

PROJECT REPORT OF BUILDING  
NEWS WEBISTE  
BY DJANGO FRAMEWORK

by

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# Abstract

This report introduces the process of creating part of a News Website which is a data-driven website used by the Normal daily life news reader. This website has two major components: about django framework and image of my django project result. The major part of the group component and minor part of marking component are implemented by me and the implementation details will be introduced in the report. The implementation uses a tool called Django Framework which is an excellent open source web application framework for complex data-driven website development. The major part of this report will introduce how to use Django to create a database table, web page user interface and inner logic to handle user request by going through the group ,permission and users component implementation process.

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# Chapter 1

## Introduction

This project report will introduce how to build part of a news website using the Django framework. Django is an open source web application framework which is written in Python. This news website built using Django has four major components each of which has different functionality but similar architecture. In the project report I will demonstrate details of using Django to build one major component of this system: the group component, which is my major contribution to the whole system. Also the technique and process which is showed here can be applied to build the other one components in the news website as well as other complex database-driven websites.

This system is built using Django web application framework. Django was originally developed for the news-oriented site of the world company in Lawrence, Kansas. It simplifies the development process of complex, data-base driven web applications like a news-oriented site. Its well-designed framework includes three major parts: model, view and template. Our News Website consists of two components which are admin Panel and Front Gui. Each component contains those three parts. When we develop the News website, we design the model of the relative component for data architecture, then the template for user interface, at last we implement the view which includes all the functions.

### 1.1 Limitation

Complex websites such as the News Website usually take some time to test and validate. The system may have some potential bugs or flaws because of the development time constraint. However because of the flexibility and powerful functionality of Django, these bugs or flaws can be fixed.

Home ▾ All News ▾ entertainment ▾ health ▾ sports ▾ science ▾ technology ▾ business ▾

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relax': Abdul Razzaq says Hardik Pandya needs to work ha... - Hindustan Times

# Chapter 2

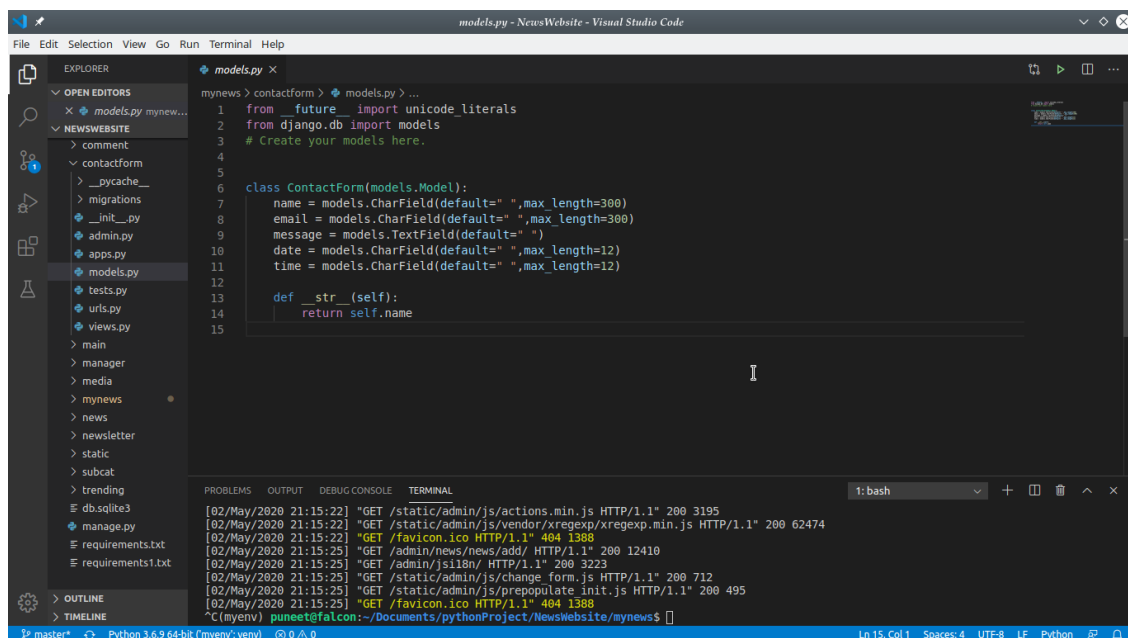
## Preliminary

### 2.1 Django framework

Django is an open source web application framework written in Python. The primary goal of Django is to make the development of complex, data-based websites easier. Thus Django emphasizes the reusability and pluggability of components to ensure rapid developments. Django consists of three major parts: model, view and template.

