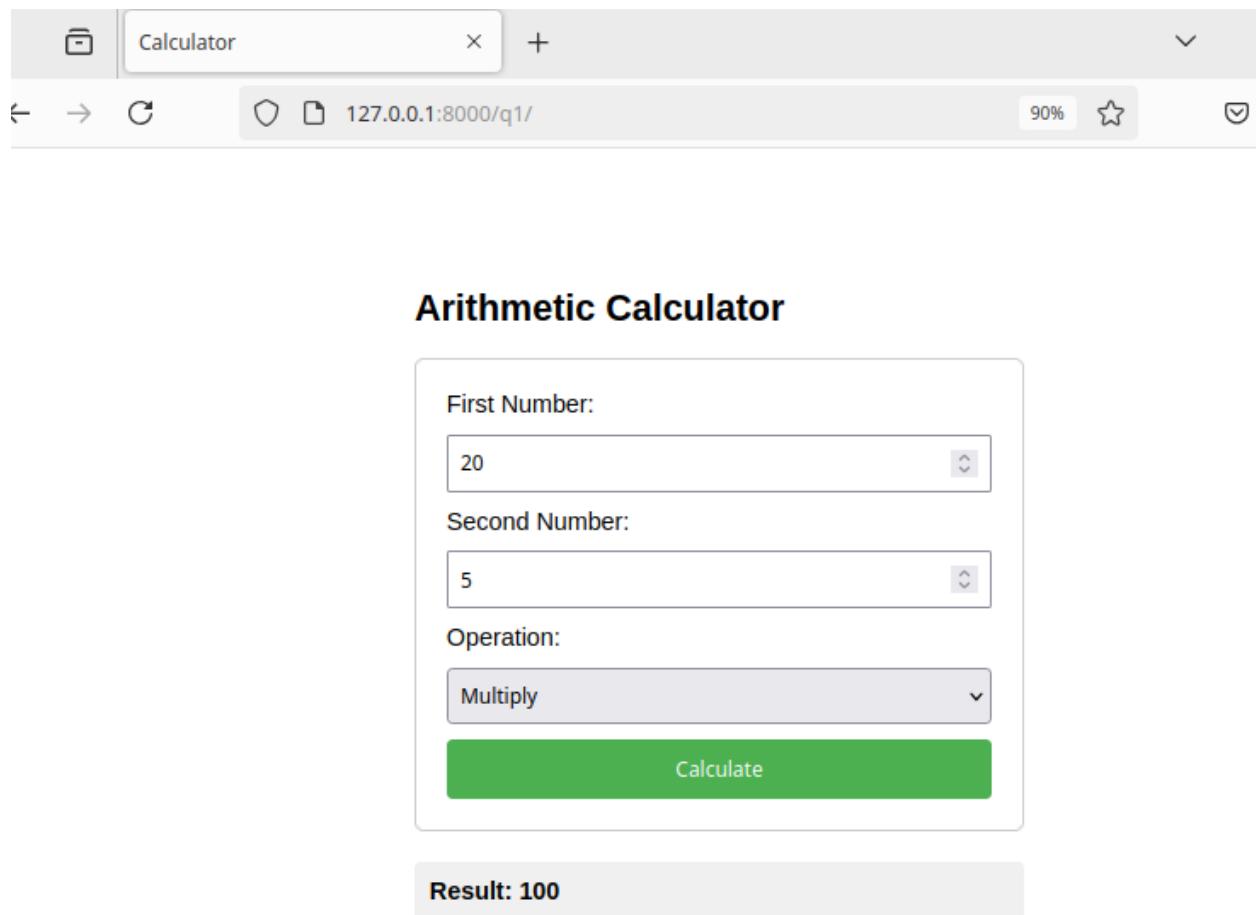
```html
<input type="number" name="num1" required value="{{ num1|default:" }}">
<label>Second Number:</label>
<input type="number" name="num2" required value="{{ num2|default:" }}">
<label>Operation:</label>
<select name="operation">
<option value="add" {% if operation == 'add' %}selected{% endif %}>Add</option>
<option value="subtract" {% if operation == 'subtract' %}selected{% endif %}>Subtract</option>
<option value="multiply" {% if operation == 'multiply' %}selected{% endif %}>Multiply</option>
<option value="divide" {% if operation == 'divide' %}selected{% endif %}>Divide</option>
</select>
<button type="submit">Calculate</button>
</form>
{% if error %}
<div class="error">Error: {{ error }}</div>
{% elif result is not None %}
<div class="result">
<strong>Result: {{ result }}</strong>
</div>
{% endif %}
</body>
</html>
```

Screenshot:

Arithmetic Calculator

First Number:

20

Second Number:

5

Operation:

Multiply

Calculate

Result: 100

Q2.

