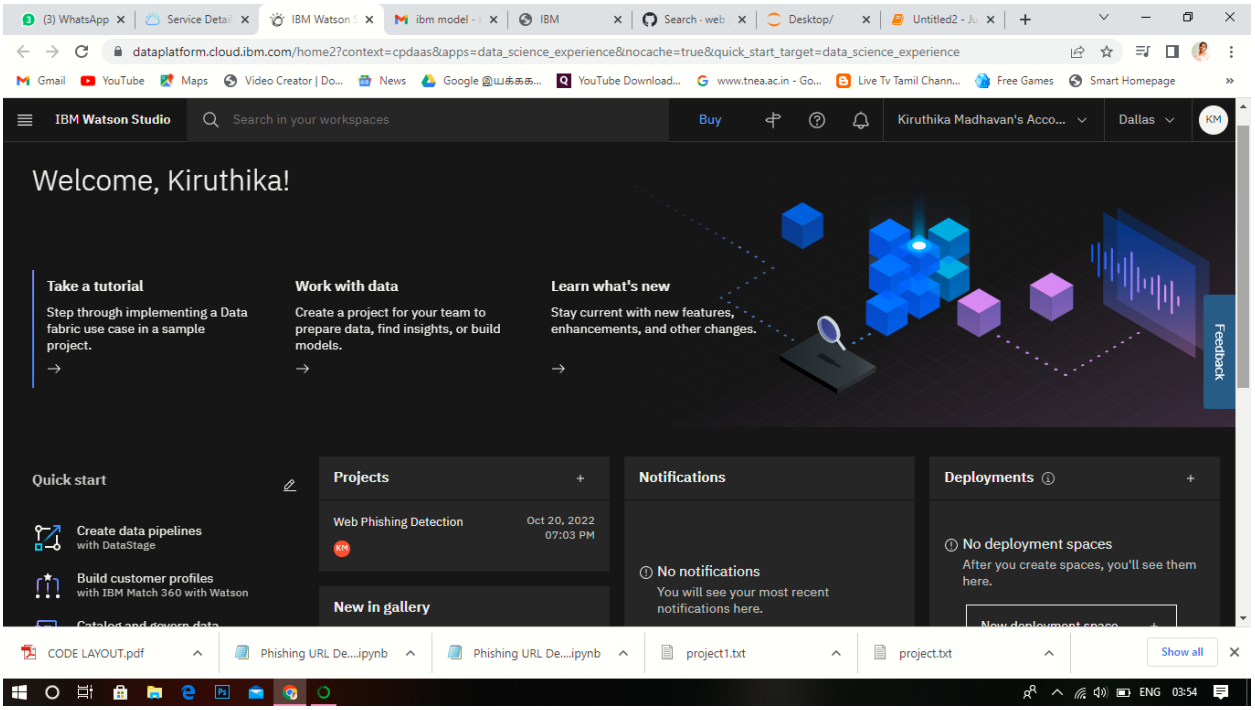
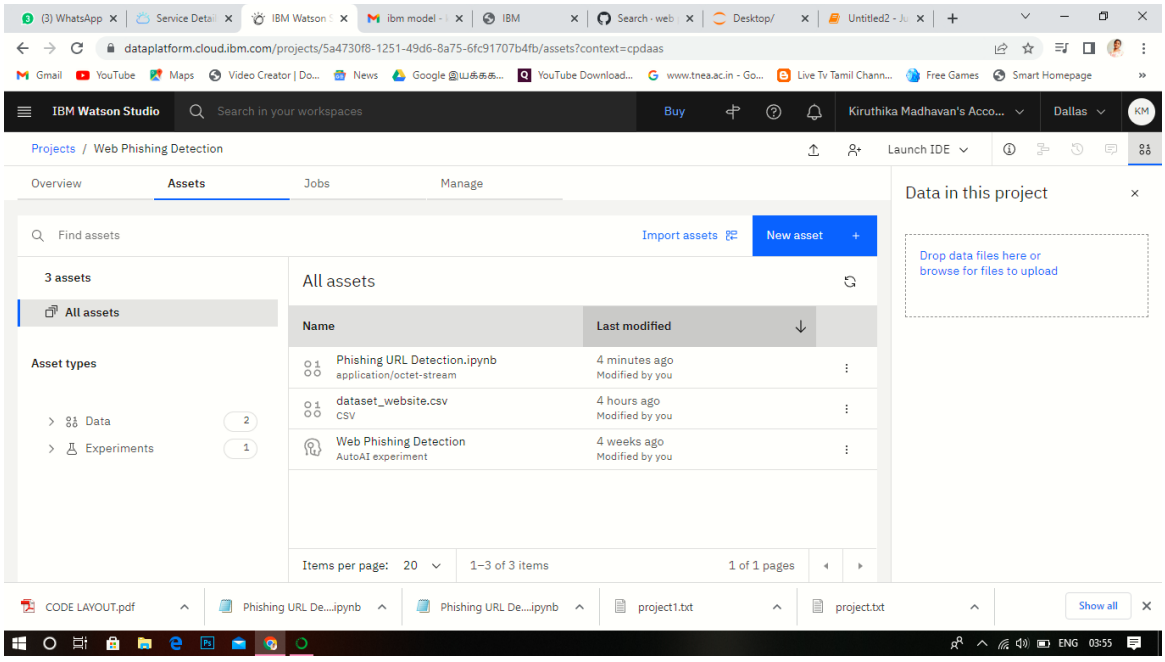
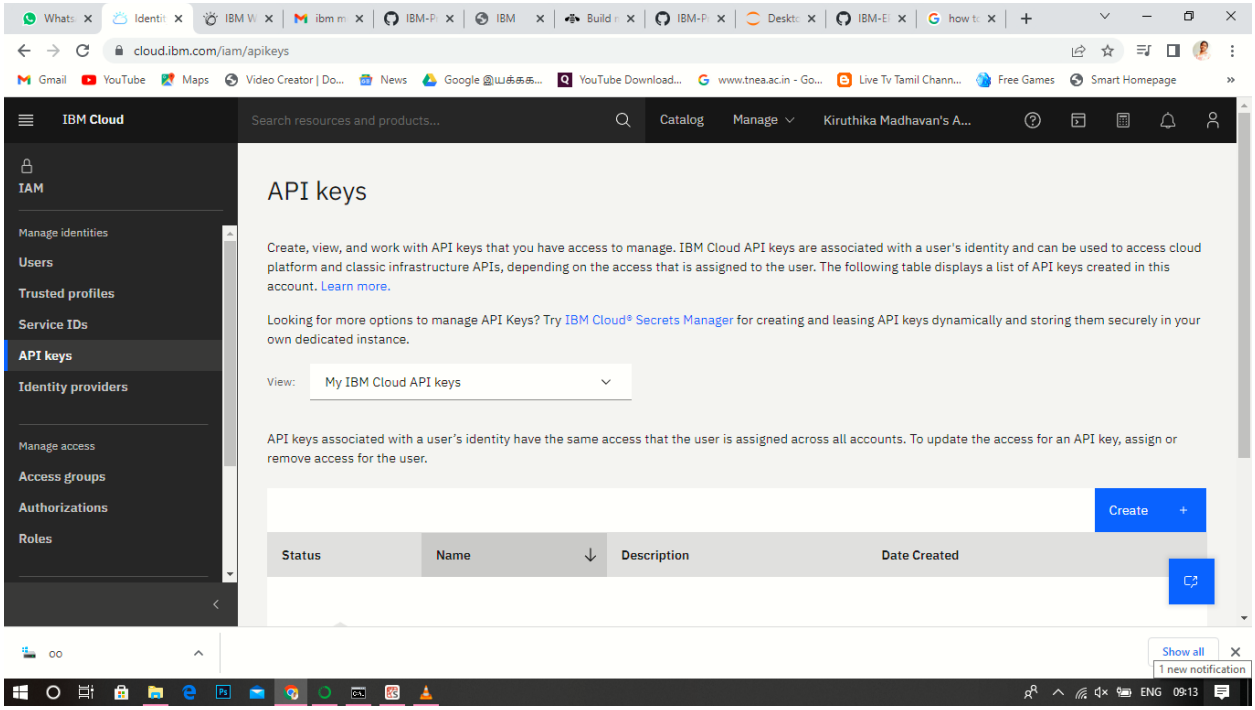
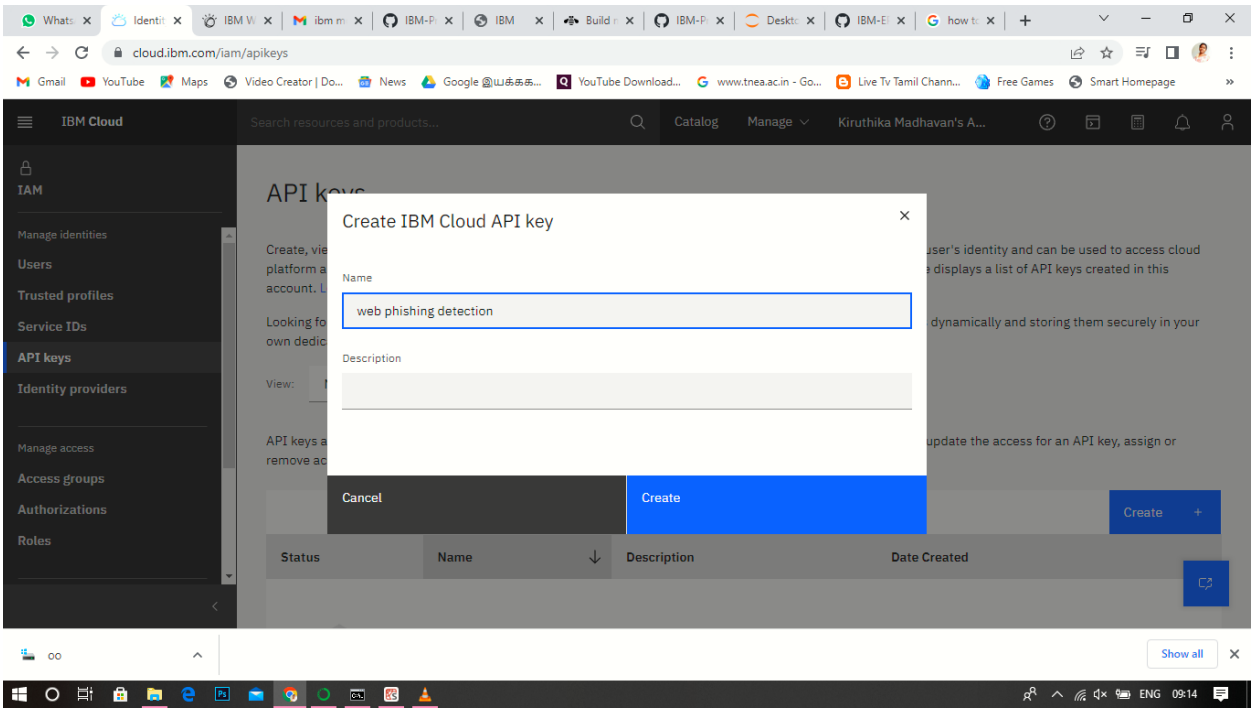
Final Output
Flask Integration – Code

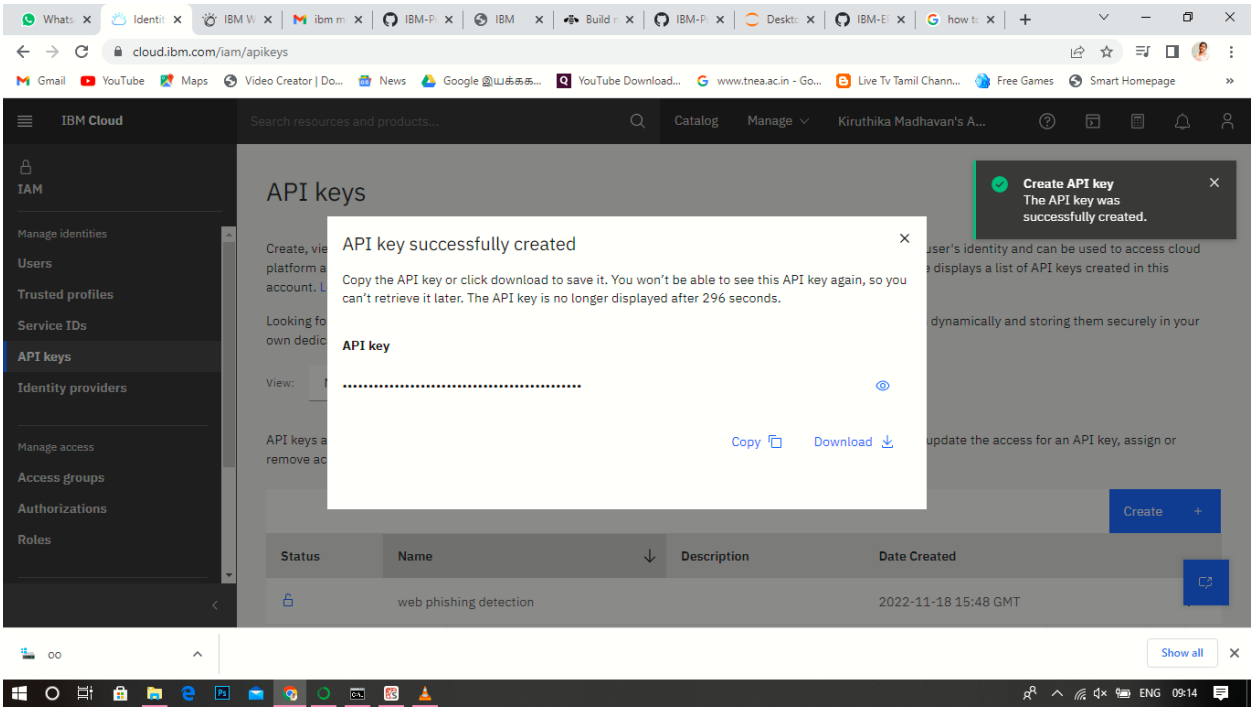
Team ID : PNT2022TMID30885
Project : Web Phishing Detection

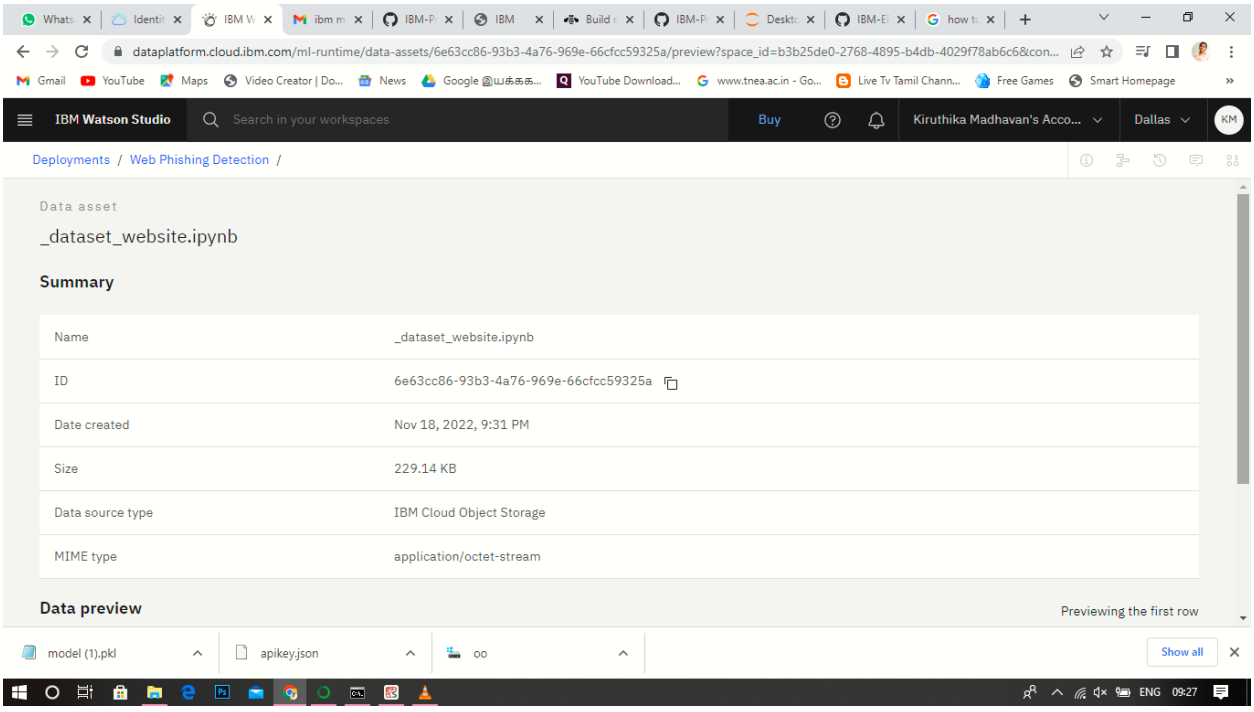


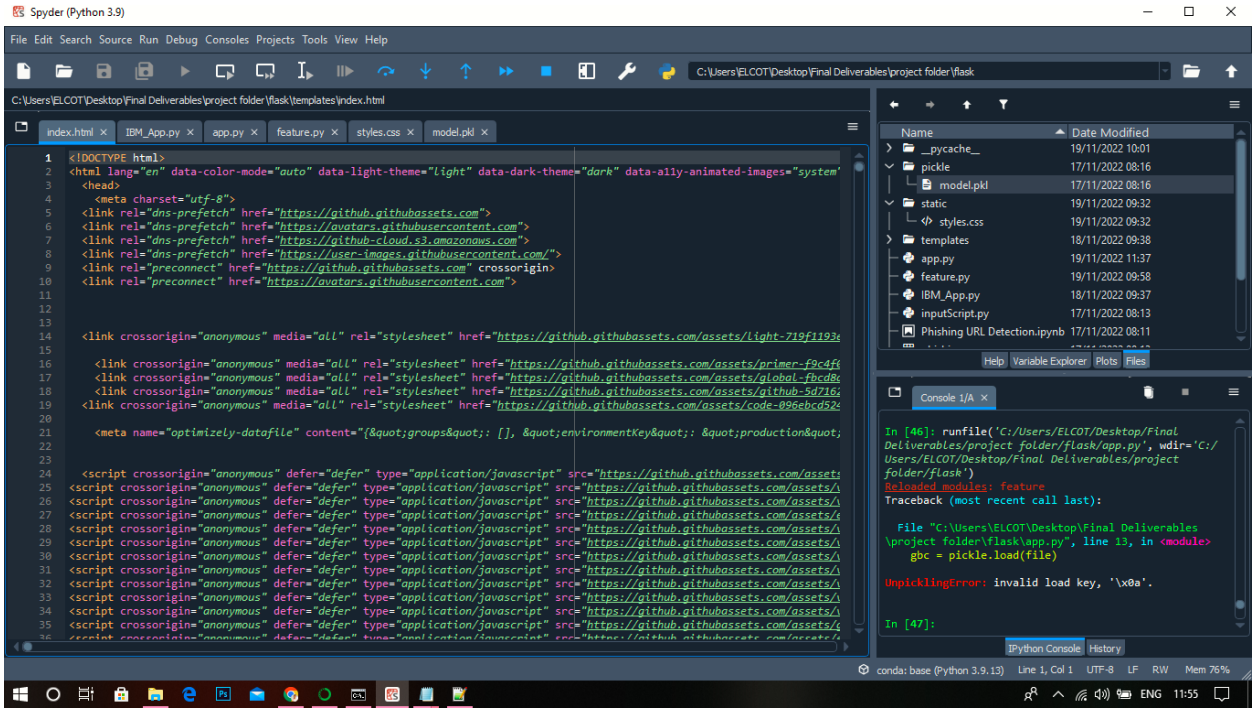


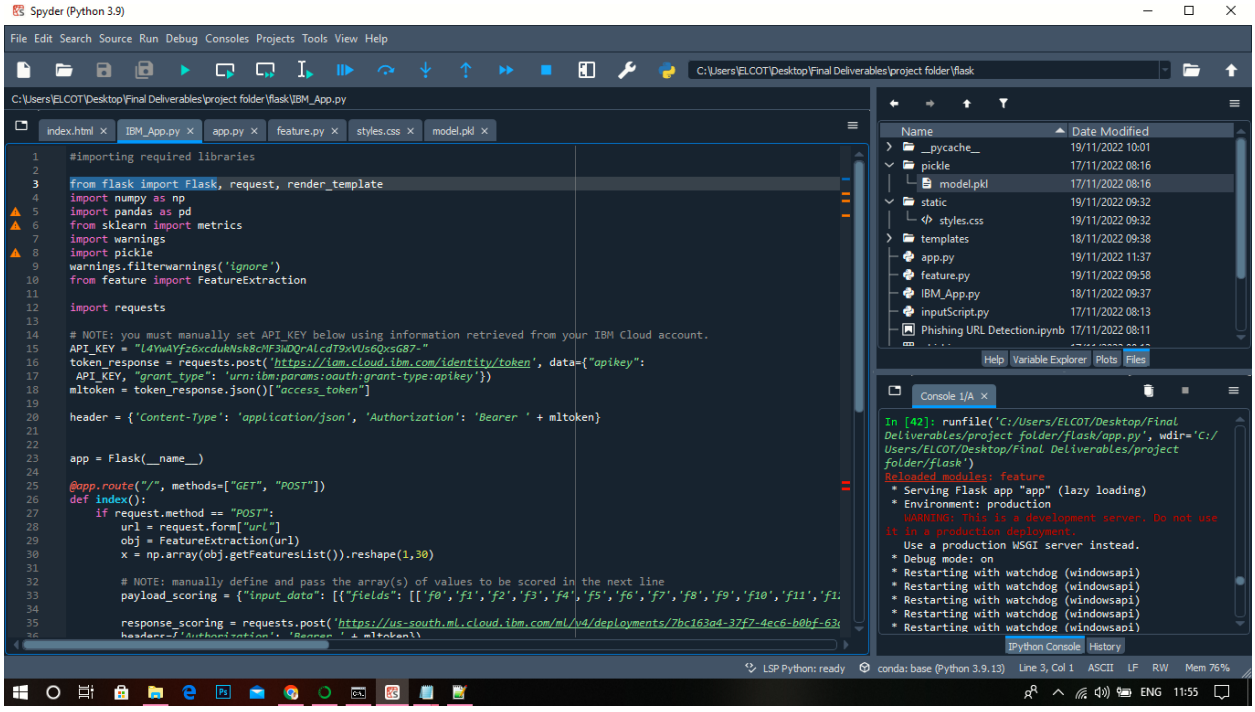

cloud.ibm.com/iam/apikeys
IBM Cloud
Search resources and products...
Catalog
Manage
Kiruthika Madhavan's A...
IAM