#### 2.1.1 Model

Model[4] is a single, definitive data source which contains the essential field and behavior of the data. Usually one model is one table in the database. Each attribute in the model represents a field of a table in the database. Django provides a set of automatically-generated database application programming interfaces (APIs) for the convenience of users.



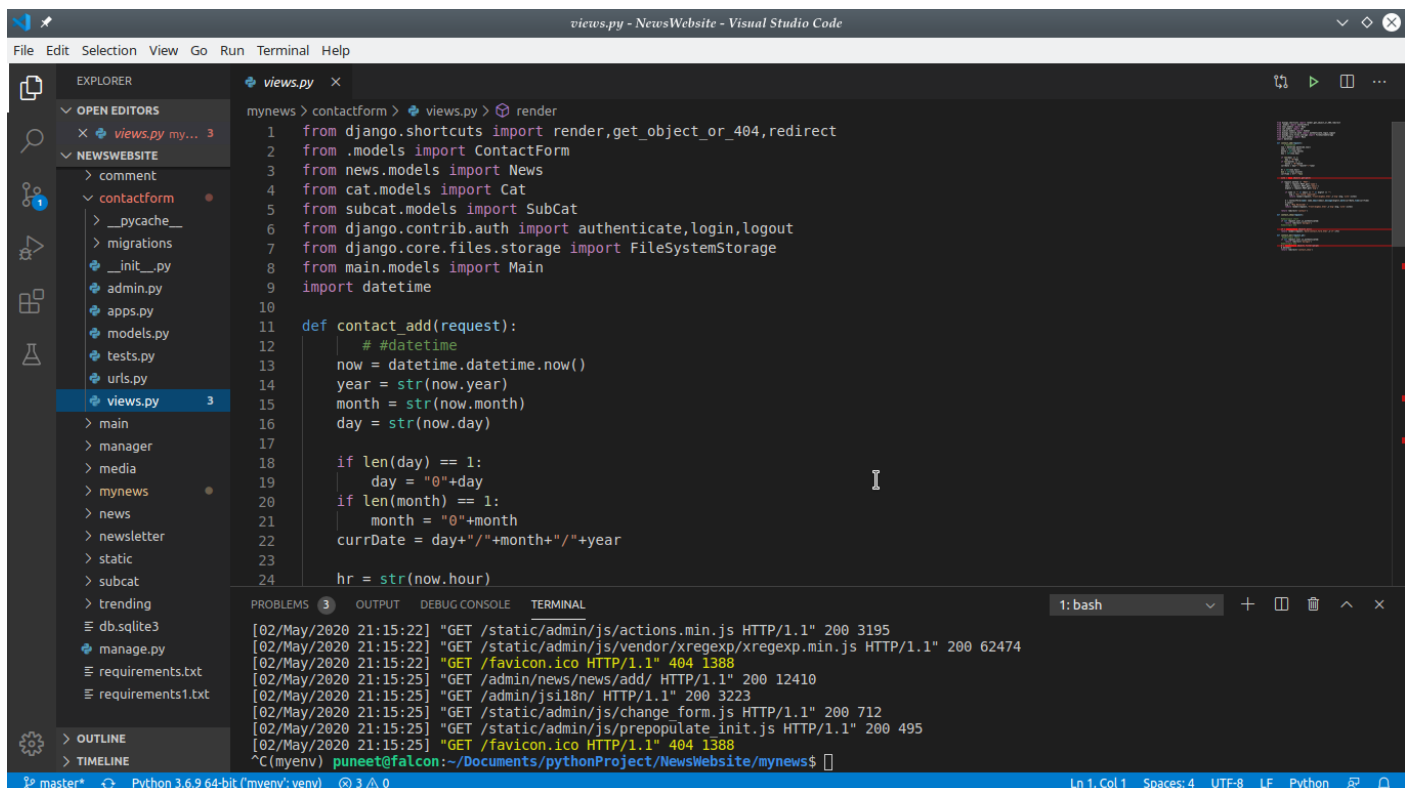
The screenshot shows the Visual Studio Code editor with a file explorer on the left and a terminal at the bottom. The file explorer shows a project structure for 'mynews' with a 'models.py' file highlighted. The 'models.py' file contains the following code:

```
1 from future import unicode_literals
2 from django.db import models
3 # Create your models here.
4
5
6 class ContactForm(models.Model):
7     name = models.CharField(default=" ", max_length=300)
8     email = models.CharField(default=" ", max_length=300)
9     message = models.TextField(default=" ")
10    date = models.CharField(default=" ", max_length=12)
11    time = models.CharField(default=" ", max_length=12)
12
13    def __str__(self):
14        return self.name
15
```

The terminal at the bottom shows a series of HTTP requests and responses, indicating that the application is running and receiving traffic. The logs include requests for static files, the favicon, and the main application page.

