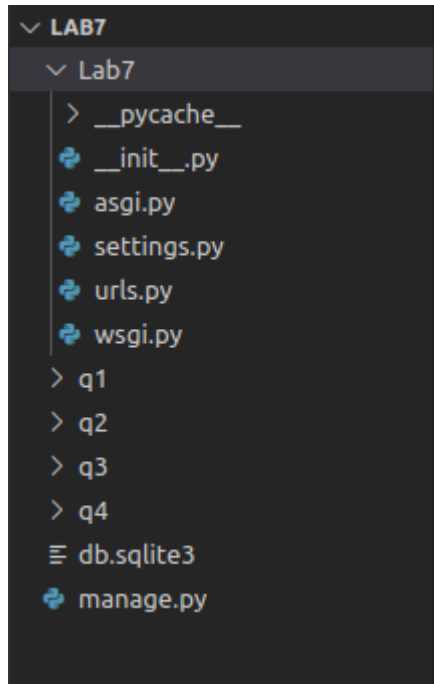


SANSKAAR PATNI
180905134 CSE C-23
LAB 7- DATABASES

Created a project Lab7 and 1 app for each project q1,q2,q3,q4 respectively:

Folder Structure



Changes in
Lab7/Lab7/settings.py

```
INSTALLED_APPS = [  
    'q1',  
    'q2',  
    'q3',  
    'q4',  
    'django.contrib.admin',  
    'django.contrib.auth',
```

Lab7/Lab7/urls.py

```
from django.contrib import admin  
from django.urls import path  
from django.conf.urls import include, url  
  
urlpatterns = [  
    path('admin/', admin.site.urls),  
    url(r'^q1/', include('q1.urls')),
```

```
url(r'^q2/', include('q2.urls')),
url(r'^q3/', include('q3.urls')),
url(r'^q4/', include('q4.urls')),
]
```

1. 1st question

Lab7/q1/

models.py

```
from django.db import models
from django import forms
from django.db.models import constraints

class Category(models.Model):
    name = models.CharField(max_length=30)
    # noOfVisits is sum of all page views of the category
    noOfVisits = models.IntegerField(default=0)
    noOfLikes = models.IntegerField()

    def __str__(self):
        return self.name

class Page(models.Model):
    category = models.ForeignKey(Category, on_delete=models.CASCADE)
    title = models.CharField(max_length=30)
    # views: can set a default as well as it gets incremented if we click
    on the link
    views = models.IntegerField(default=0)
    url = models.CharField(
        max_length=50, default="https://www.google.com")

    class Meta:
        ordering = ['views']

    def __str__(self):
        return self.title

class PageForm(forms.ModelForm):
    class Meta:
        model = Page
```

```

        fields = '__all__'

class CategoryForm(forms.ModelForm):
    class Meta:
        model = Category
        exclude = ('noOfVisits',)

```

Created urls.py

```

from django.conf.urls import url
from django.urls import path
from . import views

urlpatterns = [
    path('list', views.pageList, name='pageList'),
    path('forms', views.forms, name='forms'),
    path('categorySubmit', views.categorySubmit, name='categorySubmit'),
    path('pageSubmit', views.pageSubmit, name='pageSubmit'),
    path('<int:pk1>/updateViews/', views.updateViews,
name='updateViews'),
]

```

views.py

```

from django.http import HttpResponseRedirect
from django.shortcuts import render
from q1.models import Category, Page, CategoryForm, PageForm

def pageList(request):
    if request.method == 'POST':
        category = request.POST['category']
        pages = Page.objects.filter(category__name__startswith=category)
        return render(request, 'q1/index.html', {'pages': pages})
    pages = Page.objects.all()[:10]
    return render(request, 'q1/index.html', {'pages': pages})

def forms(request):
    return render(request, 'q1/forms.html', {'categoryForm':
CategoryForm(), 'pageForm': PageForm()})

```

```

def updateViews(request, pk1):
    page = Page.objects.get(pk=pk1)
    page.views += 1
    page.save()
    category = Category.objects.get(name=page.category)
    category.noOfVisits += 1
    category.save()
    return HttpResponseRedirect(page.url)

def pageSubmit(request):
    if request.method == 'POST':
        form = PageForm(request.POST)
        if form.is_valid():
            page = form.save(commit=False)
            page.save()
            category = Category.objects.get(name=page.category)
            category.noOfVisits += page.views
            category.save()
            print(category)
            return HttpResponseRedirect('/q1/list')
        else:
            return render(request, 'q1/forms.html', {'categoryForm':
CategoryForm(), 'pageForm': PageForm()})

def categorySubmit(request):
    if request.method == 'POST':
        form = CategoryForm(request.POST)
        if form.is_valid():
            category = form.save(commit=False)
            category.save()
            category.noOfVisits = 0
            category.save()
            return HttpResponseRedirect('/q1/list')
        else:
            return render(request, 'q1/forms.html', {'categoryForm':
CategoryForm(), 'pageForm': PageForm()})

```

Created Folder templates/q2/

Files Created:

index.html

```
<!DOCTYPE html>
```

```

<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <meta charset="utf-8" />
    <title>Pages List</title>
  </head>
  <body style="text-align: center;background-color:
#F7CAC9;margin-top: 20px;">
    <h1>Search pages by category</h1>
    <form action="/q1/list" method=post style="margin-bottom: 10px;"
>{% csrf_token %}
      <input type="text" placeholder="Category name"
name="category">
      <input type=submit>
    </form>
    {% for page in pages %}
      <div style="border: 1px solid #fff;width: 500px;margin:
auto;line-height: 1;">
        <h3>Title: {{page.title }}</h3>
        <h5>Page Views:{{page.views}}</h5>
        View Page: <a target="_blank" href="{% url 'updateViews'
page.id %}">{{page.title}}</a>
        <p>Category: {{ page.category.name }}
        <br> Category Visits:{{page.category.noOfVisits}} Likes:
{{page.category.noOfLikes}}</p>

      </div>
    {% endfor %}
    <div style="margin-top: 20px;">
      <a href="forms">New Page or New Category</a>
    </div>
  </body>
</html>

```

forms.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <meta charset="utf-8" />
    <title>Form</title>
  </head>
  <body style="text-align: center;background-color:
#FF6F61;margin-top: 20px;">
    <div style="display: flex;flex-direction: column;">

```

```

<h1>New Category</h1>
<form action="/q1/categorySubmit" method=post>{% csrf_token
%}