Manage identities
Users
Trusted profiles
Service IDs
API keys
Identity providers
Manage access
Access groups
Authorizations
Roles
API keys
Create, view, and work with API keys that you have access to manage. IBM Cloud API keys are associated with a user's identity and can be used to access cloud platform and classic infrastructure APIs, depending on the access that is assigned to the user. The following table displays a list of API keys created in this account. Learn more.
Looking for more options to manage API Keys? Try IBM Cloud® Secrets Manager for creating and leasing API keys dynamically and storing them securely in your own dedicated instance.
View:
My IBM Cloud API keys
API keys associated with a user's identity have the same access that the user is assigned across all accounts. To update the access for an API key, assign or remove access for the user.
Create
Status
Name
Description
Date Created
Show all
1 new notification
ENG
09:13


cloud.ibm.com/iam/apikeys
IBM Cloud
Search resources and products...
Catalog
Manage
Kiruthika Madhavan's A...
IAM
Manage identities
Users
Trusted profiles
Service IDs
API keys
Identity providers
Manage access
Access groups
Authorizations
Roles
Create IBM Cloud API key
Name
web phishing detection
Description
Cancel
Create
Status
Name
Description
Date Created
Show all
ENG
09:14


cloud.ibm.com/iam/apikeys
IBM Cloud
Search resources and products...
Catalog
Manage
Kiruthika Madhavan's A...
IAM
Manage identities
Users
Trusted profiles
Service IDs
API keys
Identity providers
Manage access
Access groups
Authorizations
Roles
API keys
Create API key
The API key was successfully created.
API key successfully created
Copy the API key or click download to save it. You won't be able to see this API key again, so you can't retrieve it later. The API key is no longer displayed after 296 seconds.
API key
Copy
Download
Create
Status
Name
Description
Date Created
web phishing detection
2022-11-18 15:48 GMT
Show all
ENG
09:14


dataplatform.cloud.ibm.com/ml-runtime/data-assets/6e63cc86-93b3-4a76-969e-66cfcc59325a/preview?space_id=b3b25de0-2768-4895-b4db-4029f78ab6c6&con...
IBM Watson Studio
Search in your workspaces
Buy
Kiruthika Madhavan's Acco...
