ADNAN MENDERES UNIVERSITY
COMPUTER ENGINEERING
PROJECT REPORT

Lecture:

Cloud Computing and Virtualization

Subject:

Running a simple web interface on the cloud platform with use of web application framework (django etc.) on a cloud platform to perform simple word count job.

Advisor:

Dr. Lecturer Hüseyin ABACI

Group Members:

Onur ANDİÇ – 171805028 (Leader)

Ersu KARPUZ – 171805043

Uygar Utku ÖZTÜRK – 171805046

Atakan ÜNER – 171805011

Content

1-) Distribution of Tasks
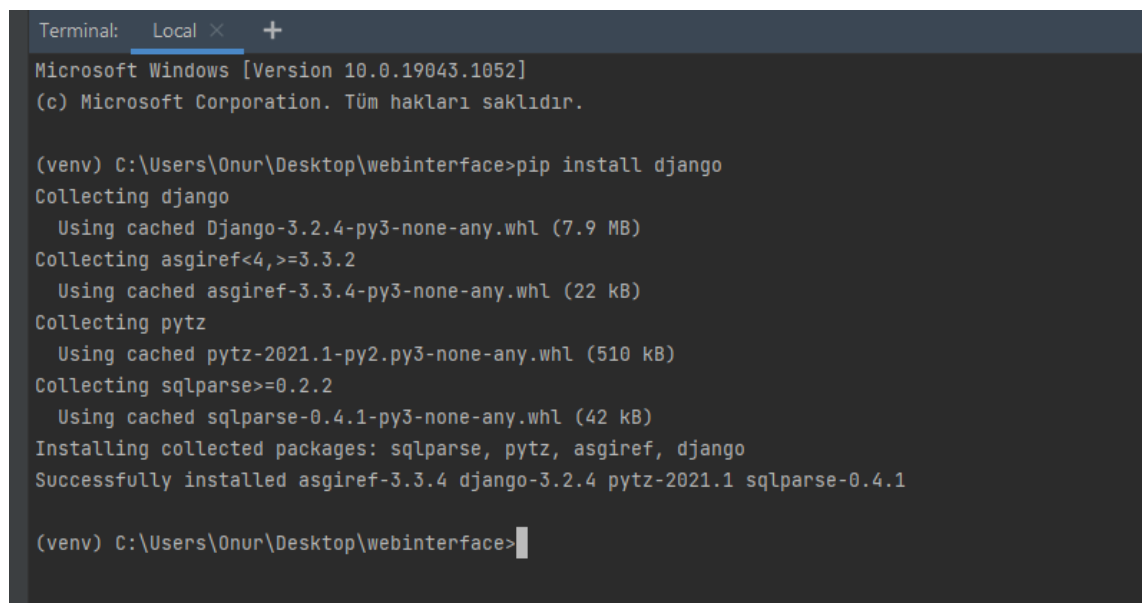
Coding : Atakan Üner-Onur Andiç

Report Preparation: Uygar Utku Öztürk

Presentation and Resource Research: Ersu Karpuz

2-) Downloading Django[1]

To download django, the code in figure 1 must be written to the terminal.

-pip install django

```
Terminal:    Local ×    +
Microsoft Windows [Version 10.0.19043.1052]
(c) Microsoft Corporation. Tüm hakları saklıdır.

(venv) C:\Users\Onur\Desktop\webinterface>pip install django
Collecting django
  Using cached Django-3.2.4-py3-none-any.whl (7.9 MB)
Collecting asgiref<4,>=3.3.2
  Using cached asgiref-3.3.4-py3-none-any.whl (22 kB)
Collecting pytz
  Using cached pytz-2021.1-py2.py3-none-any.whl (510 kB)
Collecting sqlparse>=0.2.2
  Using cached sqlparse-0.4.1-py3-none-any.whl (42 kB)
Installing collected packages: sqlparse, pytz, asgiref, django
Successfully installed asgiref-3.3.4 django-3.2.4 pytz-2021.1 sqlparse-0.4.1

(venv) C:\Users\Onur\Desktop\webinterface>
```
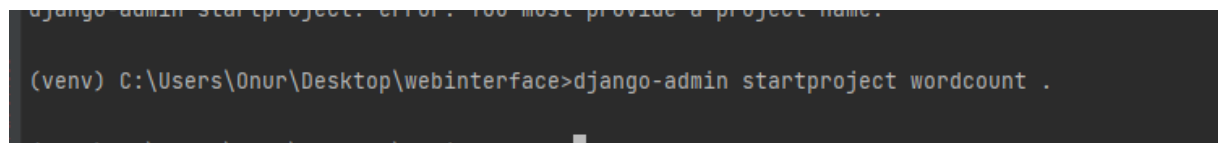
(figure 1)

