

## Create web UI for Crop recommendation

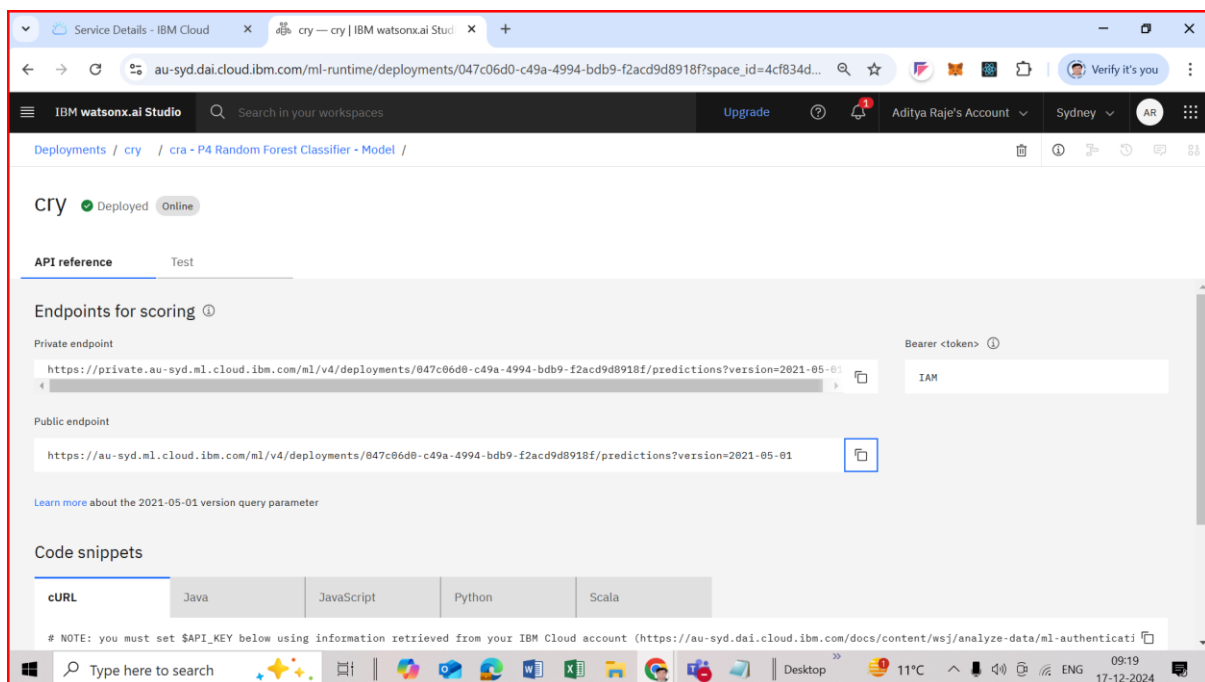
Step1- Develop, save and deploy machine learning model for crop recommendation using watsonx.ai studio as per the steps mention in PDF1

Step2- From cloud.ibm.com use the API key and model end point

Login – Manage – Access (IAM) – API Keys – Create – Name (croprecommendation) – Create – Copy/Download (Save this API key on notepad)

Step3 – From cloud.ibm.com copy **Public endpoint** of deployed model

<https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/047c06d0-c49a-4994-bdb9-f2acd9d8918f/predictions?version=2021-05-01>