    <table>{{ categoryForm.as_p }}</table><br>
    <input type=submit>
</form>
</div>
<div style="display: flex;flex-direction: column;">
    <h1>New Page</h1>
    <form action="/q1/pageSubmit" method=post>{% csrf_token %}
        <table>{{ pageForm.as_p }}</table><br>
        <input type=submit>
    </form>
</div>
</body>
</html>

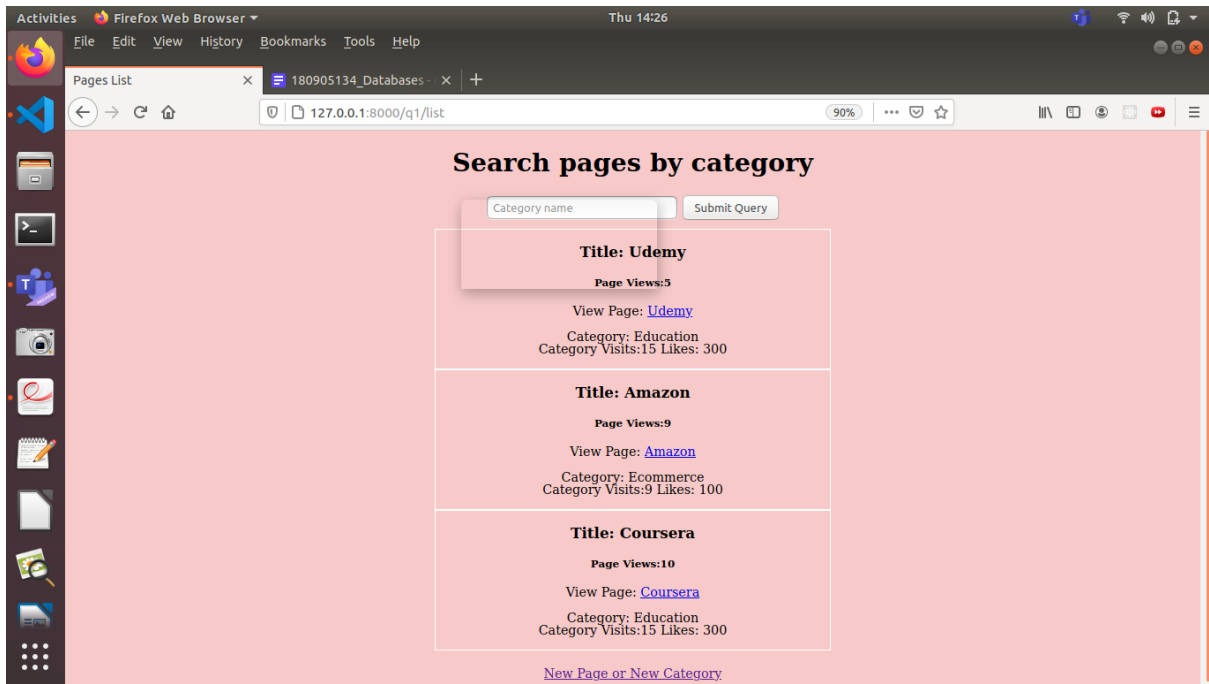
```

Screenshots:

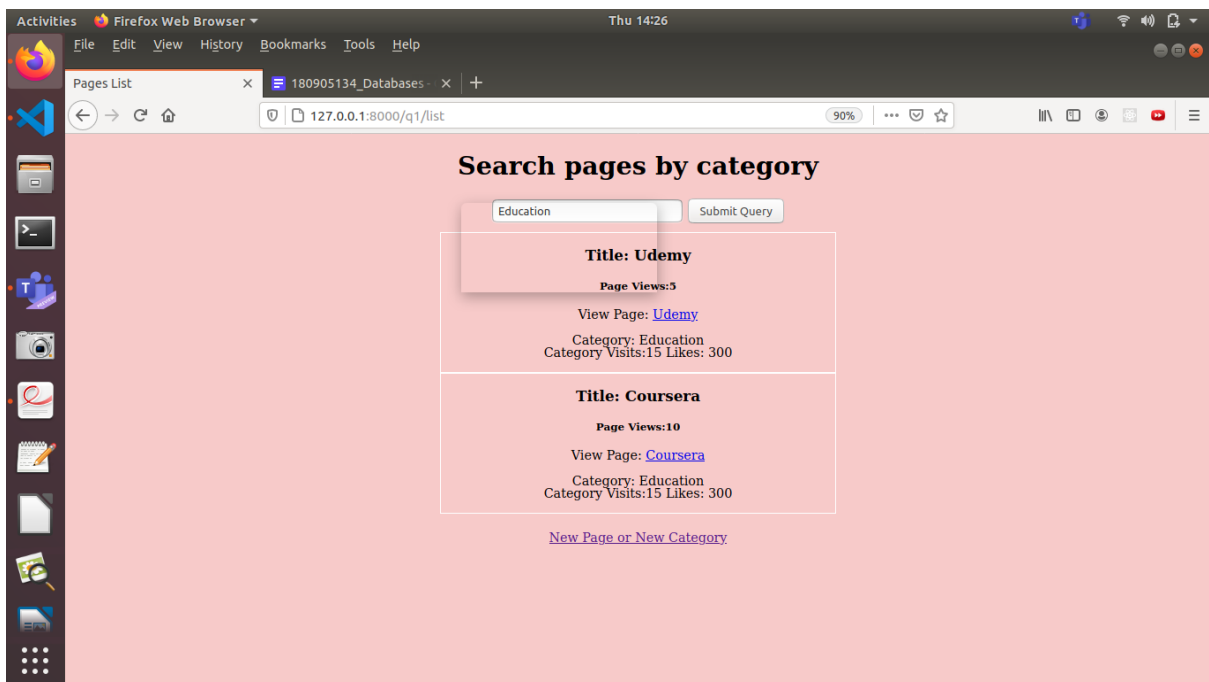
Category visits+= all pages views of the category

Moreover pages and category gets updated when a page is visited

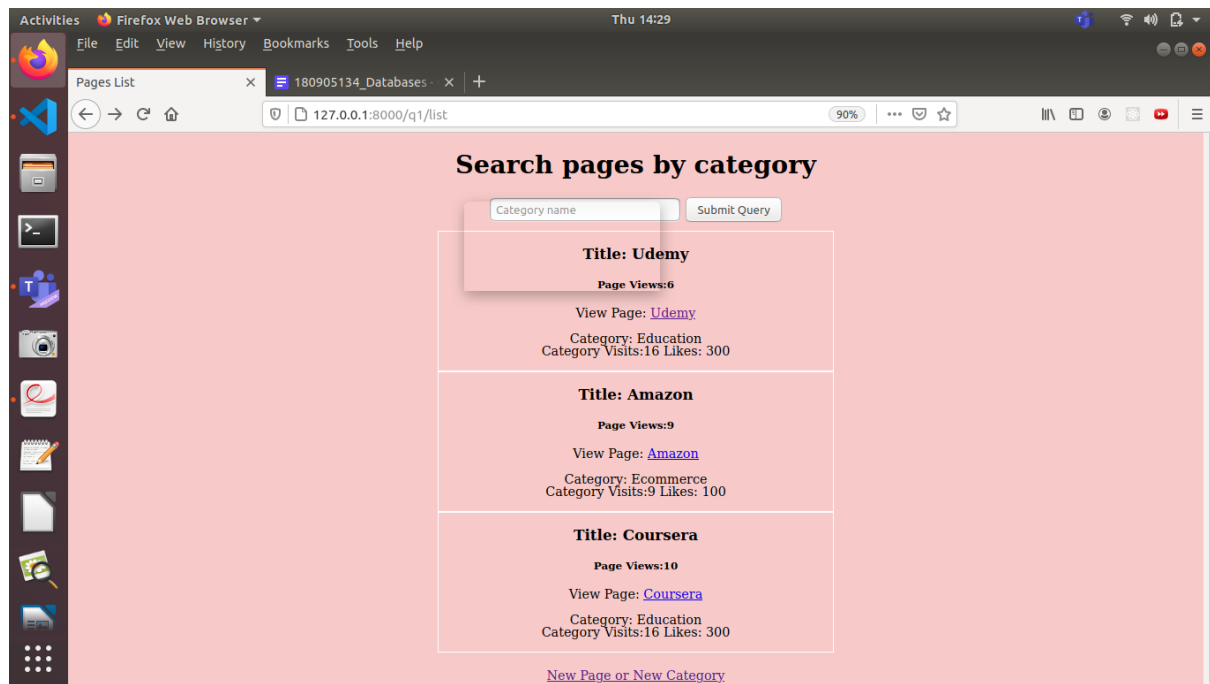
The screenshot shows a Firefox Web Browser window with two tabs. The active tab is titled 'Form' and shows a web page with two forms. The first form, titled 'New Category', has input fields for 'Name:' and 'NoOfLikes:', and a 'Submit Query' button. The second form, titled 'New Page', has a 'Category:' dropdown menu (currently set to 'Education'), a 'Title:' input field (containing 'Coursera'), a 'Views:' input field (containing '10'), and a 'Url:' input field (containing 'https://www.coursera.com'). There is also a 'Submit Query' button for this form. The browser's address bar shows the URL '127.0.0.1:8000/q1/forms'.



Extra feature can search by a particular category also



After visiting Udemy



2. 2nd question

Lab7/q2/

models.py

Modeled Lives Table as PersonDetails