3-) Creating Django Project[2]

   To create a project in django, the command in figure 2 should be written to the terminal
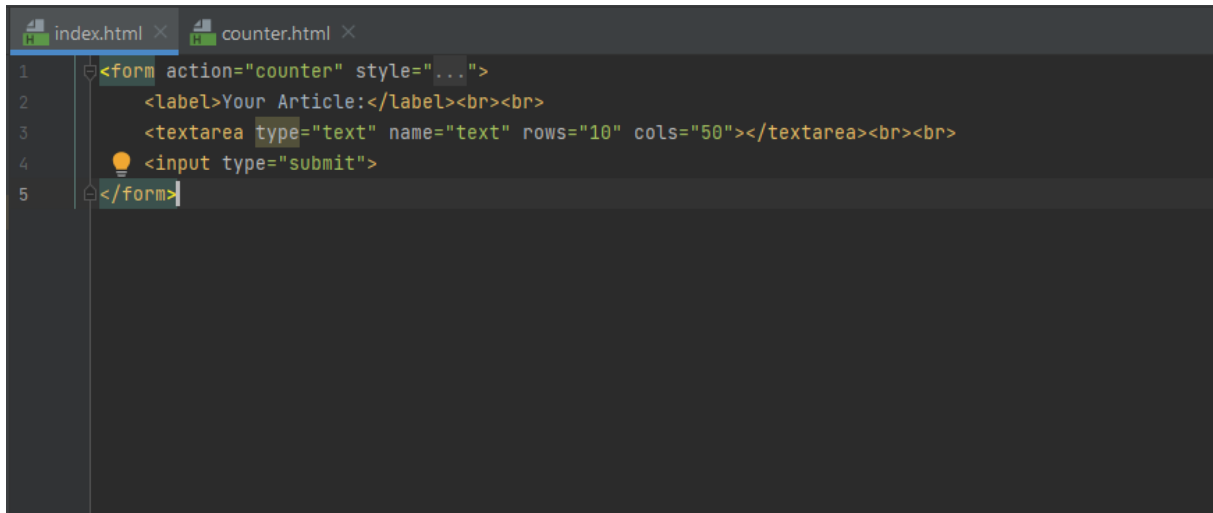
-django-admin startproject wordcount .

```
django-admin startproject: error: You must provide a project name.

(venv) C:\Users\Onur\Desktop\webinterface>django-admin startproject wordcount .
```

(figure 2)

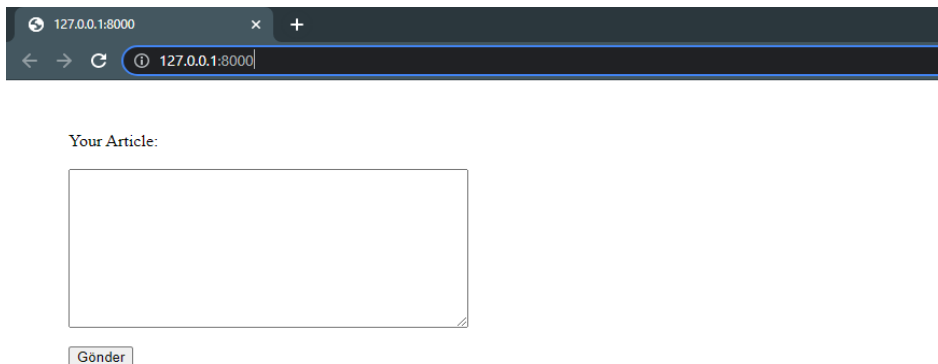# 4-) Create Word Count Application[2]