Codes:

views.py:

```python
from django.shortcuts import render
from django.http import HttpRequest

def magazine_cover(request: HttpRequest):
context = {
'text': '',
'bg_color': '#ffffff',
'font_size': '48',
'font_color': '#000000',
'font_family': 'Arial',
'pattern': 'solid',
}
```

```python
if request.method == 'POST':
    context['text'] = request.POST.get('text', '')
    context['bg_color'] = request.POST.get('bg_color', '#ffffff')
    context['font_size'] = request.POST.get('font_size', '48')
    context['font_color'] = request.POST.get('font_color', '#000000')
    context['font_family'] = request.POST.get('font_family', 'Arial')
    context['pattern'] = request.POST.get('pattern', 'solid')
return render(request, 'q2/magazine_cover.html', context)
```

urls.py:

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

urlpatterns = [
    path('', views.magazine_cover, name='magazine_cover'),
]
```

magazine_cover.html:

```html
{% load static %}
<!DOCTYPE html>
<html>
<head>
<title>Magazine Cover Generator</title>
<link rel="stylesheet" href="{% static 'q2/style.css' %}">
</head>
<body>
<div class="container">
<h2>Magazine Cover Generator</h2>
<div class="form-container">
<form method="POST">
{% csrf_token %}
<div class="form-group">
<label>Magazine Title/Text:</label>
<textarea name="text" placeholder="Enter your magazine title or text">{{ text }}</textarea>
</div>
<div class="form-group">
<label>Background Color:</label>
<input type="color" name="bg_color" value="{{ bg_color }}">
</div>
<div class="form-group">
<label>Font Size:</label>
<input type="range" name="font_size" min="20" max="120" value="{{ font_size }}">
```
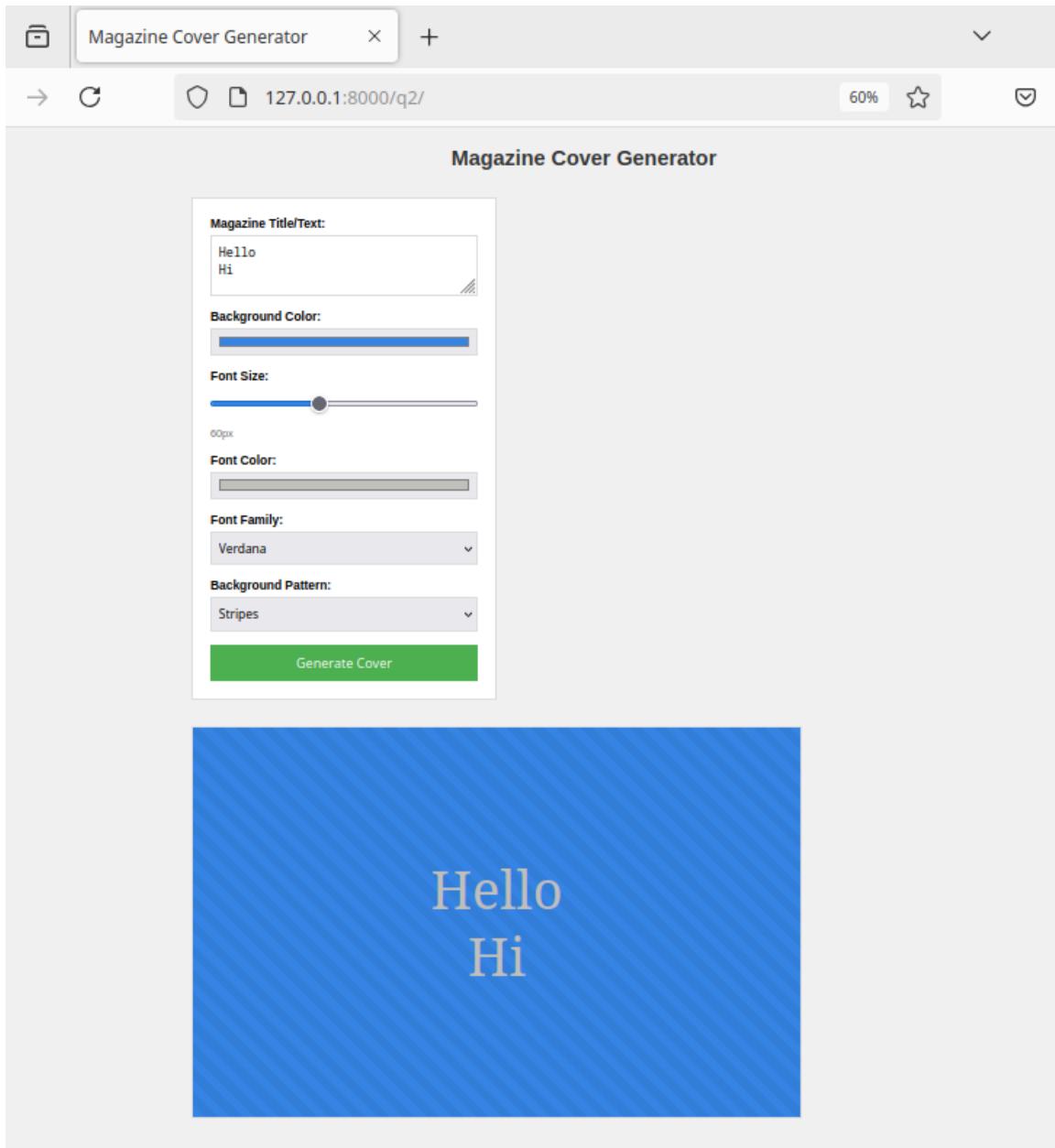
```html
<span id="size-display">{{ font_size }}px</span>