```
from django.db import models
from django import forms

class PersonDetails(models.Model):
    person_name = models.CharField(max_length=30)
    street = models.CharField(max_length=30)
    city = models.CharField(max_length=30)

    def __str__(self):
        return self.person_name

class Works(models.Model):
    person = models.ForeignKey(PersonDetails, on_delete=models.CASCADE)
    company_name = models.CharField(max_length=30)
    salary = models.FloatField()

    class Meta:
        ordering = ['person']
```



```

    def __str__(self):
        return self.person

class PersonDetailsForm(forms.ModelForm):
    class Meta:
        model = PersonDetails
        fields = '__all__'

class WorksForm(forms.ModelForm):
    class Meta:
        model = Works
        fields = '__all__'

```

Created urls.py

```

from django.conf.urls import url
from django.urls import path
from . import views
urlpatterns = [
    path('list', views.personList, name='personList'),
    path('worksForm', views.worksForm, name='worksForm'),
    path('personForm', views.personForm, name='personForm'),
    path('worksSubmit', views.worksSubmit, name='worksSubmit'),
    path('personSubmit', views.personSubmit, name='personSubmit'),
]

```

views.py

```

objects.all()[:10]
    return render(request, 'q2/index.html', {'persons': persons})

def worksForm(request):
    return render(request, 'q2/worksForm.html', {'form': WorksForm()})

def personForm(request):
    return render(request, 'q2/personForm.html', {'form':
PersonDetailsForm()})

def personSubmit(request):
    if request.method == 'POST':
        form = PersonDetailsForm(request.POST)
        if form.is_valid():
            person = form.save(commit=False)

```

```

        person.save()
        return HttpResponseRedirect('/q2/list')
    else:
        return render(request, 'q2/personForm.html', {'form':
PersonDetailsForm()})

def worksSubmit(request):
    if request.method == 'POST':
        form = WorksForm(request.POST)
        if form.is_valid():
            works = form.save(commit=False)
            works.save()
            return HttpResponseRedirect('/q2/list')
        else:
            return render(request, 'q2/worksForm.html', {'form':
WorksForm()})

```

Created Folder templates/q2/

Files Created:

index.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>People List</title>
    </head>
    <body style="text-align: center;background-color:
#F7CAC9;margin-top: 20px;">
        <h1>Search people by company name</h1>
        <form action="/q2/list" method=post style="margin-bottom:
10px;">{% csrf_token %}
            <input type="text" placeholder="Company name"
name="company">
            <input type=submit>
        </form>
        {% for person in persons %}
            <div style="border: 1px solid #fff;width: 500px;margin:
auto;line-height: 1;">
                <h3>Name: {{person.person.person_name }}</h3>
                <p>Company: {{ person.company_name }}
Salary:{{person.salary}}</p>
                <p>Address: {{person.person.street}},
{{person.person.city}}</p>
            </div>
        {% endfor %}
    </body>
</html>

```

```

        </div>
        {% endfor %}
        <div style="margin-top: 20px;">
            <a href="personForm" style="margin-right: 20px;">New
Person</a>
            <a href="worksForm">New Work Profile</a>
        </div>
    </body>
</html>