4.1 Creating Templates

After running Figure 3 (Index.html), the output is as in figure 4.


```html
<form action="counter" style="...">
    <label>Your Article:</label><br><br>
    <textarea type="text" name="text" rows="10" cols="50"></textarea><br><br>
    <input type="submit">
</form>
```
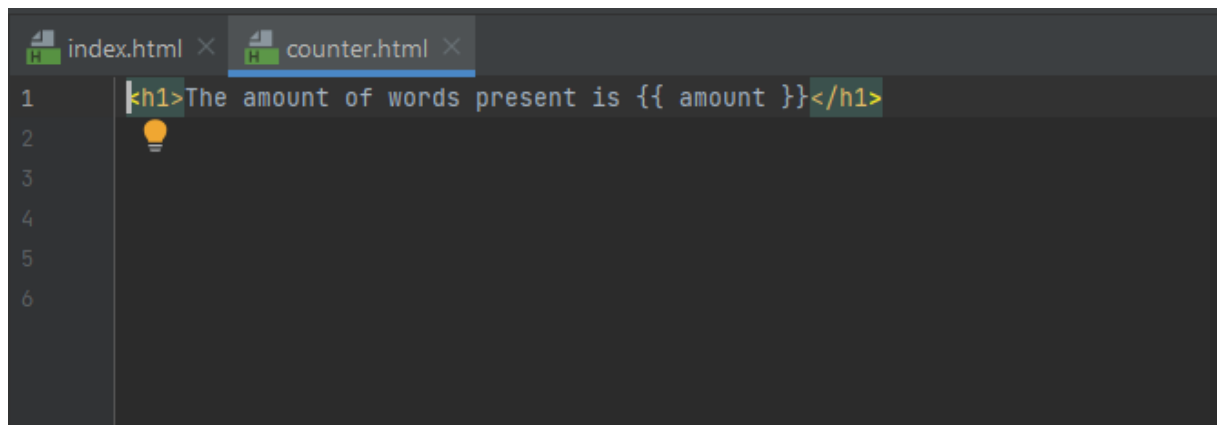
(figure 3)

(figure 4)

After running figure 5 (counter.html), the output is as in figure 6.
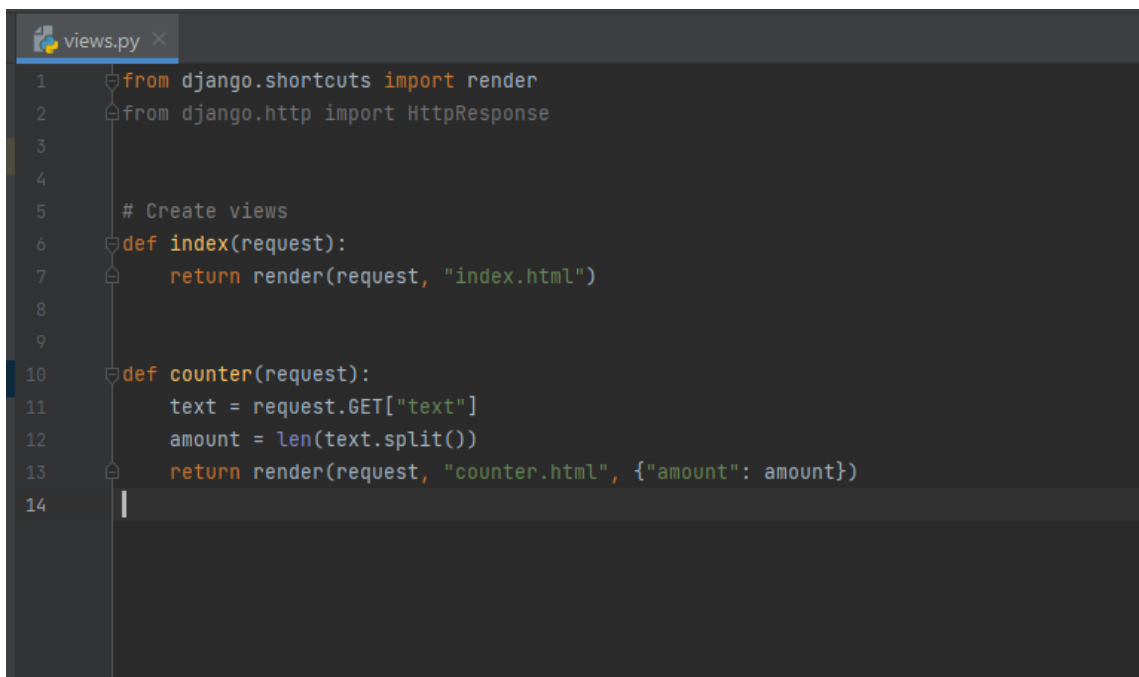