Step- create folder webuicroprecommendation

F:\SB4C\_BootCamp\_Content\webuicroprecommendation

Step- Open command prompt and reach to folder location

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

F:\SB4C_BootCamp_Content\webuicroprecommendation>
```

Step- install python

Step – install Django

pip install Django

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

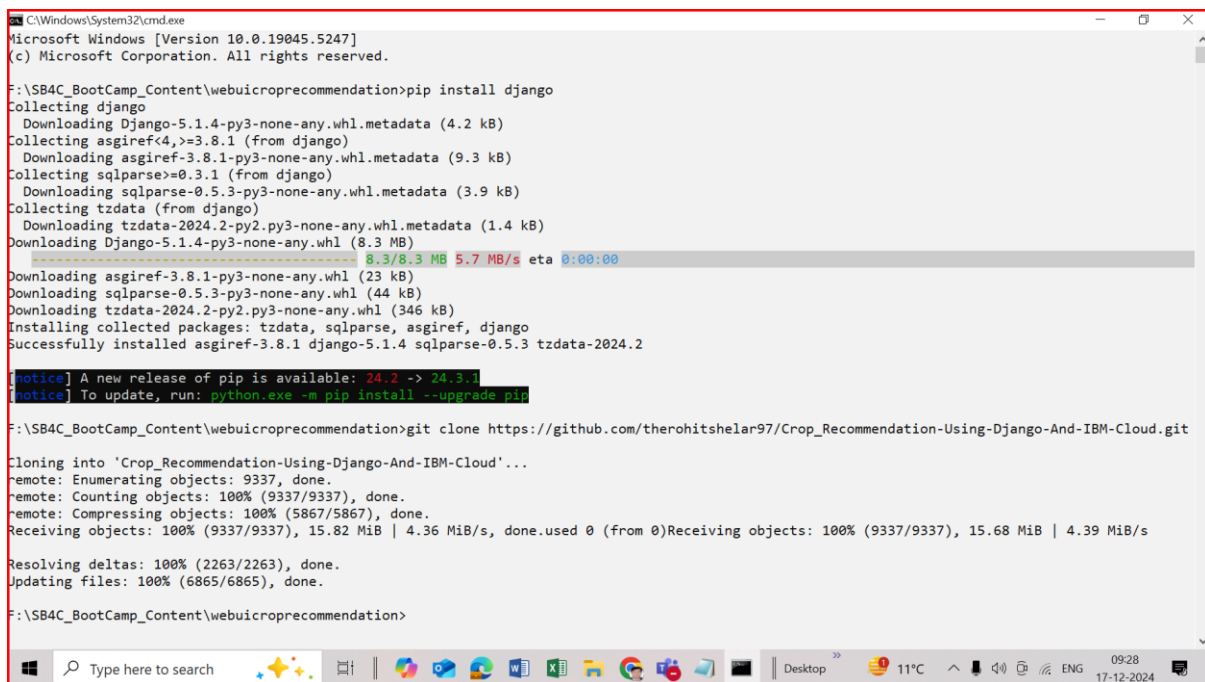
F:\SB4C_BootCamp_Content\webuicroprecommendation>pip install django
Collecting django
  Downloading Django-5.1.4-py3-none-any.whl.metadata (4.2 kB)
Collecting asgiref<4,>=3.8.1 (from django)
  Downloading asgiref-3.8.1-py3-none-any.whl.metadata (9.3 kB)
Collecting sqlparse>=0.3.1 (from django)
  Downloading sqlparse-0.5.3-py3-none-any.whl.metadata (3.9 kB)
Collecting tzdata (from django)
  Downloading tzdata-2024.2-py2.py3-none-any.whl.metadata (1.4 kB)
Downloading Django-5.1.4-py3-none-any.whl (8.3 MB)
----- 8.3/8.3 MB 5.7 MB/s eta 0:00:00
Downloading asgiref-3.8.1-py3-none-any.whl (23 kB)
Downloading sqlparse-0.5.3-py3-none-any.whl (44 kB)
Downloading tzdata-2024.2-py2.py3-none-any.whl (346 kB)
Installing collected packages: tzdata, sqlparse, asgiref, django
Successfully installed asgiref-3.8.1 django-5.1.4 sqlparse-0.5.3 tzdata-2024.2

[notice] A new release of pip is available: 24.2 -> 24.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

F:\SB4C_BootCamp_Content\webuicroprecommendation>
```

Step- clone the project from github

git clone [https://github.com/therohitshelar97/Crop\\_Recommendation-Using-Django-And-IBM-Cloud.git](https://github.com/therohitshelar97/Crop_Recommendation-Using-Django-And-IBM-Cloud.git)



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

F:\SB4C_BootCamp_Content\webuicroprecommendation>pip install django
Collecting django
  Downloading Django-5.1.4-py3-none-any.whl.metadata (4.2 kB)
Collecting asgiref<4,>=3.8.1 (from django)
  Downloading asgiref-3.8.1-py3-none-any.whl.metadata (9.3 kB)
Collecting sqlparse>=0.3.1 (from django)
  Downloading sqlparse-0.5.3-py3-none-any.whl.metadata (3.9 kB)
Collecting tzdata (from django)
  Downloading tzdata-2024.2-py2.py3-none-any.whl.metadata (1.4 kB)
  Downloading Django-5.1.4-py3-none-any.whl (8.3 MB)
    ----- 8.3/8.3 MB 5.7 MB/s eta 0:00:00
  Downloading asgiref-3.8.1-py3-none-any.whl (23 kB)
  Downloading sqlparse-0.5.3-py3-none-any.whl (44 kB)
  Downloading tzdata-2024.2-py2.py3-none-any.whl (346 kB)
Installing collected packages: tzdata, sqlparse, asgiref, django
Successfully installed asgiref-3.8.1 django-5.1.4 sqlparse-0.5.3 tzdata-2024.2

[notice] A new release of pip is available: 24.2 -> 24.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

F:\SB4C_BootCamp_Content\webuicroprecommendation>git clone https://github.com/therohitshelar97/Crop_Recommendation-Using-Django-And-IBM-Cloud.git
Cloning into 'Crop_Recommendation-Using-Django-And-IBM-Cloud'...
remote: Enumerating objects: 9337, done.
remote: Counting objects: 100% (9337/9337), done.
remote: Compressing objects: 100% (5867/5867), done.
Receiving objects: 100% (9337/9337), 15.82 MiB | 4.36 MiB/s, done, used 0 (from 0)
Resolving deltas: 100% (2263/2263), done.
Updating files: 100% (6865/6865), done.