```

personForm.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Person Form</title>
    </head>
    <body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
        <div style="display: flex;flex-direction: column;">
            <h1>Enter Employee Name and Address Details</h1>
            <form action="/q2/personSubmit" method=post>{% csrf_token %}
                <table>{{ form.as_p }}</table><br>
                <input type=submit>
            </form>
        </div>
    </body>
</html>

```

worksForm.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Works Form</title>
    </head>
    <body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
        <div style="display: flex;flex-direction: column;">
            <h1>Works Form</h1>
            <form action="/q2/worksSubmit" method=post>{% csrf_token %}
                <table>{{ form.as_p }}</table>
                <br>
            </form>
        </div>
    </body>
</html>

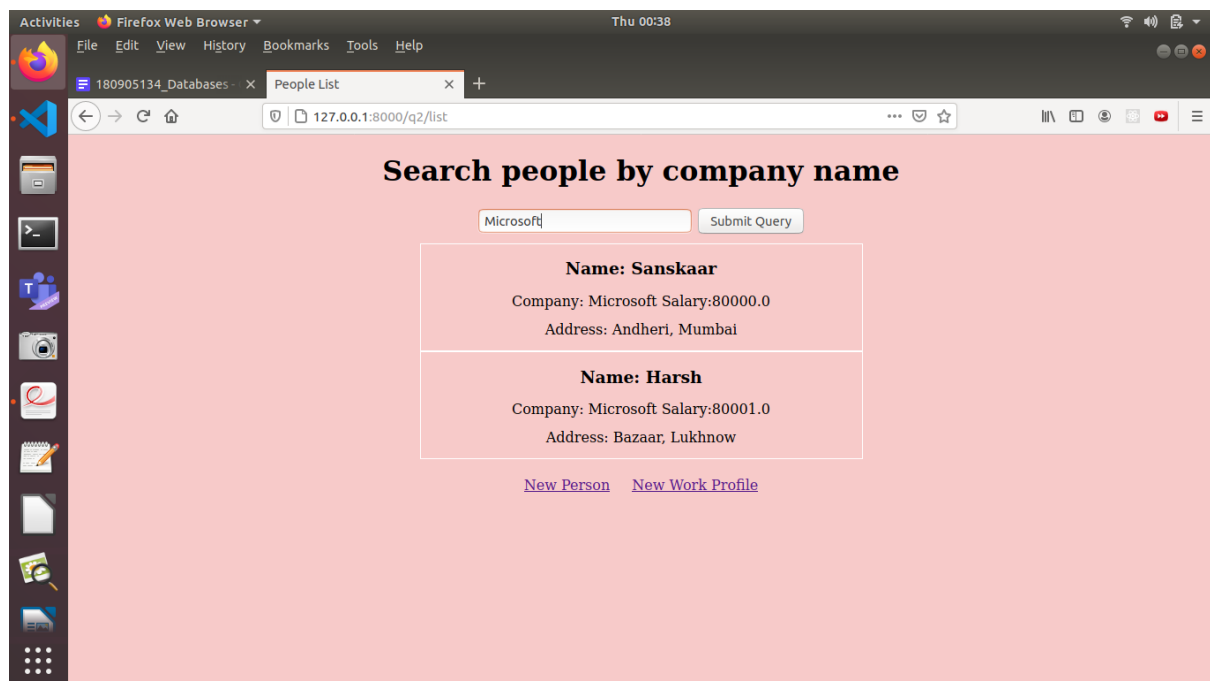
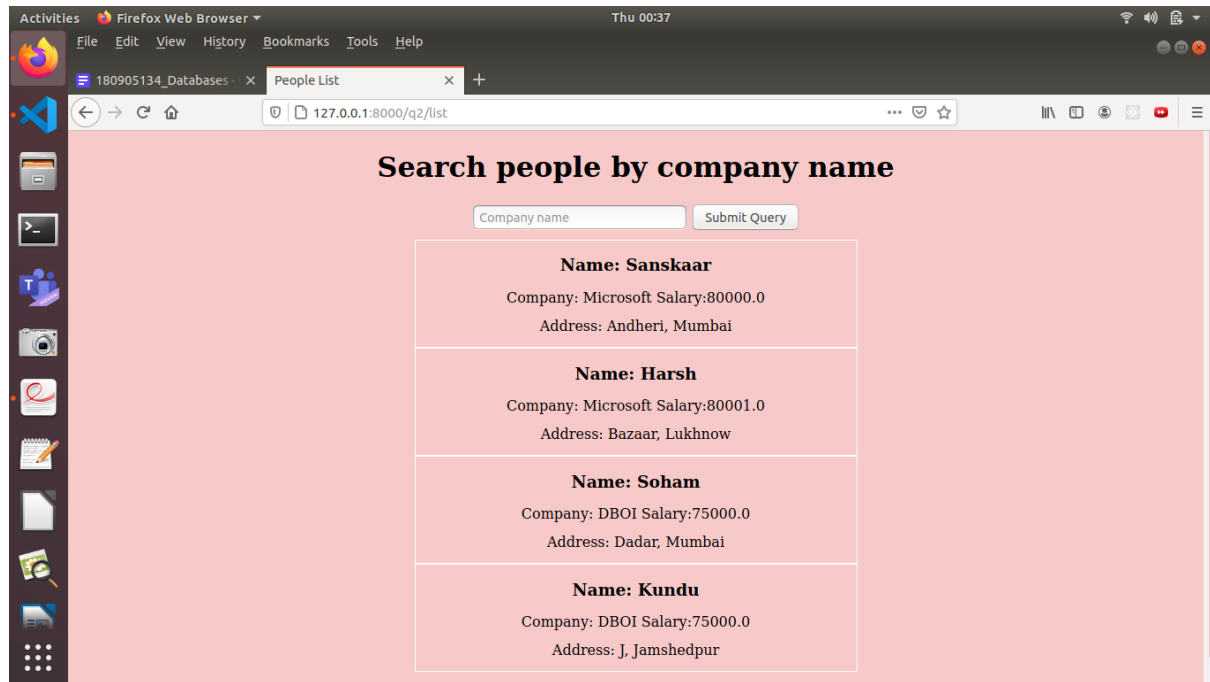
```

```

        <input type=submit>
    </form>
</div>
</body>
</html>

```

Screenshots:



Activities Firefox Web Browser Thu 00:39

File Edit View History Bookmarks Tools Help

180905134_Databases - x Person Form x +

127.0.0.1:8000/q2/personForm

Enter Employee Name and Address Details

Person name:

Street:

City:

Activities Firefox Web Browser Thu 00:40

File Edit View History Bookmarks Tools Help

180905134_Databases - x Works Form x +

127.0.0.1:8000/q2/worksForm

Works Form

Person:

Company name:

Salary:

3. 3rd question
Lab7/q3/

models.py

```
from django.db import models
from django import forms

class Publisher(models.Model):
    name = models.CharField(max_length=30)
```

```

streetAddress = models.CharField(max_length=30)
city = models.CharField(max_length=30)
state = models.CharField(max_length=30)
country = models.CharField(max_length=30)
websiteURL = models.CharField(max_length=30)

class Meta:
    ordering = ['name']

def __str__(self):
    return self.name

class Author(models.Model):
    first_name = models.CharField(max_length=30)
    last_name = models.CharField(max_length=30)
    email = models.EmailField()

    def __str__(self):
        return "%s %s" % (self.first_name, self.last_name)

class Book(models.Model):
    title = models.CharField(max_length=100)
    pub_date = models.DateField()
    publisher = models.ForeignKey(Publisher, on_delete=models.CASCADE)
    authors = models.ManyToManyField(Author)

    def __str__(self):
        return self.title

    class Meta:
        ordering = ['title']

class BookForm(forms.ModelForm):
    class Meta:
        model = Book
        exclude = ('pub_date',)

class AuthorForm(forms.ModelForm):
    class Meta:

```

```

        model = Author
        fields = '__all__'

class PublisherForm(forms.ModelForm):
    class Meta:
        model = Publisher
        fields = '__all__'

```

Created urls.py

```

from django.conf.urls import url
from django.urls import path
from . import views

urlpatterns = [
    path('books', views.bookList, name='bookList'),
    path('authors', views.authorList, name='authorList'),
    path('publishers', views.publisherList, name='publisherList'),
    path('bookForm', views.bookForm, name='bookForm'),
    path('publisherForm', views.publisherForm, name='publisherForm'),
    path('authorForm', views.authorForm, name='authorForm'),
    path('bookSubmit', views.bookSubmit, name='bookSubmit'),
    path('authorSubmit', views.authorSubmit, name='authorSubmit'),
    path('publisherSubmit', views.publisherSubmit,
name='publisherSubmit'),
]

```

views.py

```

from datetime import datetime
from django.http import HttpResponseRedirect
from django.shortcuts import render
from q3.models import Author, Book, Publisher, BookForm, AuthorForm,
PublisherForm

def bookList(request):
    books = Book.objects.all()[:10]
    return render(request, 'q3/books.html', {'books': books})

def authorList(request):
    authors = Author.objects.all()[:10]

```

```

        return render(request, 'q3/authors.html', {'authors': authors})

def publisherList(request):
    publishers = Publisher.objects.all()[:10]
    return render(request, 'q3/publishers.html', {'publishers':
publishers})

def bookForm(request):
    return render(request, 'q3/bookForm.html', {'form': BookForm()})

def authorForm(request):
    return render(request, 'q3/authorForm.html', {'form': AuthorForm()})

def publisherForm(request):
    return render(request, 'q3/publisherForm.html', {'form':
PublisherForm()})

def bookSubmit(request):
    if request.method == 'POST':
        form = BookForm(request.POST)
        if form.is_valid():
            product = form.save(commit=False)
            product.pub_date = datetime.now()
            product.save()
            return HttpResponseRedirect('/q3/books')
        else:
            return render(request, 'q3/bookForm.html', {'form':
BookForm()})

def publisherSubmit(request):
    if request.method == 'POST':
        form = PublisherForm(request.POST)
        if form.is_valid():
            product = form.save(commit=False)
            product.save()
            return HttpResponseRedirect('/q3/publishers')
        else:

```



```

        return render(request, 'q3/publisherForm.html', {'form':
PublisherForm()})

def authorSubmit(request):
    if request.method == 'POST':
        form = AuthorForm(request.POST)
        if form.is_valid():
            product = form.save(commit=False)
            product.save()
            return HttpResponseRedirect('/q3/authors')
        else:
            return render(request, 'q3/authorForm.html', {'form':
AuthorForm()})

```

Created Folder templates/q3/

Files Created:

authors.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Authors List</title>
    </head>
    <body style="text-align: center;background-color:
#F7CAC9;margin-top: 50px;">
        <h1>List of Authors</h1>
        {% for author in authors %}
            <div style="border: 1px solid #fff;width: 500px;margin:
auto;">
                <p>{{ author.first_name }} {{ author.last_name }}</p>
                <p>Email: {{author.email}}</p>
            </div>
        {% endfor %}
        <a href="authorForm">New author</a>
    </body>
</html>

```

books.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Books List</title>

```

```

</head>
<body style="text-align: center;background-color:
#F7CAC9;margin-top: 50px;">
    <h1>List of books</h1>
    {% for book in books %}
    <p>{{ book.title }}</p>
    <p>Publishers: {{book.publisher}}</p>
    <p>Authors: {{book.authors.0}}</p>
    <p>Published Date: {{book.pub_date}}</p>
    {% endfor %}
    <a href="bookForm">New book</a>
</body>
</html>

```

publishers.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
    <meta charset="utf-8" />
    <title>Publishers List</title>
    </head>
    <body style="text-align: center;background-color:
#F7CAC9;margin-top: 50px;">
        <h1>List of publishers</h1>
        <div style="border: 1px solid #fff;width: 500px;margin: auto;">
            {% for publisher in publishers %}
            <p>{{ publisher.name }}</p>
            Address:<p>{{publisher.streetAddress}},
{{publisher.city}}<br>
                        {{publisher.state}}, {{publisher.country}}
            </p>
            <p>Website URL: {{publisher.websiteURL}}</p>
            {% endfor %}
        </div>
        <a href="publisherForm">New publisher</a>
    </body>
</html>

```

bookForm.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
    <meta charset="utf-8" />

```

```

<title>Book Form</title>
</head>
<body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
    <div style="display: flex;flex-direction: column;">
        <h1>Enter Book Details</h1>
        <form action="/q3/bookSubmit" method=post>{% csrf_token %}
            <table>{{ form.as_p }}</table><br>
            <input type=submit>
        </form>
    </div>
</body>
</html>

```

authorForm.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Author Form</title>
    </head>
    <body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
        <div style="display: flex;flex-direction: column;">
            <h1>Enter Author Details</h1>
            <form action="/q3/authorSubmit" method=post>{% csrf_token %}
                <table>{{ form.as_p }}</table><br>
                <input type=submit>
            </form>
        </div>
    </body>
</html>

```

publisherForm.html