(figure 5)

(figure 6)

4.2 Creating views.py

Functions required for Django to get and post to html have been created. Word counting was performed in the counter function using the input entered on the index.html page. (figure 7)
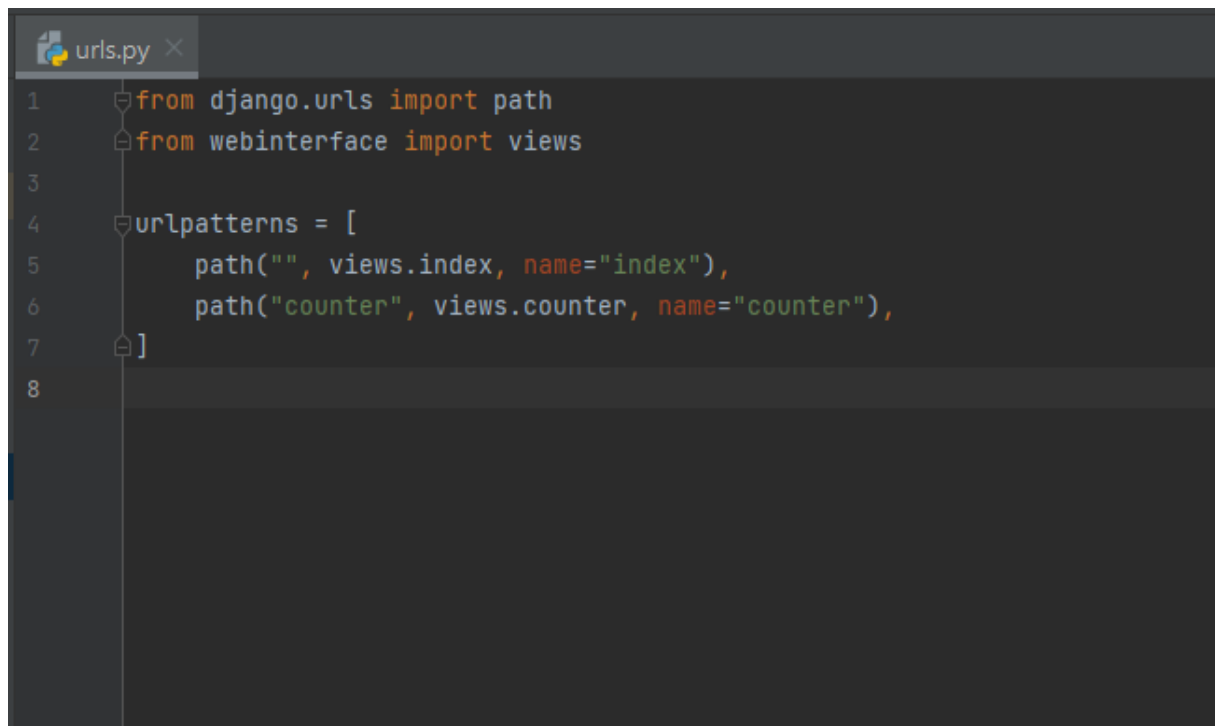
```python
from django.shortcuts import render
from django.http import HttpResponse


# Create views
def index(request):
    return render(request, "index.html")


def counter(request):
    text = request.GET["text"]
    amount = len(text.split())
    return render(request, "counter.html", {"amount": amount})
```

(figure 7)