## 2.1.2 View

View is short form of view file. It is a file containing Python function which takes web requests and returns web responses. A response can be HTML content or XML documents or a "404 error" and so on. The logic inside the view function can be arbitrary as long as it returns the desired response. To link the view function with a particular URL we need to use a structure called URLconf which maps URLs to view functions.



The screenshot shows the Visual Studio Code interface with a Django project named 'NewsWebsite'. The Explorer sidebar on the left shows the project structure, including 'mynews', 'contactform', and 'views.py'. The main editor displays the content of 'views.py', which contains a Django view function named 'contact\_add'. The function imports necessary Django modules and models, and implements logic to handle a POST request by creating a new contact entry in the database. The terminal at the bottom shows the output of a Django development server, including GET requests for static files and POST requests for the contact form.

```
views.py - NewsWebsite - Visual Studio Code
File Edit Selection View Go Run Terminal Help

EXPLORER
  OPEN EDITORS
    views.py my... 3
  NEWSWEBSITE
    comment
    contactform
      __pycache__
      migrations
      __init__.py
      admin.py
      apps.py
      models.py
      tests.py
      urls.py
      views.py 3
    main
    manager
    media
    mynews
    news
    newsletter
    static
    subcat
    trending
    db.sqlite3
    manage.py
    requirements.txt
    requirements1.txt

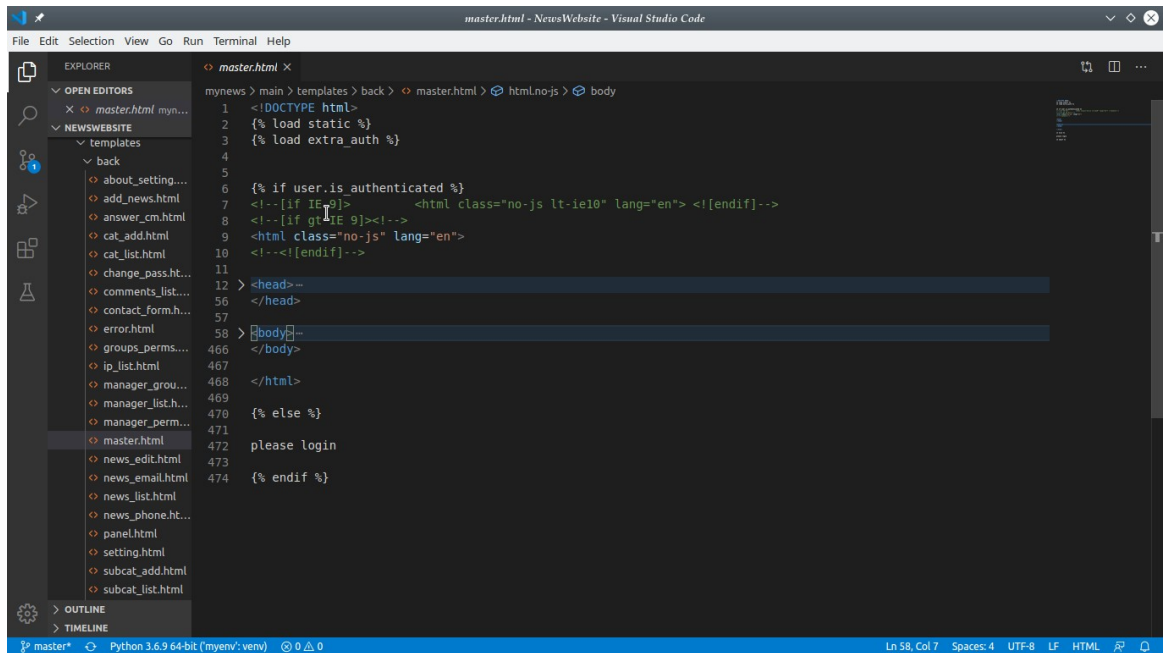
  OUTLINE
  TIMELINE

mynews > contactform > views.py > render
1 from django.shortcuts import render, get_object_or_404, redirect
2 from .models import ContactForm
3 from news.models import News
4 from cat.models import Cat
5 from subcat.models import SubCat
6 from django.contrib.auth import authenticate, login, logout
7 from django.core.files.storage import FileSystemStorage
8 from main.models import Main
9 import datetime
10
11 def contact_add(request):
12     # #datetime
13     now = datetime.datetime.now()
14     year = str(now.year)
15     month = str(now.month)
16     day = str(now.day)
17
18     if len(day) == 1:
19         day = "0"+day
20     if len(month) == 1:
21         month = "0"+month
22     currDate = day+"/"+month+"/"+year
23
24     hr = str(now.hour)
```

```
1: bash
[02/May/2020 21:15:22] "GET /static/admin/js/actions.min.js HTTP/1.1" 200 3195
[02/May/2020 21:15:22] "GET /static/admin/js/vendor/xregexp/xregexp.min.js HTTP/1.1" 200 62474
[02/May/2020 21:15:22] "GET /favicon.ico HTTP/1.1" 404 1388
[02/May/2020 21:15:25] "GET /admin/news/news/add/ HTTP/1.1" 200 12410
[02/May/2020 21:15:25] "GET /admin/js118n/ HTTP/1.1" 200 3223
[02/May/2020 21:15:25] "GET /static/admin/js/change_form.js HTTP/1.1" 200 712
[02/May/2020 21:15:25] "GET /static/admin/js/prepopulate_init.js HTTP/1.1" 200 495
[02/May/2020 21:15:25] "GET /favicon.ico HTTP/1.1" 404 1388
^C(myenv) puneeet@falcon:~/Documents/pythonProject/NewsWebsite/mynews$
```