</div>
<div class="form-group">
<label>Font Color:</label>
<input type="color" name="font_color" value="{{ font_color }}">
</div>
<div class="form-group">
<label>Font Family:</label>
<select name="font_family">
<option value="Arial" {% if font_family == 'Arial' %}selected{% endif %}>Arial</option>
<option value="Georgia" {% if font_family == 'Georgia' %}selected{% endif %}>Georgia</option>
<option value="Times New Roman" {% if font_family == 'Times New Roman' %}selected{%
endif %}>Times New Roman</option>
<option value="Courier New" {% if font_family == 'Courier New' %}selected{% endif %}>Courier
New</option>
<option value="Verdana" {% if font_family == 'Verdana' %}selected{% endif %}>Verdana</option>
</select>
</div>
<div class="form-group">
<label>Background Pattern:</label>
<select name="pattern">
<option value="solid" {% if pattern == 'solid' %}selected{% endif %}>Solid Color</option>
<option value="dots" {% if pattern == 'dots' %}selected{% endif %}>Dots</option>
<option value="stripes" {% if pattern == 'stripes' %}selected{% endif %}>Stripes</option>
</select>
</div>
<button type="submit">Generate Cover</button>
</form>
</div>
<div class="cover-container pattern-{{ pattern }}" style="background-color: {{ bg_color }};">
<div class="cover-text" style="font-size: {{ font_size }}px; color: {{ font_color }}; font-family:
{{ font_family }};">
{{ text|linebreaks }}
</div>
</div>
</div>
<script>
const fontSizeInput = document.querySelector('input[name="font_size"]');
const sizeDisplay = document.getElementById('size-display');
fontSizeInput.addEventListener('input', function() {
sizeDisplay.textContent = this.value + 'px';
});
</script>
</body>
</html>
```

Screenshots:

Q3.

Codes:

views.py:

```python
from django.shortcuts import render
```

```python
def home(request):
book_data = {
'title': 'Chemistry',
'author': 'NCERT',
'class': '11 CBSE',
'description': 'Official Chemistry textbook for Class 11 CBSE'
}
return render(request, 'q3/home.html', {'book': book_data})

def metadata(request):
metadata = {
'isbn': '978-8174502529',
'pages': 412,
'edition': 'Latest',
'language': 'English',
'published': '2023'
}
return render(request, 'q3/metadata.html', {'metadata': metadata})

def reviews(request):
reviews_list = [
{'author': 'Student', 'rating': 5, 'text': 'Very comprehensive book with clear explanations.'},
{'author': 'Teacher', 'rating': 4.5, 'text': 'Great resource for classroom teaching.'},
{'author': 'Parent', 'rating': 5, 'text': 'Excellent for exam preparation.'}
]
return render(request, 'q3/reviews.html', {'reviews': reviews_list})

def publisher_info(request):
publisher = {
'name': 'NCERT Publications',
'address': 'New Delhi, India',
'contact': 'publications@ncert.nic.in',
'website': 'www.ncert.nic.in',
'description': 'Official publisher of textbooks for Central Board of Secondary Education (CBSE)'
}
return render(request, 'q3/publisher_info.html', {'publisher': publisher})
```

urls.py

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


urlpatterns = [
```

```
path('', views.home, name='home'),
path('metadata/', views.metadata, name='metadata'),
path('reviews/', views.reviews, name='reviews'),
path('publisher-info/', views.publisher_info, name='publisher_info'),
]
```

home.html:

```
{% load static %}
<!DOCTYPE html>
<html>
<head>
<title>{{ book.title }} - Book Information</title>
<link rel="stylesheet" href="{% static 'q3/style.css' %}">
</head>
<body>
<div class="container">
<h1>{{ book.title }}</h1>
<div class="book-cover">
<div class="cover-image">
<p>{{ book.class }}</p>
<h2>{{ book.title }}</h2>
<p>{{ book.author }}</p>
</div>
</div>
<p class="description">{{ book.description }}</p>
<div class="links">
<a href="{% url 'metadata' %}" class="btn">Metadata</a>
<a href="{% url 'reviews' %}" class="btn">Reviews</a>
<a href="{% url 'publisher_info' %}" class="btn">Publisher Info</a>
</div>
</div>
</body>
</html>
```

metadata.html:

```
{% load static %}
<!DOCTYPE html>
<html>
<head>
<title>Metadata</title>
<link rel="stylesheet" href="{% static 'q3/style.css' %}">
</head>
```

```
<body>
<div class="container">
<a href="{% url 'home' %}" class="btn-home">← Home</a>
<h1>Book Metadata</h1>
<div class="info-box">
<table>
<tr>
<td><strong>ISBN:</strong></td>
<td>{{ metadata.isbn }}</td>
</tr>
<tr>
<td><strong>Pages:</strong></td>
<td>{{ metadata.pages }}</td>
</tr>
<tr>
<td><strong>Edition:</strong></td>
<td>{{ metadata.edition }}</td>
</tr>
<tr>
<td><strong>Language:</strong></td>
<td>{{ metadata.language }}</td>
</tr>
<tr>
<td><strong>Published:</strong></td>
<td>{{ metadata.published }}</td>
</tr>
</table>
</div>
</div>
</body>
</html>
```

publisher_info.html:

```
{% load static %}
<!DOCTYPE html>
<html>
<head>
<title>Publisher Info</title>
<link rel="stylesheet" href="{% static 'q3/style.css' %}">
</head>
<body>
<div class="container">
<a href="{% url 'home' %}" class="btn-home">← Home</a>
```

```
<h1>Publisher Information</h1>
<div class="info-box">
<h2>{{ publisher.name }}</h2>
<p><strong>Address:</strong> {{ publisher.address }}</p>
<p><strong>Email:</strong> {{ publisher.contact }}</p>
<p><strong>Website:</strong> {{ publisher.website }}</p>
<p><strong>Description:</strong> {{ publisher.description }}</p>
</div>
</div>
</body>
</html>
```

reviews.html:

```
{% load static %}
<!DOCTYPE html>
<html>
<head>
<title>Reviews</title>
<link rel="stylesheet" href="{% static 'q3/style.css' %}">
</head>
<body>
<div class="container">
<a href="{% url 'home' %}" class="btn-home">← Home</a>
<h1>Reviews</h1>
<div class="reviews-list">
{% for review in reviews %}
<div class="review-box">
<p><strong>{{ review.author }}</strong> - Rating: {{ review.rating }}/5</p>
<p>{{ review.text }}</p>
</div>
{% endfor %}
</div>
</div>
</body>
</html>
```