4.3 Creating urls.py

Url models created (figure 8)
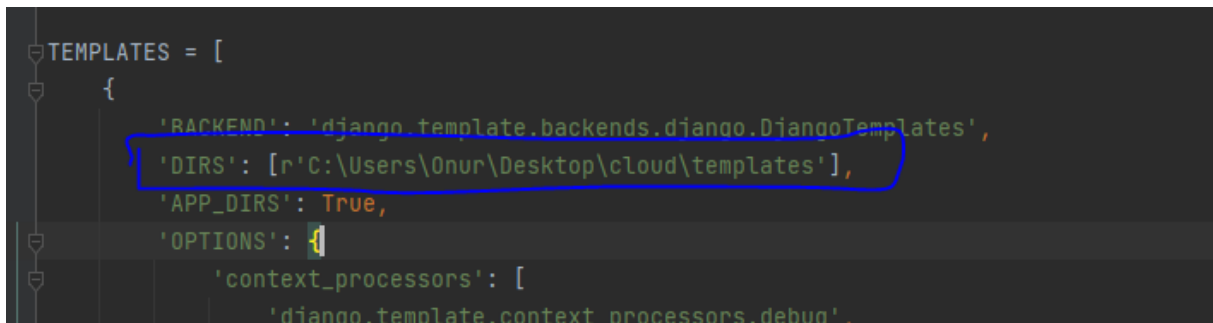
```python
from django.urls import path
from webinterface import views


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

(figure 8)

4.4 Edited Django's settings.py

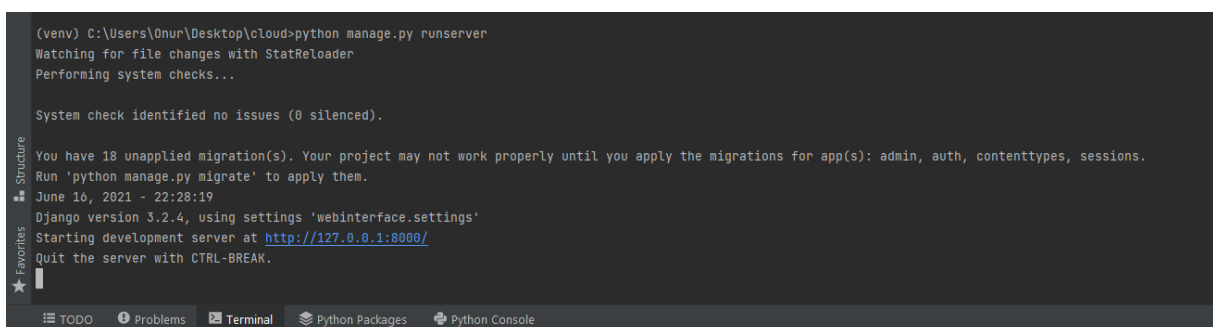Made django recognize html files using the blue marked location in figure 9

(figure 9)

4.5 Running Application

A temporary server connection has been created to run the project.
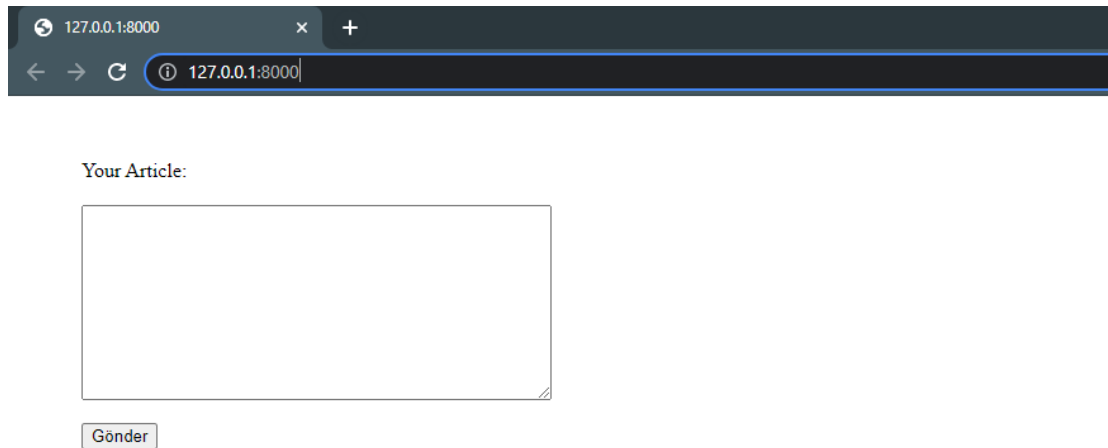
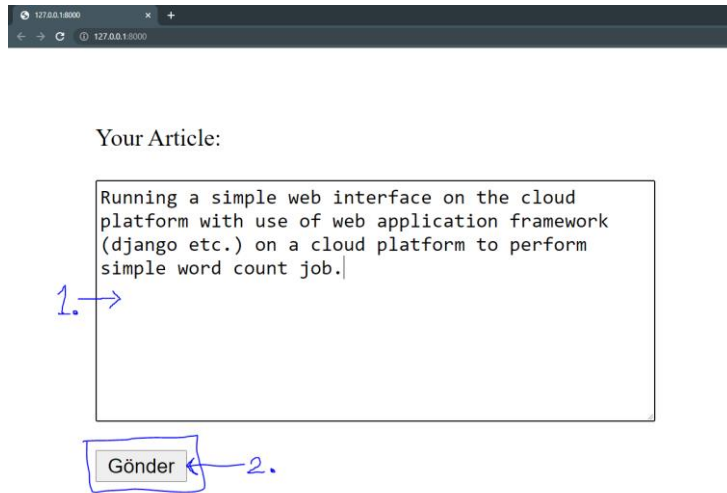-python manage.py runserver

(figure 10)

Went to http://127.0.0.1:8000/ from the browser (figure 4)