### 2.1.3 Template

Django's template is a simple text file which can generate a text-based format like HTML and XML. The template contains variables and tags. Variables will be replaced by the result when the template is evaluated. Tags control the logic of the template. We also can modify the variables by using filters. For example, a lowercase filter can convert the variable from uppercase into lowercase.



```
1 <!DOCTYPE html>
2 {% load static %}
3 {% load extra_auth %}
4
5
6 {% if user.is_authenticated %}
7 <!--[if IE 9]> <html class="no-js lt-ie10" lang="en"> <![endif-->
8 <!--[if gt IE 9]><!-->
9 <html class="no-js" lang="en">
10 <!--<![endif-->
11
12 <head>--
13
14 </head>
15
16 <body>--
17
18 </body>
19
20 </html>
21
22 {% else %}
23
24 please login
25
26 {% endif %}
```

## 2.2 Python

Python is the language used to build the Django framework. It is a dynamic scripting language similar to Perl and Ruby. The principal author of Python is Guido van Rossum. Python supports dynamic typing and has a garbage collector for automatic memory management. Another important feature of Python is dynamic name resolution which binds the names of functions and variables during execution.



# Chapter 3

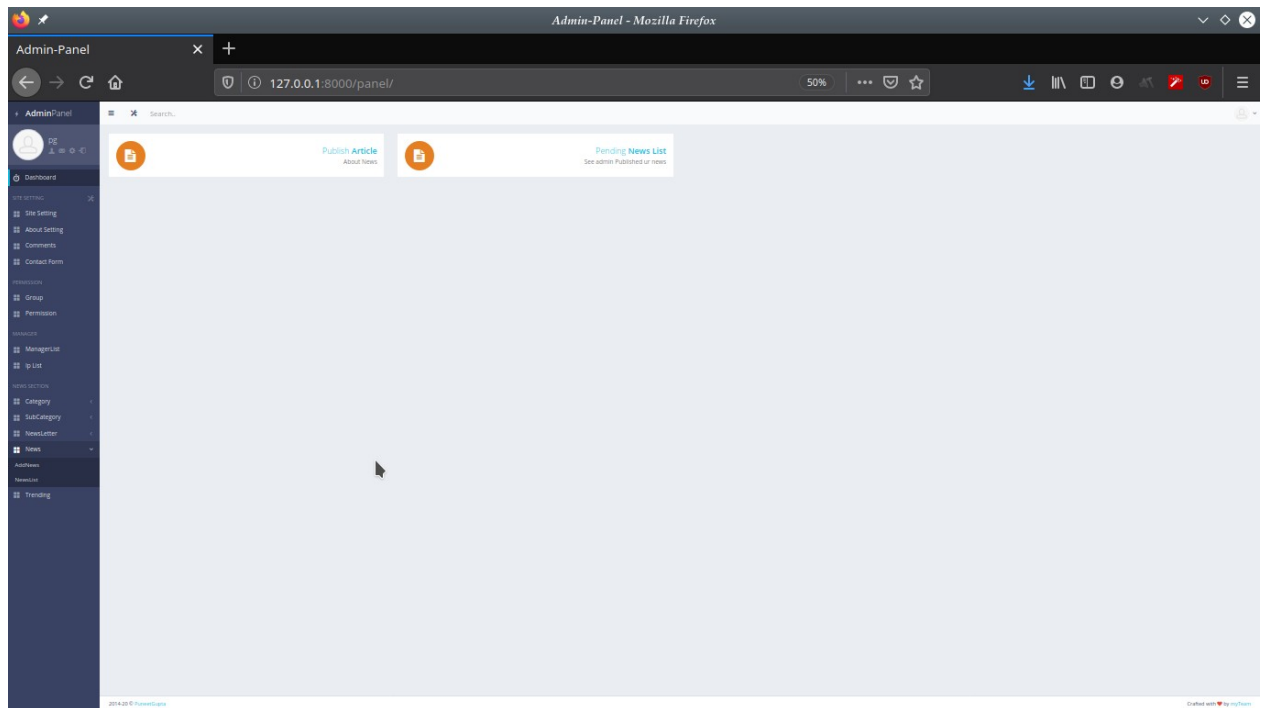
## Project overview

### 3.1 An overview of the project

Our desired result of the News Website is an integrated web-based system combining several current systems in use. It will include the following Two major components:

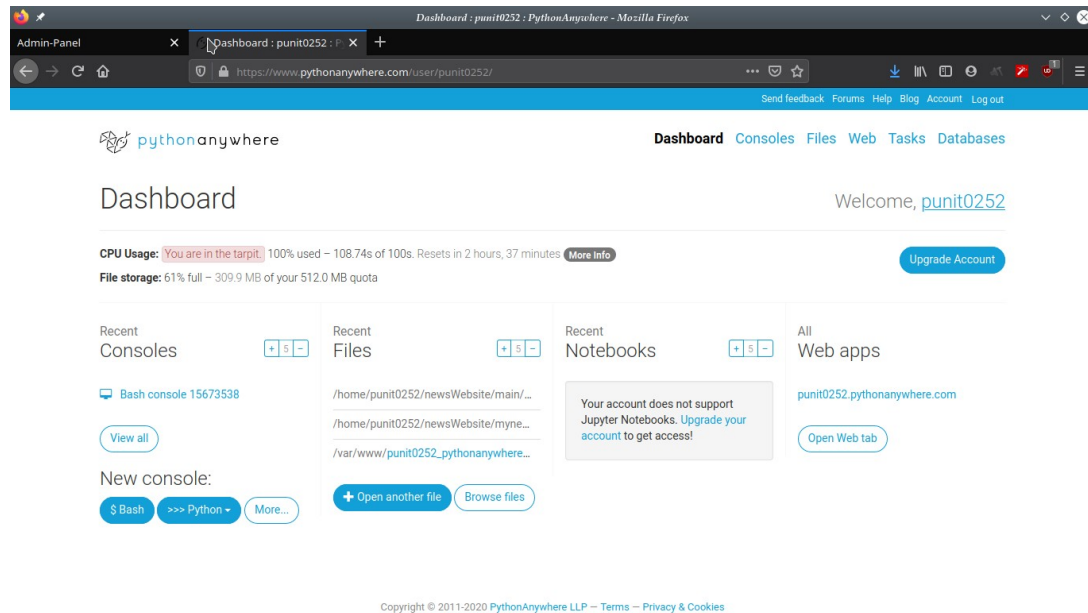
Admin Panel:

In This Admin Panel i introduce approx 12 news links in panel as u can see in below screeshot of my newswebsite and every button has add ,delete or edit functionality and advanced security feature also introduce to limit the users to get access of my functions like users is not able to see news list of adminn and users not able to publish the news only admin has ability to allow users to publish the news and comment