```

<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Publisher Form</title>
    </head>
    <body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
        <div style="display: flex;flex-direction: column;">

```

```

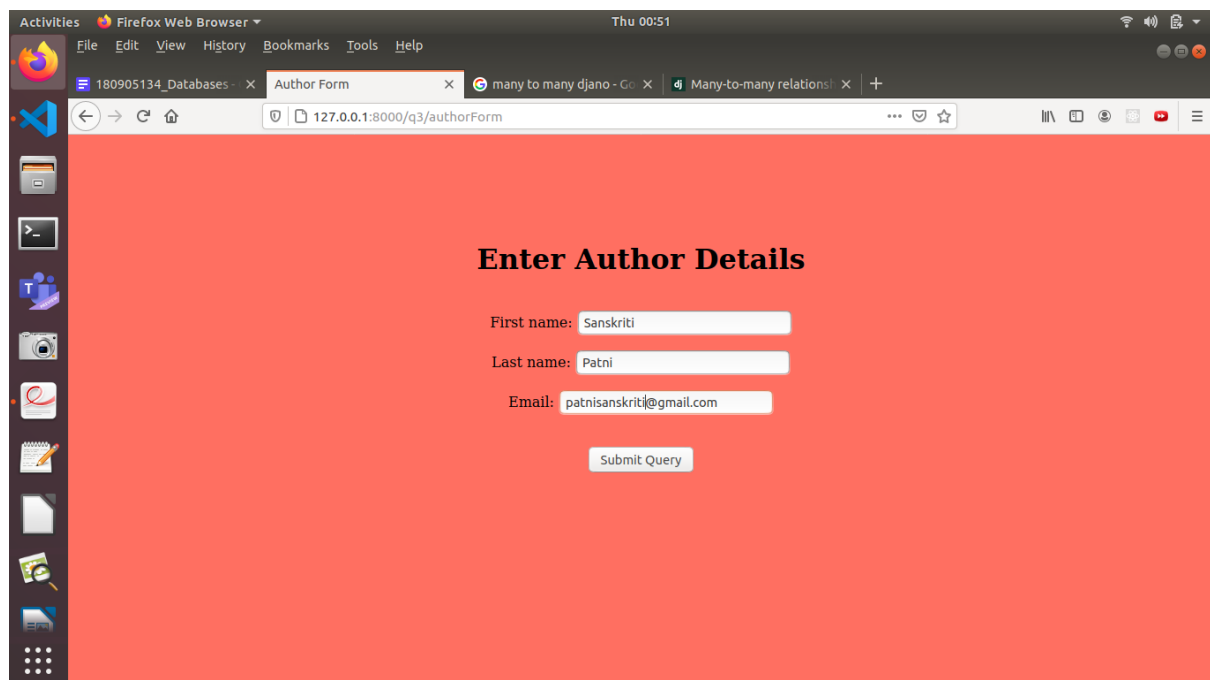
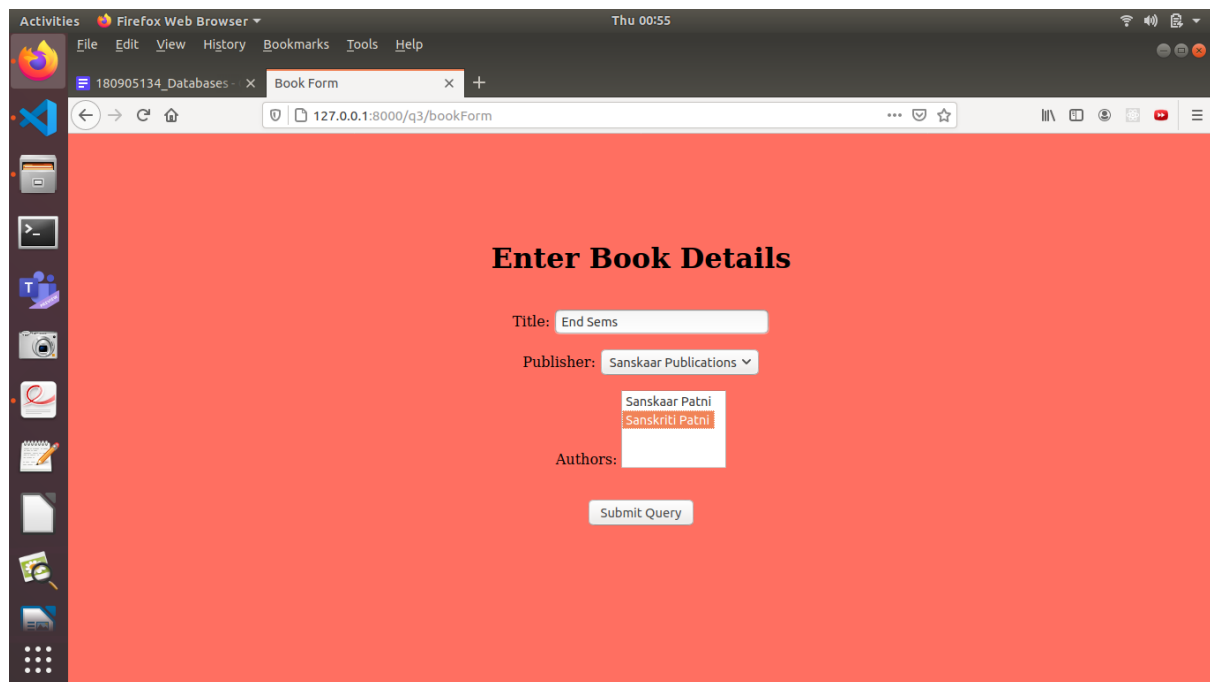
<h1>Enter Publisher Details</h1>
<form action="/q3/publisherSubmit" method=post>{% csrf_token
%}