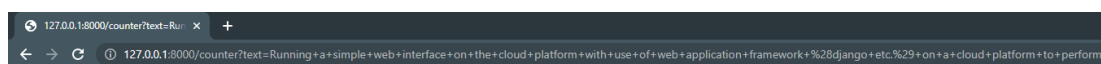

(figure 4)

The text to be learned the number of words is written in the field
number 1 and the send button is pressed

(figure 11)

After following the steps in Figure 11, the result in Figure 12 is
obtained.

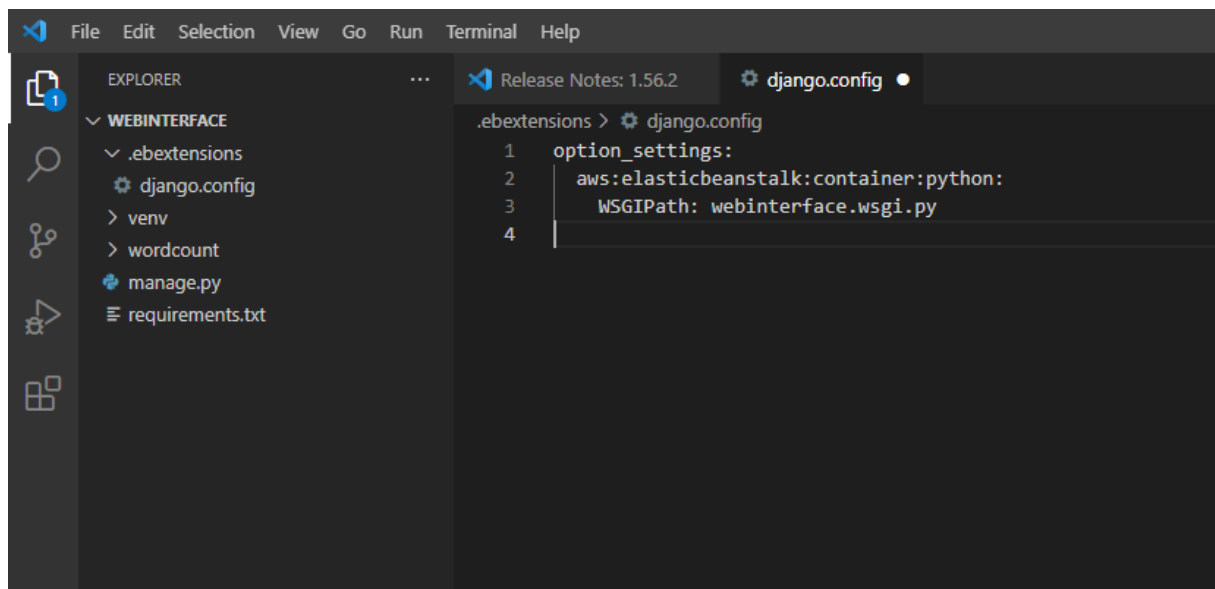

The amount of words present is 27

(figure 12)

5-) Deploy Django Website to Amazon Web Services (Elastic Beanstalk) [3], [4]

5.1 Files that need to be uploaded to AWS Elastic Beanstalk Environment

We did the configurations required to use Elastic Beanstalk (figure 13-14) then we uploaded Project files to the environment using AWS ID and AWS Secret Key (figure 15-16)