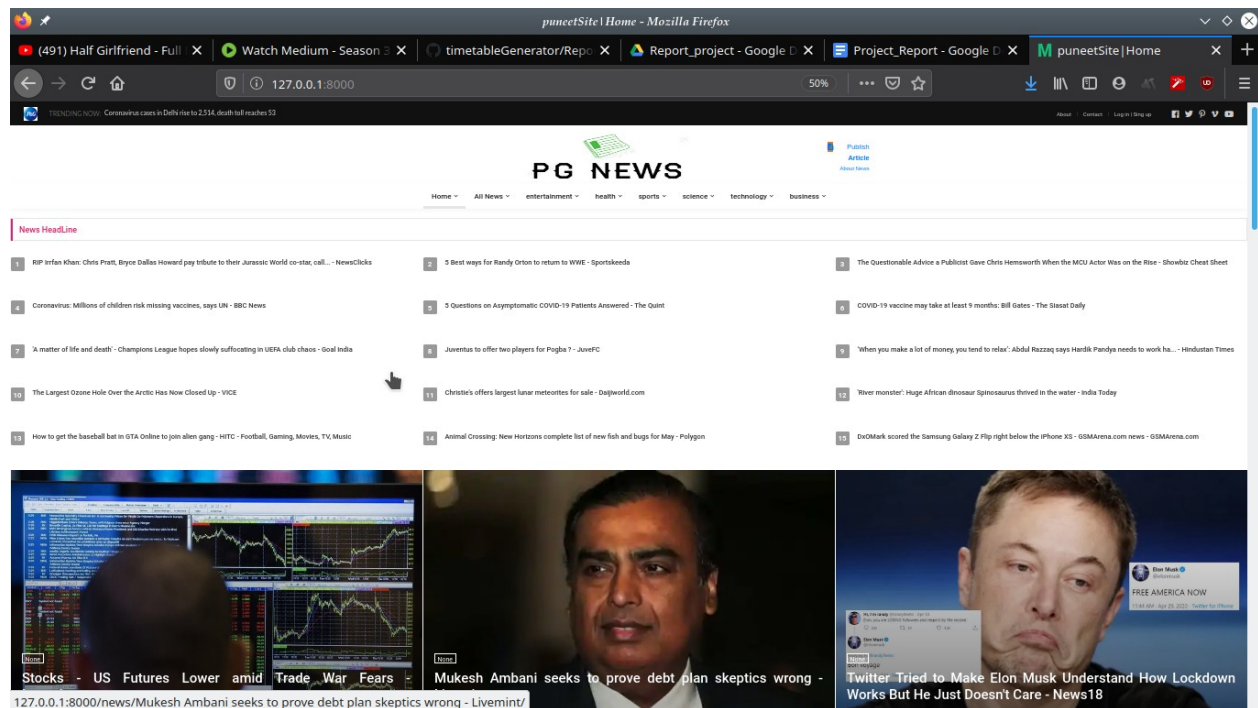
Deploy the website ::

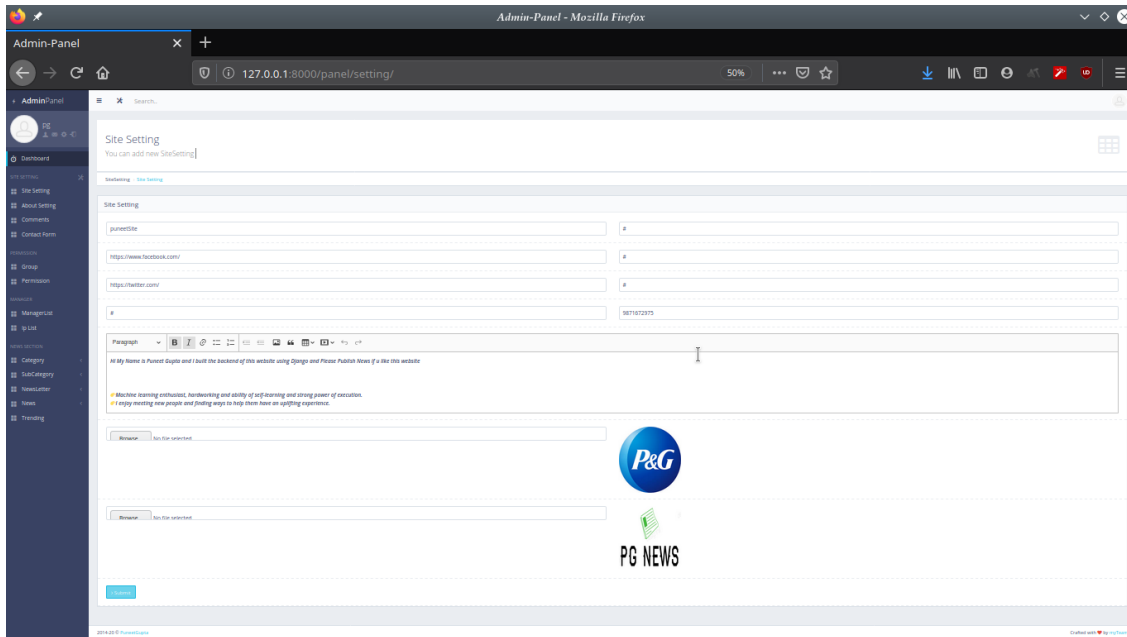
i deploy the website at pythonany where at beginner permission for 3 month free hosting



Front Gui of Website:

The Gui of my website i take help from different website and ready made templates or use wordpress to build the resposive website.