F:\SB4C_BootCamp_Content\webuicroprecommendation>
```

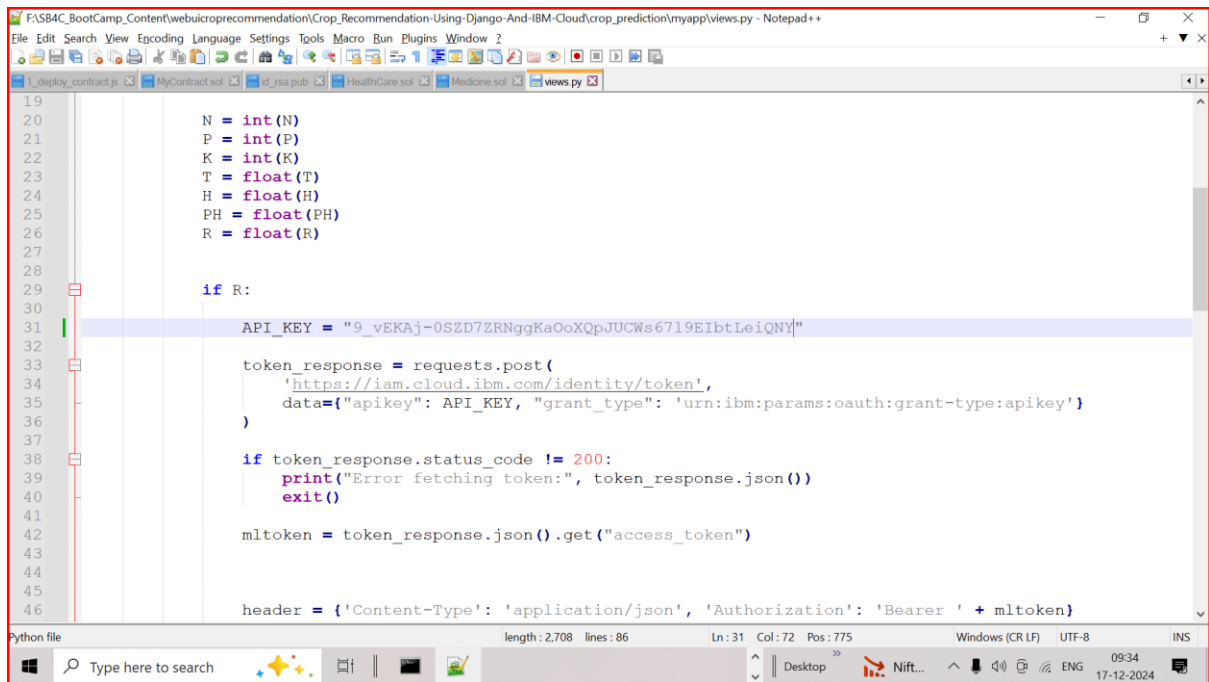
Step – reach to folder location \webuicroprecommendation\Crop\_Recommendation-Using-Django-And-IBM-Cloud\crop\_prediction

cd F:\SB4C\_BootCamp\_Content\webuicroprecommendation\Crop\_Recommendation-Using-Django-And-IBM-Cloud\crop\_prediction

step- open views.py in editor

webuicroprecommendation\Crop\_Recommendation-Using-Django-And-IBM-Cloud\crop\_prediction\myapp\views.py

Paste your API Key into variable API\_KEY=""



```
19
20     N = int(N)
21     P = int(P)
22     K = int(K)
23     T = float(T)
24     H = float(H)
25     PH = float(PH)
26     R = float(R)
27
28
29     if R:
30
31         API_KEY = "9_vEKaj-0SZD7ZRNggKaOoXQpJUCWs6719EIbtLeiQNY"
32
33         token_response = requests.post(
34             'https://iam.cloud.ibm.com/identity/token',
35             data={"apikey": API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'}
36         )
37
38         if token_response.status_code != 200:
39             print("Error fetching token:", token_response.json())
40             exit()
41
42         mltoken = token_response.json().get("access_token")
43
44
45
46         header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}
```

Step -Paste model Public endpoint in the views.py file