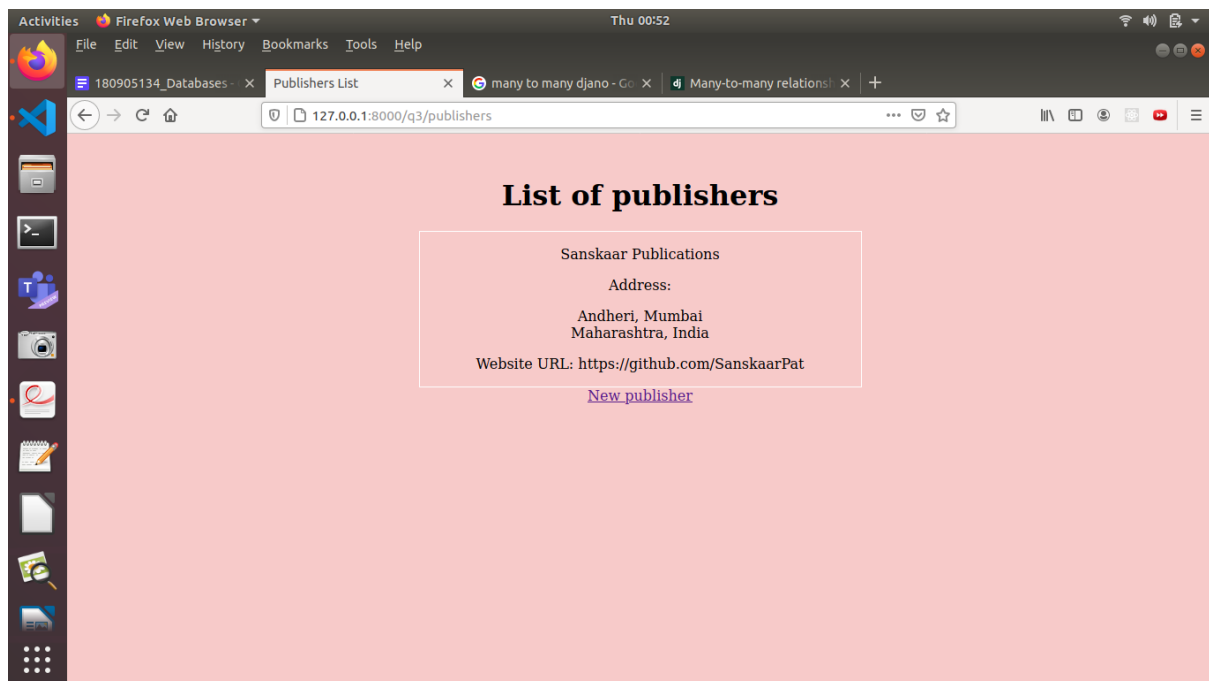
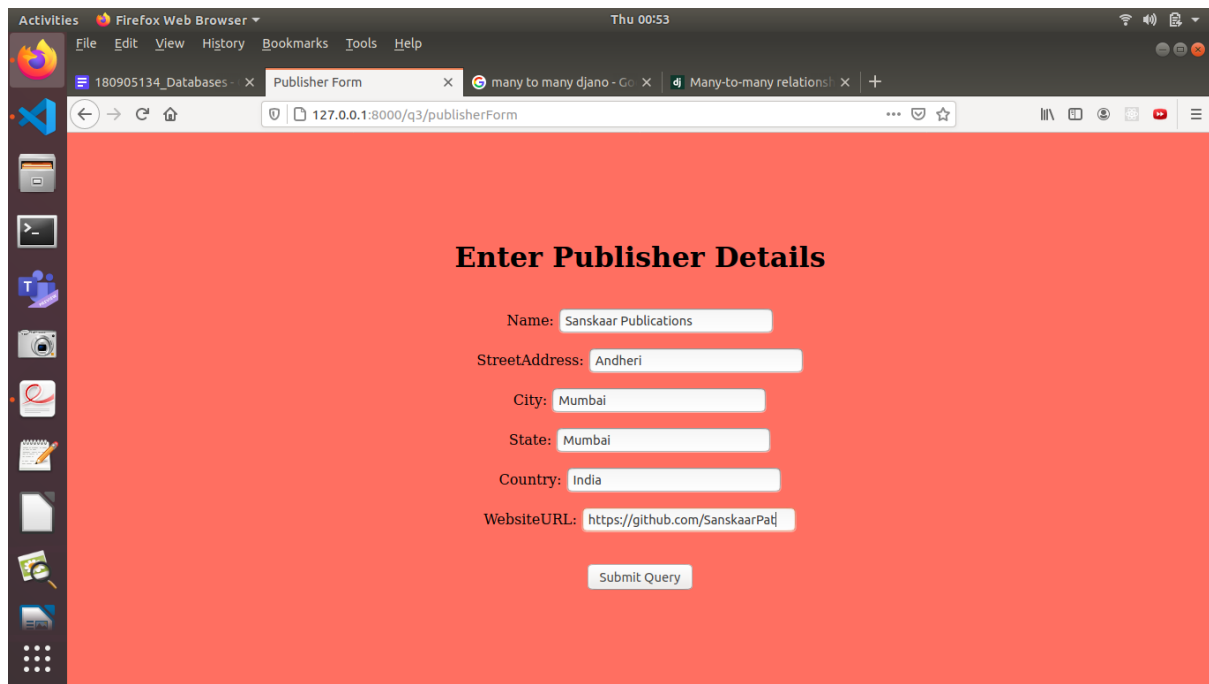
    <table>{{ form.as_p }}</table><br>
    <input type=submit>