### 3.2 An overview of the Django framework development process

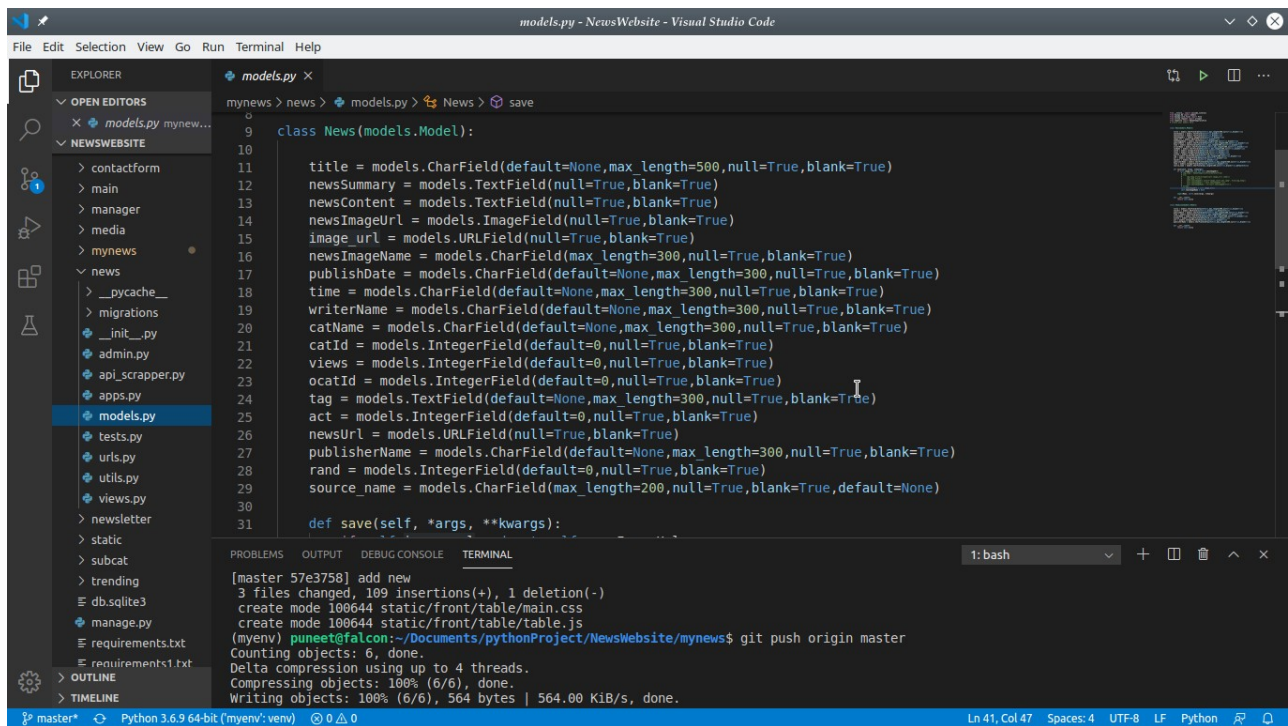
To build such a complicated web system, we need three major parts for each component: database, user interface and the functions to interact in between. Django framework provides sufficient functionalities to implement these three parts. Corresponding to database, user interface and functions in between, Django has model, template and view components to deal with each part respectively. Django's model component helps programmer to define and maintain tables in the database, while its template component helps to write html files using a combination of both html syntax and Django syntax. For those functions in between, Django provides a view component which reads the input from user interface and makes corresponding changes in the database.

## Chapter 4

# Create the database tables

To get started, we need to create a backend of the system which is the database. All the tables in the database for this news website include information for news content, title ,summary ,author name , date , time so forth. These tables are created initially when the news website is deployed. Some information is input into the database at the beginning, However, most information will be inserted or updated in the database dynamically (For example, creating a group). Every time we want to create a new group, we will insert a tuple into the Group table to make the database consistent with the real world.

To have a Group table in the database, we first need to choose which database we are going to use. Django supports almost all popular databases such as mysql, sqlite3, and oracle. The one we used for this news website is sqlite3. We only need to write one sentence to setup the database:



The screenshot shows the Visual Studio Code editor with the Django project 'NewsWebsite' open. The Explorer sidebar on the left shows the project structure, with 'models.py' selected under the 'news' directory. The main editor window displays the content of 'models.py', which defines a Django model named 'News'. The model includes several fields: 'title' (CharField), 'newsSummary' (TextField), 'newsContent' (TextField), 'newsImageUrl' (ImageField), 'image\_url' (URLField), 'newsImageName' (CharField), 'publishDate' (CharField), 'time' (CharField), 'writerName' (CharField), 'catName' (CharField), 'catId' (IntegerField), 'views' (IntegerField), 'ocatId' (IntegerField), 'tag' (TextField), 'act' (IntegerField), 'newsUrl' (URLField), 'publisherName' (CharField), 'rand' (IntegerField), and 'source\_name' (CharField). The 'save' method is also defined. The terminal window at the bottom shows the output of a 'git push' command, indicating that the code has been successfully pushed to the 'origin master' branch.

```
models.py - NewsWebsite - Visual Studio Code
File Edit Selection View Go Run Terminal Help

EXPLORER
mynews > news > models.py > News > save
models.py mynews...
NEWSWEBSITE
  > contactform
  > main
  > manager
  > media
  > mynews
  > news
    > __pycache__
    > migrations
    > __init__.py
    > admin.py
    > api_scrapper.py
    > apps.py
    > models.py
    > tests.py
    > urls.py
    > utils.py
    > views.py
  > newsletter
  > static
  > subcat
  > trending
  > db.sqlite3
  > manage.py
  > requirements.txt
  > requirements1.txt
  > OUTLINE
  > TIMELINE

models.py
9 class News(models.Model):
10
11     title = models.CharField(default=None,max_length=500,null=True,blank=True)
12     newsSummary = models.TextField(null=True,blank=True)
13     newsContent = models.TextField(null=True,blank=True)
14     newsImageUrl = models.ImageField(null=True,blank=True)
15     image_url = models.URLField(null=True,blank=True)
16     newsImageName = models.CharField(max_length=300,null=True,blank=True)
17     publishDate = models.CharField(default=None,max_length=300,null=True,blank=True)
18     time = models.CharField(default=None,max_length=300,null=True,blank=True)
19     writerName = models.CharField(default=None,max_length=300,null=True,blank=True)
20     catName = models.CharField(default=None,max_length=300,null=True,blank=True)
21     catId = models.IntegerField(default=0,null=True,blank=True)
22     views = models.IntegerField(default=0,null=True,blank=True)
23     ocatId = models.IntegerField(default=0,null=True,blank=True)
24     tag = models.TextField(default=None,max_length=300,null=True,blank=True)
25     act = models.IntegerField(default=0,null=True,blank=True)
26     newsUrl = models.URLField(null=True,blank=True)
27     publisherName = models.CharField(default=None,max_length=300,null=True,blank=True)
28     rand = models.IntegerField(default=0,null=True,blank=True)
29     source_name = models.CharField(max_length=200,null=True,blank=True,default=None)
30
31     def save(self, *args, **kwargs):
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DATABASE_ENGINE = 'sqlite3'
```

Next, we create the Group table in the database. Django uses a class called `model[R]` to represent the database table schema. To create a table we just need to write a new class derived from `model` class. Here is an example:

This piece of code creates a table called `group` which stores the information of groups in courses. The table has three columns: `name` corresponding to the name of the group; `manager` corresponding to the group manager; `news` corresponding to my newswebsite

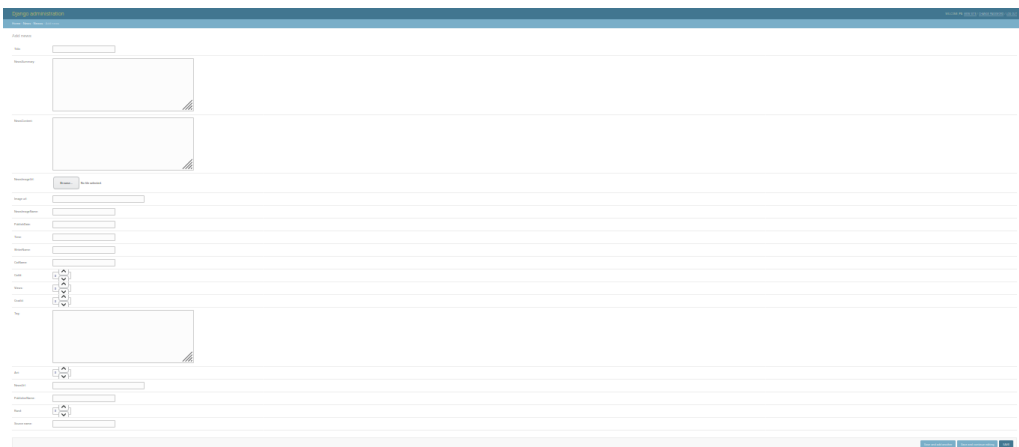


Figure : Group table in database

The group component has two tables of its own, both of which are used in the creating group process. They are Group table which has already been introduced above, and GroupMember table which represents the memberships of students in the group. I will skip the details of the GroupMember table since it has a similar structure to the Group table.

## Chapter 5

# Conclusion

The Django framework gives us a simple and reliable way to create the News Website. It provides powerful functionalities and concise syntax to help programmers deal with the database, the web page and the inner logic. The experience of developing the group component in the system also helped me learning a lot of website development with Django. Within the Django framework, we have successfully accomplished the requirements of the system.

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