```
response_scoring = requests.post(

    ' https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/047c06d0-c49a-4994-bdb9-
f2acd9d8918f/predictions?version=2021-05-01',

    json=payload_scoring,

    headers=header,

)
```

Save file views.py

Return to cmd

Step –

pip install requests

```
C:\Windows\System32\cmd.exe
ModuleNotFoundError: No module named 'requests'

F:\SB4C_BootCamp_Content\webuicroprecommendation\Crop_Recommendation-Using-Django-And-IBM-Cloud\crop_prediction>pip install requests
Collecting requests
  Downloading requests-2.32.3-py3-none-any.whl.metadata (4.6 kB)
Collecting charset-normalizer<4,>=2 (from requests)
  Downloading charset_normalizer-3.4.0-cp313-cp313-win_amd64.whl.metadata (34 kB)
Collecting idna<4,>=2.5 (from requests)
  Downloading idna-3.10-py3-none-any.whl.metadata (10 kB)
Collecting urllib3<3,>=1.21.1 (from requests)
  Downloading urllib3-2.2.3-py3-none-any.whl.metadata (6.5 kB)
Collecting certifi>=2017.4.17 (from requests)
  Downloading certifi-2024.12.14-py3-none-any.whl.metadata (2.3 kB)
Downloading requests-2.32.3-py3-none-any.whl (64 kB)
Downloading certifi-2024.12.14-py3-none-any.whl (164 kB)
Downloading charset_normalizer-3.4.0-cp313-cp313-win_amd64.whl (102 kB)
Downloading idna-3.10-py3-none-any.whl (70 kB)
Downloading urllib3-2.2.3-py3-none-any.whl (126 kB)
Installing collected packages: urllib3, idna, charset-normalizer, certifi, requests
Successfully installed certifi-2024.12.14 charset-normalizer-3.4.0 idna-3.10 requests-2.32.3 urllib3-2.2.3

[notice] A new release of pip is available: 24.2 -> 24.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

F:\SB4C_BootCamp_Content\webuicroprecommendation\Crop_Recommendation-Using-Django-And-IBM-Cloud\crop_prediction>
```

Step- run project

python manage.py runserver

```
C:\Windows\System32\cmd.exe
Successfully installed asgiref-3.8.1 django-5.1.4 sqlparse-0.5.3 tzdata-2024.2

[notice] A new release of pip is available: 24.2 -> 24.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

F:\SB4C_BootCamp_Content\webuicroprecommendation>git clone https://github.com/therohitshelar97/Crop_Recommendation-Using-Django-And-IBM-Cloud.git
Cloning into 'Crop_Recommendation-Using-Django-And-IBM-Cloud'...
remote: Enumerating objects: 9337, done.
remote: Counting objects: 100% (9337/9337), done.
remote: Compressing objects: 100% (5867/5867), done.
remote: Receiving objects: 100% (9337/9337), 15.68 MiB | 4.36 MiB/s, done.
Resolving deltas: 100% (2263/2263), done.
Updating files: 100% (6865/6865), done.

F:\SB4C_BootCamp_Content\webuicroprecommendation>cd F:\SB4C_BootCamp_Content\webuicroprecommendation\Crop_Recommendation-Using-Django-And-IBM-Cloud\crop_prediction
F:\SB4C_BootCamp_Content\webuicroprecommendation\Crop_Recommendation-Using-Django-And-IBM-Cloud\crop_prediction>python manage.py runserver
```

```
C:\Windows\System32\cmd.exe - python manage.py runserver
[notice] A new release of pip is available: 24.2 -> 24.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

F:\SB4C_BootCamp_Content\webuicroprecommendation\Crop_Recommendation-Using-Django-And-IBM-Cloud\crop_prediction>python manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).

You have 18 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, sessions.
Run 'python manage.py migrate' to apply them.
December 17, 2024 - 09:40:20
Django version 5.1.4, using settings 'crop_prediction.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
```

Open browser <http://127.0.0.1:8000>

Crop Recommendation System

Nitrogen(N):

Phosphorous(P):

Potassium(K):

Temperature(T) :

Humidity(H) :

PH :

RainFalls :

Give value

Crop Recommendation System

Nitrogen(N):  
38

Phosphorous(P):  
19

Potassium(K):  
31

Temperature(T) :  
34.73824

Humidity(H) :  
49.08864

PH :  
5.855119

RainFalls :  
90.65022

Predict

It will show output Mango

Crop Recommendation System

Nitrogen(N):  
Enter Nitrogen value

Phosphorous(P):  
Enter Phosphorous value

Potassium(K):  
Enter Pottasium value

Temperature(T) :  
Enter Temperature value

Humidity(H) :  
Enter Humidity value

PH :  
Enter PH value

RainFalls :  
Enter Rainfalls value

Predict

mango