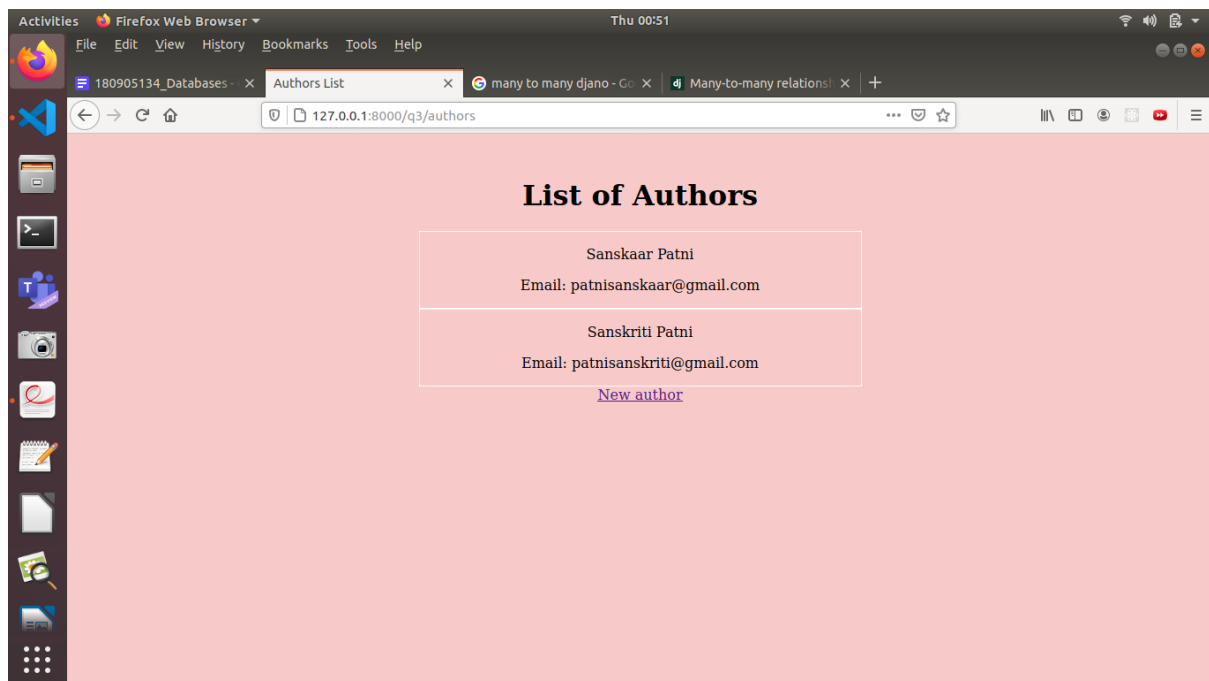
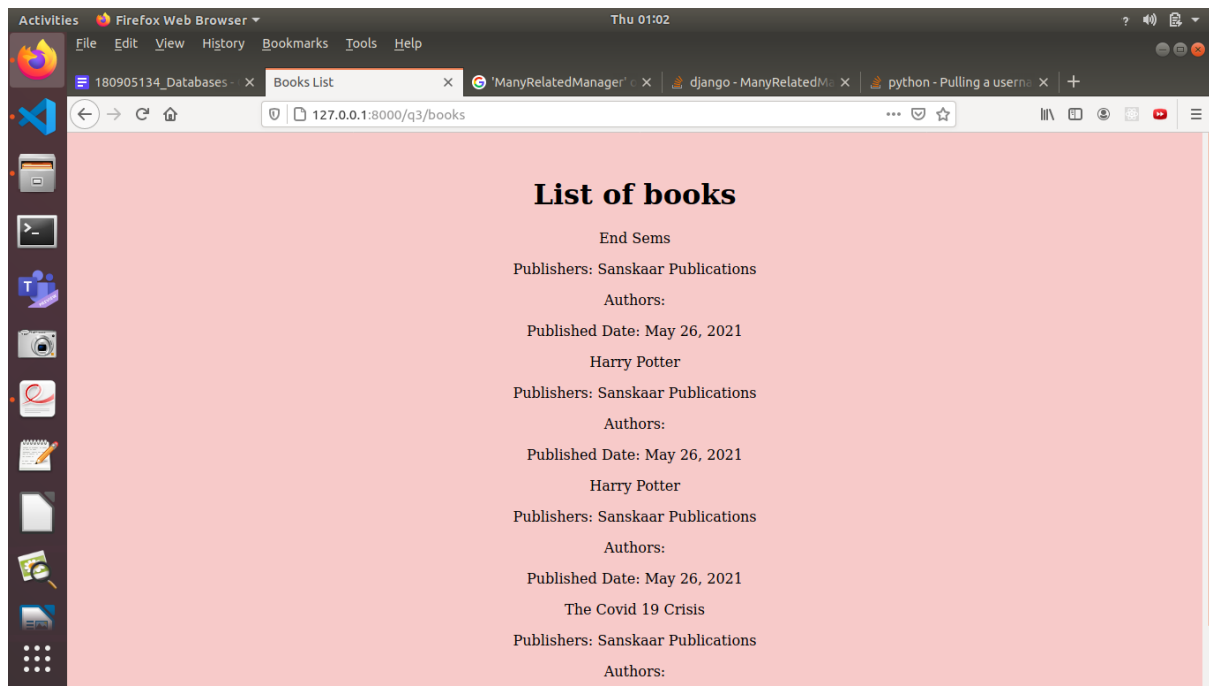
</form>
</div>
</body>
</html>

```

Screenshots:







4. 4th question
Lab7/q4/

models.py

```
from django.db import models
from django import forms

class ProductModel(models.Model):
    title = models.CharField(max_length=20)
```

```

description = models.TextField()
timestamp = models.DateTimeField()
price = models.FloatField()

def __str__(self):
    return self.title

class Meta:
    ordering = ('-timestamp',)

class ProductForm(forms.ModelForm):
    class Meta:
        model = ProductModel
        exclude = ('timestamp',)

```

Created urls.py

```

from django.conf.urls import url
from django.urls import path
from . import views
urlpatterns = [
    path('', views.productlist, name='productlist'),
    path('submit', views.submit, name='submit'),
    path('form', views.form, name='form'),
]

```

views.py

```

from datetime import datetime
from django.http import HttpResponseRedirect
from django.shortcuts import render
from q4.models import ProductModel, ProductForm

def productlist(request):
    products = ProductModel.objects.all()[:10]
    return render(request, 'q4/index.html', {'products': products})

def form(request):
    return render(request, 'q4/form.html', {'form': ProductForm()})

```

```
def submit(request):
    if request.method == 'POST':
        form = ProductForm(request.POST)
        if form.is_valid():
            product = form.save(commit=False)
            product.timestamp = datetime.now()
            product.save()
            return HttpResponseRedirect('/q4/')
        else:
            return render(request, 'q4/form.html', {'form':
ProductForm()})
```

Created Folder templates/q4/

Files Created:

form.html

```
<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Product Form</title>
    </head>
    <body style="text-align: center;background-color:
#FF6F61;margin-top: 100px;">
        <div style="display: flex;flex-direction: column;">
            <h1>Enter Product Details</h1>
            <form action="/q4/submit" method=post>{% csrf_token %}
                <table>{{ form.as_p }}</table><br>
                <input type=submit>
            </form>
        </div>
    </body>
</html>
```

index.html

```
<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <meta charset="utf-8" />
        <title>Product List</title>
    </head>
    <body style="text-align: center;background-color:
#F7CAC9;margin-top: 50px;">
```



```

<h1>List of Products</h1>
    {% for product in products %}
    <h2>{{ product.title }}</h2>
    <p style="width: 800px;margin: auto;">{{ product.description
}}</p>

    <p>Price: Rs. {{ product.price }}</p>
    {% endfor %}

    <a href="form">New Product</a>

</body>
</html>

```

Screenshots:

