

This lab session covers the basics of Django Models (Part 1). By the end of this session, students should have a very good understanding of how to build a basic model and how to access models in Django.

Pre-lab Preparation:

- 1. Having bookmodule and usermodule in apps directory, with necessary configurations in settings.py.

Lab Activities:

Task 1 & Task 2:

Using Django Shell

TIMELINE

SQLITE EXPLORER

db.sqlite3

auth\_group

auth\_group\_...

auth\_permis...

auth\_user

auth\_user\_gr...

auth\_user\_us...

bookmod... ▶

id : integer

title : varia...

author : var...

price : real

edition : sm...

SQL ▼

< 1 / 1 > 1 – 7 of 7

id

title

author

price

edition

1

Django Unleashed

Andrew Pinkham

120.0

3

2

Reversing: Secrets of Reverse Engineering

E. Eilam

97.0

2

3

Continuous Delivery

J. Humble and D. Farley

0.0

1

4

Handbook of Django

John Doe

75.0

2

5

Advanced Django

John Developer

150.0

3

6

Handbook of Django

Django Guru

200.0

2

7

Understanding APIs

Jane Smith

300.0

3

Task 3:

EXPLORER

DJANGOPROJECTS

.venv

libraryproject

apps

bookmodule

\_\_pycache\_\_

migrations

templates

\_\_init\_\_.py

admin.py

apps.py

models.py M

SQLite

views.py M

libraryproject > apps > bookmodule > views.py > simple\_query

54

def search\_books(request):

59

for book in books:

70

if (search\_title and keyword in book['title'].lower()) or \

71

(search\_author and keyword in book['author'].lower()):

72

results.append(book)

73

74

return render(request, 'bookmodule/bookList.html', {'books': results})

75

76

return render(request, 'bookmodule/search.html')

77

def simple\_query(request):

78

# Query to find books with 'and' in their title (case-insensitive)

79

books = Book.objects.filter(title\_\_icontains='and')

80

return render(request, 'bookmodule/simple\_query.html', {'books': books})

81

127.0.0.1:8000/books/simple/query/

☆

📁

⬇️

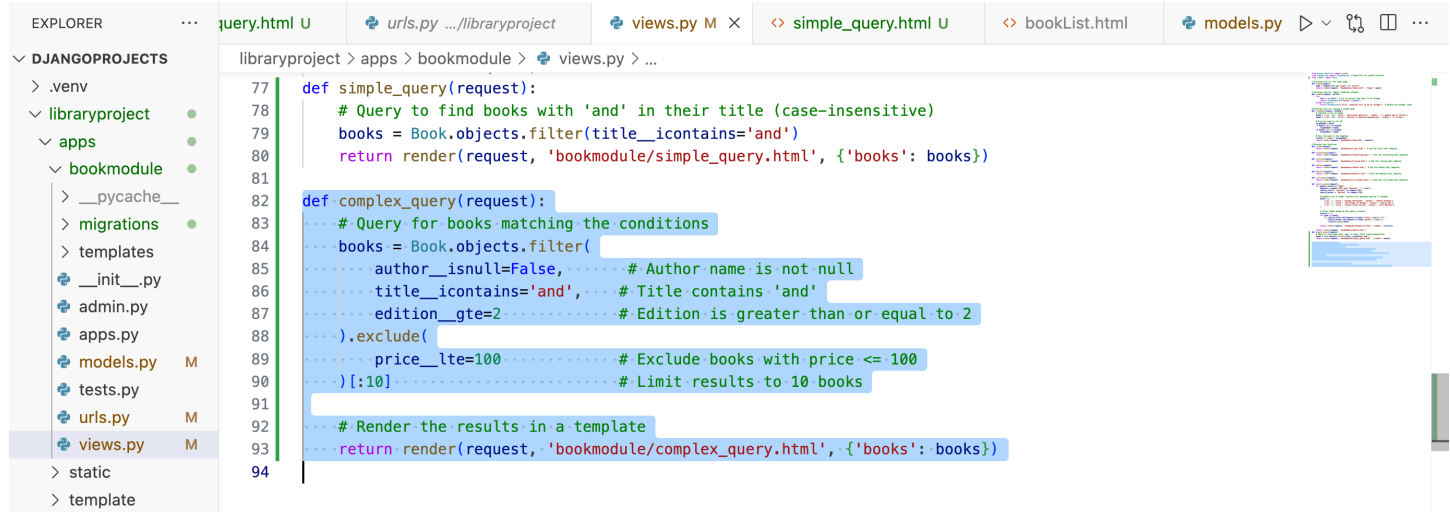
🌐

Relaunch to update ⋮

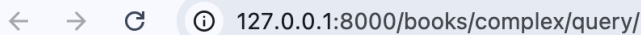
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Books with "and" in the Title

- ID: 4 | Title: Handbook of Django | Author: John Doe | Price: 75.0 | Edition: 2

**Task 4: Customize queries using common lookup conditions and keywords.**

```
77 def simple_query(request):
78     # Query to find books with 'and' in their title (case-insensitive)
79     books = Book.objects.filter(title__icontains='and')
80     return render(request, 'bookmodule/simple_query.html', {'books': books})
81
82 def complex_query(request):
83     # Query for books matching the conditions
84     books = Book.objects.filter(
85         author__isnull=False, # Author name is not null
86         title__icontains='and', # Title contains 'and'
87         edition__gte=2, # Edition is greater than or equal to 2
88     ).exclude(
89         price__lte=100 # Exclude books with price <= 100
90     )[:10] # Limit results to 10 books
91
92     # Render the results in a template
93     return render(request, 'bookmodule/complex_query.html', {'books': books})
94
```

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## Complex Query Results

- ID: 6 | Title: Handbook of Django | Author: Django Guru | Price: 200.0 | Edition: 2
- ID: 7 | Title: Understanding APIs | Author: Jane Smith | Price: 300.0 | Edition: 3

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