```
(venv) C:\Users\Onur\Desktop\webinterface>pip freeze > requirements.txt

(venv) C:\Users\Onur\Desktop\webinterface>mkdir .ebextensions
```

(figure 13)

(figure 14)

(figure 15)

(figure 16)

(figure 17)

5.2 Running Project

http://django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com/

The screenshots of the running Project (figure 18-19)
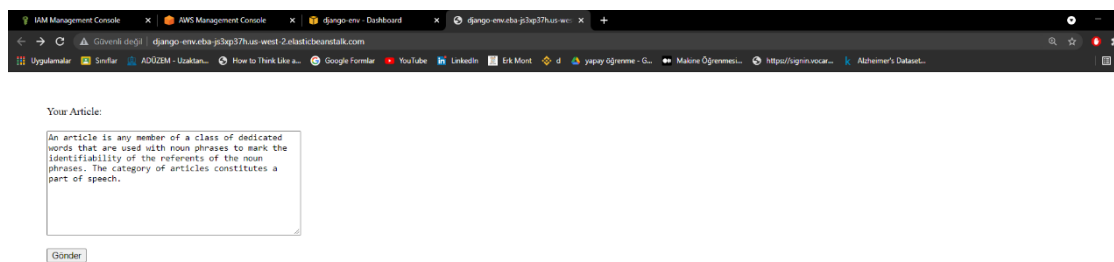
(figure 18)
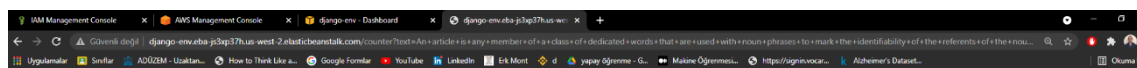
(figure 19)

6-) Errors and Solutions

Error 1 : Django was not detecting templates [5]

Solution 2 : The problem was solved by adding the blue marked command in figure 9
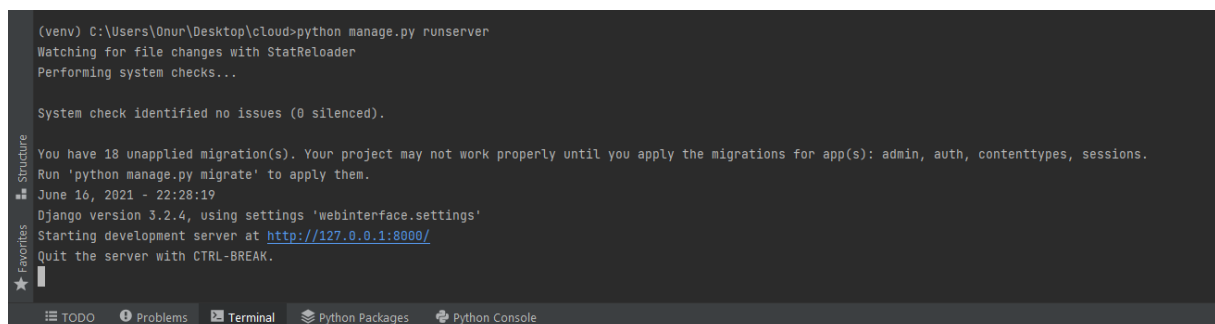
(figure 9)

Error 2 :Functions on the pages did not work because the html pages were not linked

Solution 2 : The problem was solved by running the "python manage.py runserver" code in figure 10 and creating a temporary server.

(figure 10)

Error 3 : Authorization Error

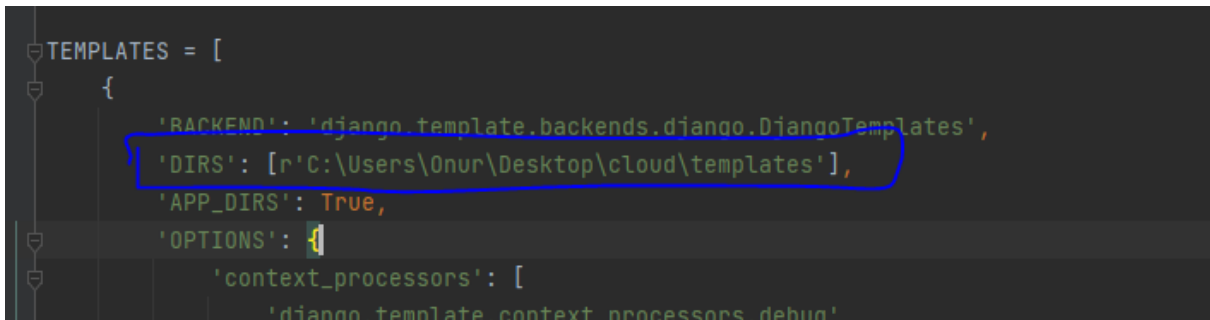*Solution 3 : The problem occured because our aws educate account has no permisson to run elasticbeanstalk environment (figure 20 and figure 21). The problem was solved by creating new user account and doing the same steps (figure 22).*

(figure 20)

(figure 21)