Static-> style.css:

```
* {
margin: 0;
padding: 0;
box-sizing: border-box;
}
```

```css
body {
font-family: Arial, sans-serif;
background-color: #f0f0f0;
padding: 20px;
}

.container {
max-width: 700px;
margin: 0 auto;
background: white;
padding: 30px;
border: 1px solid #ddd;
}

h1 {
text-align: center;
color: #333;
margin-bottom: 30px;
margin-top: 20px;
}

h2 {
color: #333;
margin-bottom: 10px;
}

.btn-home {
display: inline-block;
padding: 8px 15px;
background-color: #2196F3;
color: white;
text-decoration: none;
font-size: 14px;
margin-bottom: 20px;
}

.btn-home:hover {
background-color: #0b7dda;
}

.book-cover {
text-align: center;
margin-bottom: 30px;
```

```css
}

.cover-image {
background: linear-gradient(135deg, #667eea 0%, #764ba2 100%);
color: white;
padding: 80px 20px;
border: 1px solid #ddd;
}

.cover-image p {
margin: 10px 0;
font-size: 14px;
}

.cover-image h2 {
color: white;
font-size: 32px;
margin: 20px 0;
}

.description {
text-align: center;
color: #666;
margin-bottom: 30px;
font-size: 14px;
}

.links {
display: flex;
gap: 10px;
justify-content: center;
flex-wrap: wrap;
}

.btn {
display: inline-block;
padding: 12px 25px;
background-color: #4CAF50;
color: white;
text-decoration: none;
font-weight: bold;
border: none;
}
```

```css
.btn:hover {
background-color: #45a049;
}

.info-box {
background-color: #f9f9f9;
padding: 20px;
border: 1px solid #ddd;
margin-bottom: 20px;
}

table {
width: 100%;
border-collapse: collapse;
}

table tr {
border-bottom: 1px solid #ddd;
}

table td {
padding: 10px 0;
}

table td:first-child {
width: 150px;
}

.reviews-list {
margin-top: 20px;
}

.review-box {
background-color: #f9f9f9;
padding: 15px;
margin-bottom: 15px;
border: 1px solid #ddd;
}

.review-box p {
margin: 5px 0;
color: #333;
font-size: 14px;
}
```
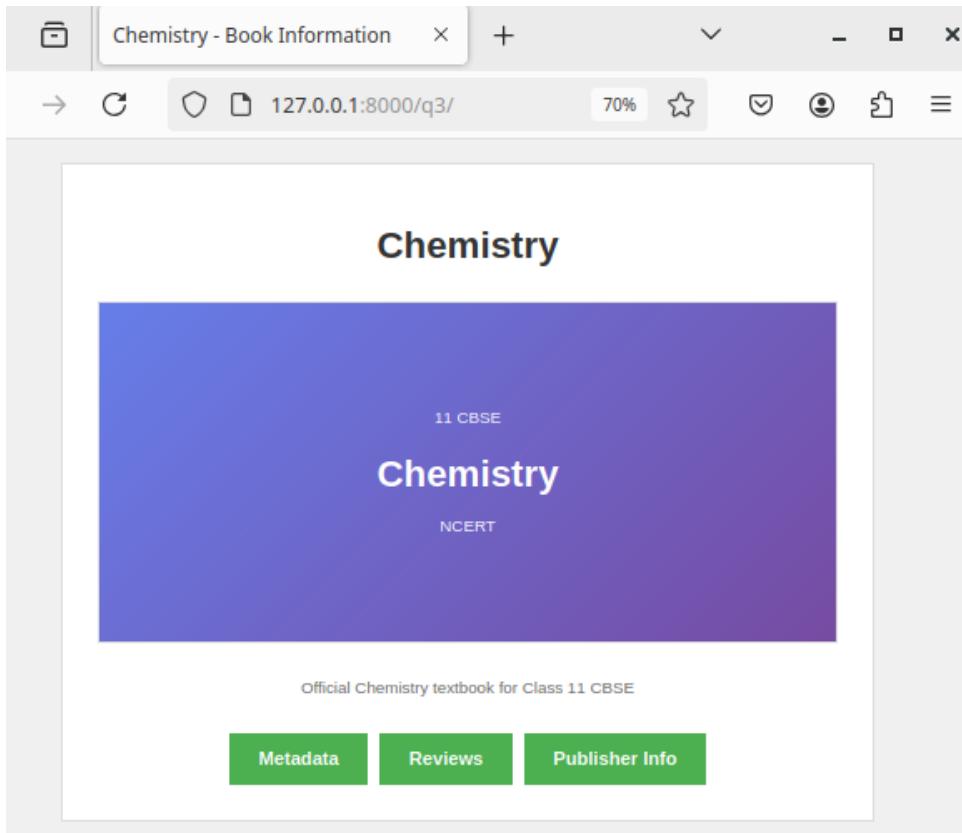
```
.review-box strong {
color: #333;
}
```

Screenshots:

Book Metadata

ISBN:	978-8174502529
Pages:	412
Edition:	Latest
Language:	English
Published:	2023

Reviews

Student - Rating: 5/5
Very comprehensive book with clear explanations.

Teacher - Rating: 4.5/5
Great resource for classroom teaching.

Parent - Rating: 5/5
Excellent for exam preparation.

Publisher Information

NCERT Publications

Address: New Delhi, India
Email: publications@ncert.nic.in
Website: www.ncert.nic.in
Description: Official publisher of textbooks for Central Board of Secondary Education (CBSE)