```
C:\Users\unera\Desktop\wordcount>eb init -p python-3.6 wordcount
You have not yet set up your credentials or your credentials are incorrect
You must provide your credentials.
(aws-access-id): AKIAYJ7JBW7LHB5JBQMW
(aws-secret-key): mXf3rGuDok3/3qZvfTeljoK0NbTWxBJxHF4LmuhL
Application wordcount has been created.
```

(figure 22)

Error 4 : Disallowed Host

Solution 4 : We could not get the url link without deploying our project to aws so after we deployed and get the link we add url to ALLOWED_HOST in settings.py(figure 24). Then we deployed the project again(figure 25).

DisallowedHost at /

Invalid HTTP_HOST header: 'django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com'. You may need to add 'django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com' to ALLOWED_HOSTS.

Request Method:	GET
Request URL:	http://django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com/
Django Version:	2.1.1
Exception Type:	DisallowedHost
Exception Value:	Invalid HTTP_HOST header: 'django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com'. You may need to add 'django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com' to ALLOWED_HOSTS.
Exception Location:	/opt/python/run/venv/local/lib/python3.6/site-packages/django/http/request.py in get_host, line 106
Python Executable:	/opt/python/run/venv/bin/python3
Python Version:	3.6.12
Python Path:	['/opt/python/current/app',
	'',
	'/opt/python/run/venv/local/lib64/python3.6/site-packages',
	'/opt/python/run/venv/local/lib/python3.6/site-packages',
	'/opt/python/run/venv/lib64/python3.6',
	'/opt/python/run/venv/lib/python3.6',
	'/opt/python/run/venv/lib64/python3.6/site-packages',
	'/opt/python/run/venv/lib/python3.6/site-packages',
	'/opt/python/run/venv/lib64/python3.6/lib-dynload',
	'/usr/lib64/python3.6',
	'/usr/lib/python3.6']
Server time:	Thu, 17 Jun 2021 22:24:58 +0000

(figure 23)

```
ALLOWED_HOSTS = ['django-env.eba-js3xp37h.us-west-2.elasticbeanstalk.com']
```

(figure 24)

```
C:\Users\unera\Desktop\wordcount>eb deploy
Creating application version archive "app-210618_012802".
Uploading: [#############################################] 100% Done...
2021-06-17 22:29:11    INFO    Environment update is starting.
2021-06-17 22:29:16    INFO    Deploying new version to instance(s).
2021-06-17 22:29:42    INFO    New application version was deployed to running EC2 instances.
2021-06-17 22:29:42    INFO    Environment update completed successfully.
```

(figure 25)

7-) References

[1] https://www.djangoproject.com

[2] https://www.youtube.com/watch?v=8w_p9aXKPy8&t=391s

[3] https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create-deploy-python-django.html

[4] https://www.youtube.com/watch?v=51YwXvJ9LOE&ab_channel=BenjaminCarlson

[5] https://stackoverflow.com/questions/1926049/django-templatedoesnotexist