Dallas
KM
Deployments / Web Phishing Detection /
Data asset
_dataset_website.ipynb
Summary
Name
_dataset_website.ipynb
ID
6e63cc86-93b3-4a76-969e-66cfcc59325a
Date created
Nov 18, 2022, 9:31 PM
Size
229.14 KB
Data source type
IBM Cloud Object Storage
MIME type
application/octet-stream
Data preview
Previewing the first row
model (1).pkl
apikey.json
oo
Show all
ENG
09:27


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask\templates\index.html
index.html
IBM_App.py
app.py
feature.py
styles.css
model.pkl
<!DOCTYPE html>
<html lang="en" data-color-mode="auto" data-light-theme="light" data-dark-theme="dark" data-a11y-animated-images="system"
<head>
<meta charset="utf-8">
<link rel="dns-prefetch" href="https://github.githubassets.com">
<link rel="dns-prefetch" href="https://avatars.githubusercontent.com">
<link rel="dns-prefetch" href="https://github-cloud.s3.amazonaws.com">
<link rel="dns-prefetch" href="https://user-images.githubusercontent.com/">
<link rel="preconnect" href="https://github.githubassets.com" crossorigin>
<link rel="preconnect" href="https://avatars.githubusercontent.com">
<link crossorigin="anonymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/light-719f1193
<link crossorigin="anonymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/primer-f9c4f6
<link crossorigin="anonymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/global-fbcd8
<link crossorigin="anonymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/github-5d716
<link crossorigin="anonymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/code-096ebcd52
<meta name="optimizely-datafile" content="{"groups": [], "environmentKey": "production"
<script crossorigin="anonymous" defer="defer" type="application/javascript" src="https://github.githubassets.com/assets
Name
Date Modified
__pycache__ 19/11/2022 10:01
pickle 17/11/2022 08:16
model.pkl 17/11/2022 08:16
static 19/11/2022 09:32
styles.css 19/11/2022 09:32
templates 18/11/2022 09:38
app.py 19/11/2022 11:37
feature.py 19/11/2022 09:58
IBM_App.py 18/11/2022 09:37
inputScript.py 17/11/2022 08:13
Phishing URL Detection.ipynb 17/11/2022 08:11
Help
Variable Explorer
Plots
Files
Console 1/A
In [46]: runfile('C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask/app.py', wdir='C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask')
Reloaded modules: feature
Traceback (most recent call last):
File "C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask\app.py", line 13, in <module>
gbc = pickle.load(file)
UnpicklingError: invalid load key, '\x0a'.
In [47]:
IPython Console
History
conda: base (Python 3.9.13)
Line 1, Col 1
UTF-8
LF
RW
Mem 76%
ENG
11:55


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask\IBM_App.py
index.html
IBM_App.py
app.py
feature.py
styles.css
model.pkl
#importing required libraries
from flask import Flask, request, render_template
import numpy as np
import pandas as pd
from sklearn import metrics
import warnings
import pickle
warnings.filterwarnings('ignore')
from feature import FeatureExtraction
import requests
# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "L4YwAYfz6xcdukNsk8cMF3WDQrAlcdT9xVUs6QxsG87-"
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken = token_response.json()["access_token"]
header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}
app = Flask(__name__)
@app.route("/", methods=["GET", "POST"])
def index():
if request.method == "POST":
url = request.form["url"]
obj = FeatureExtraction(url)
x = np.array(obj.getFeaturesList()).reshape(1,30)
# NOTE: manually define and pass the array(s) of values to be scored in the next line
payload_scoring = {"input_data": [{"fields": [['f0','f1','f2','f3','f4','f5','f6','f7','f8','f9','f10','f11','f1
response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/7bc163a4-37f7-4ec6-b0bf-63
Name
Date Modified
__pycache__ 19/11/2022 10:01
pickle 17/11/2022 08:16
model.pkl 17/11/2022 08:16
static 19/11/2022 09:32
styles.css 19/11/2022 09:32
templates 18/11/2022 09:38
app.py 19/11/2022 11:37
feature.py 19/11/2022 09:58
IBM_App.py 18/11/2022 09:37
inputScript.py 17/11/2022 08:13
Phishing URL Detection.ipynb 17/11/2022 08:11
Help
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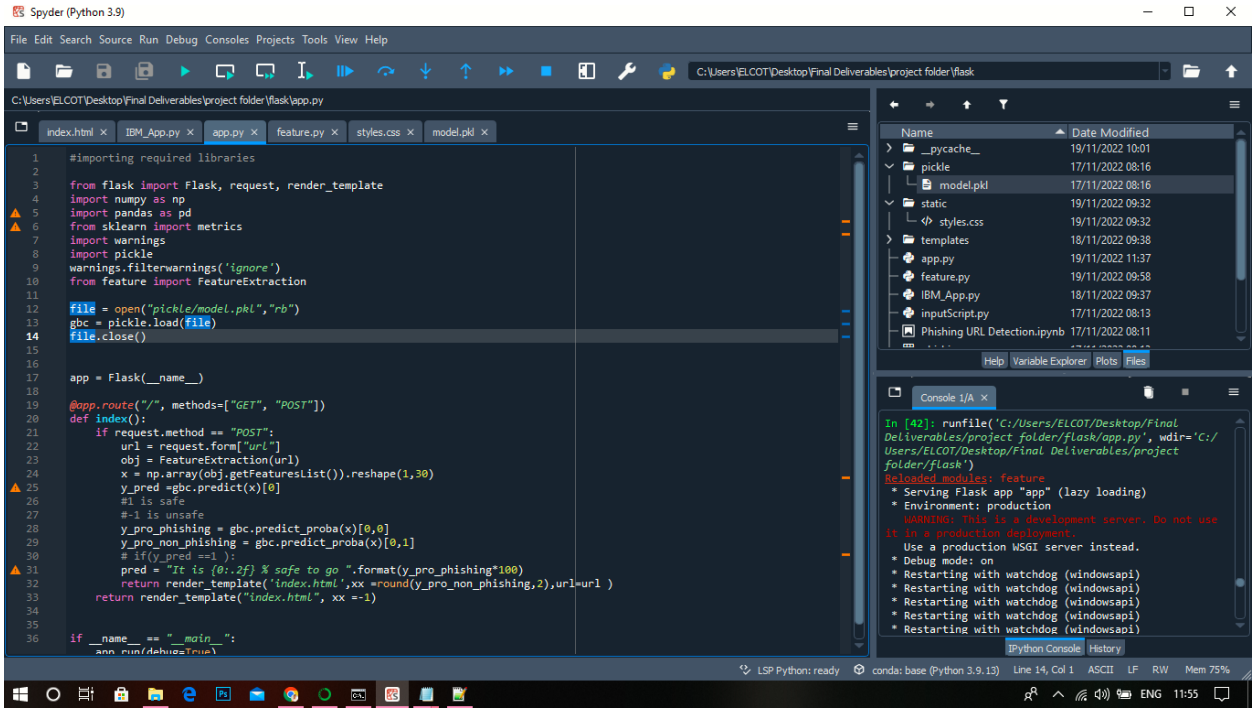
Files
Console 1/A
In [42]: runfile('C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask/app.py', wdir='C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask')
Reloaded modules: feature
* Serving Flask app "app" (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: on
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
IPython Console
History
LSP Python: ready
conda: base (Python 3.9.13)
Line 3, Col 1
ASCII
LF
RW
Mem 76%
ENG
11:55


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask\app.py
index.html × IBM_App.py × app.py × feature.py × styles.css × model.pkl ×
#importing required libraries
from flask import Flask, request, render_template
import numpy as np
import pandas as pd
from sklearn import metrics
import warnings
import pickle
warnings.filterwarnings('ignore')
from feature import FeatureExtraction
file = open("pickle/model.pkl","rb")
gbc = pickle.load(file)
file.close()
app = Flask(__name__)
@app.route("/", methods=["GET", "POST"])
def index():
if request.method == "POST":
url = request.form["url"]
obj = FeatureExtraction(url)
x = np.array(obj.getFeaturesList()).reshape(1,30)
y_pred =gbc.predict(x)[0]
#1 is safe
#-1 is unsafe
y_pro_phishing = gbc.predict_proba(x)[0,0]
y_pro_non_phishing = gbc.predict_proba(x)[0,1]
# if(y_pred ==1):
pred = "It is {0:.2f} % safe to go ".format(y_pro_phishing*100)
return render_template('index.html',xx =round(y_pro_non_phishing,2),url=url)
return render_template("index.html", xx =-1)
if __name__ == "__main__":
app.run(debug=True)
Name
Date Modified
__pycache__ 19/11/2022 10:01
pickle 17/11/2022 08:16
model.pkl 17/11/2022 08:16
static 19/11/2022 09:32
styles.css 19/11/2022 09:32
templates 18/11/2022 09:38
app.py 19/11/2022 11:37
feature.py 19/11/2022 09:58
IBM_App.py 18/11/2022 09:37
inputScript.py 17/11/2022 08:13
Phishing URL Detection.ipynb 17/11/2022 08:11
Help Variable Explorer Plots Files
Console 1/A
In [42]: runfile('C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask/app.py', wdir='C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask')
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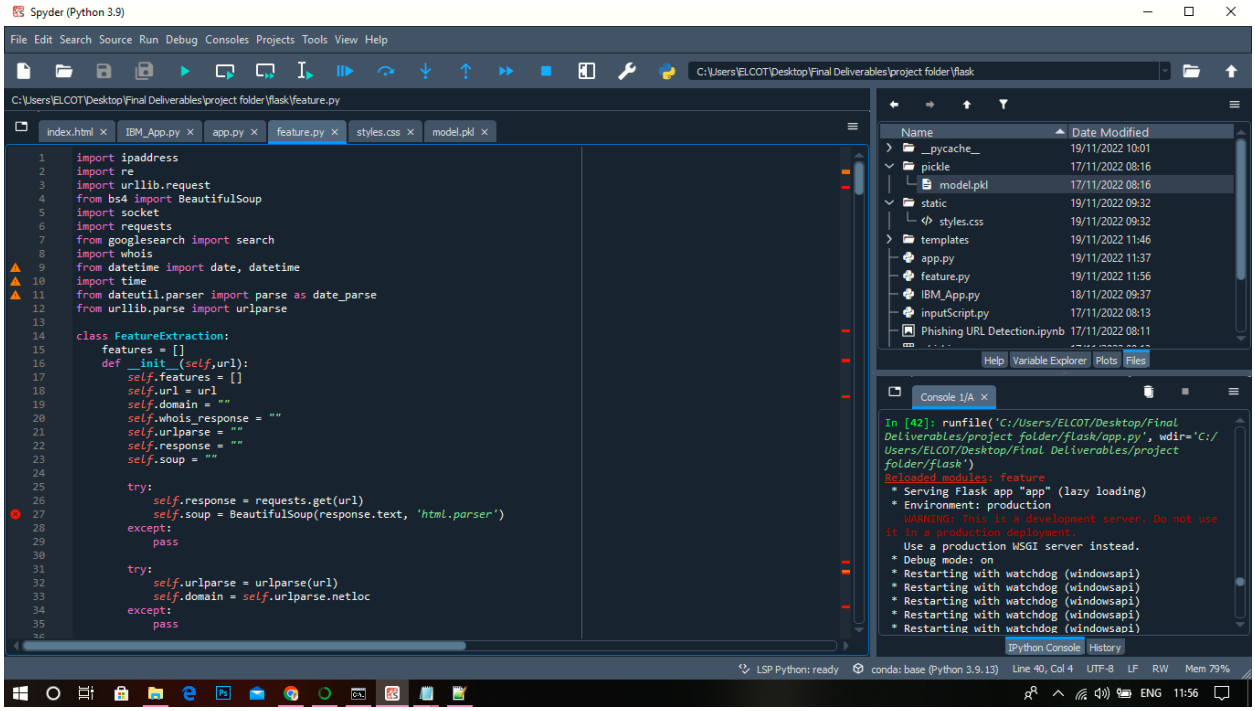
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
IPython Console History
LSP Python: ready
conda: base (Python 3.9.13)
Line 14, Col 1
ASCII
LF
RW
Mem 75%
ENG
11:55


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask
C:\Users\ELCOT\Desktop\Final Deliverables\project folder\flask\feature.py
index.html × IBM_App.py × app.py × feature.py × styles.css × model.pkl ×
import ipaddress
import re
import urllib.request
from bs4 import BeautifulSoup
import socket
import requests
from googlesearch import search
import whois
from datetime import date, datetime
import time
from dateutil.parser import parse as date_parse
from urllib.parse import urlparse
class FeatureExtraction:
features = []
def __init__(self,url):
self.features = []
self.url = url
self.domain = ""
self.whois_response = ""
self.urlparse = ""
self.response = ""
self.soup = ""
try:
self.response = requests.get(url)
self.soup = BeautifulSoup(response.text, 'html.parser')
except:
pass
try:
self.urlparse = urlparse(url)
self.domain = self.urlparse.netloc
except:
pass
Name
Date Modified
__pycache__ 19/11/2022 10:01
pickle 17/11/2022 08:16
model.pkl 17/11/2022 08:16
static 19/11/2022 09:32
styles.css 19/11/2022 09:32
templates 19/11/2022 11:46
app.py 19/11/2022 11:37
feature.py 19/11/2022 11:56
IBM_App.py 18/11/2022 09:37
inputScript.py 17/11/2022 08:13
Phishing URL Detection.ipynb 17/11/2022 08:11
Help Variable Explorer Plots Files
Console 1/A
In [42]: runfile('C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask/app.py', wdir='C:/Users/ELCOT/Desktop/Final Deliverables/project folder/flask')
Reloaded modules: feature
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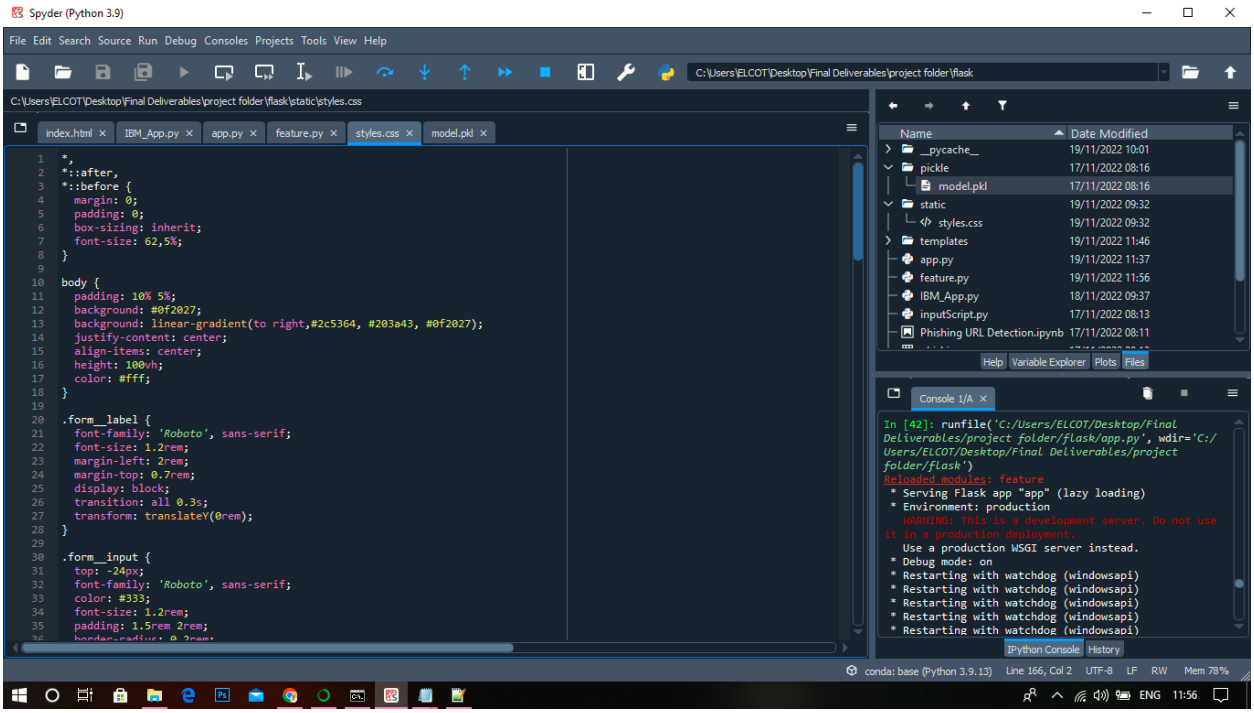
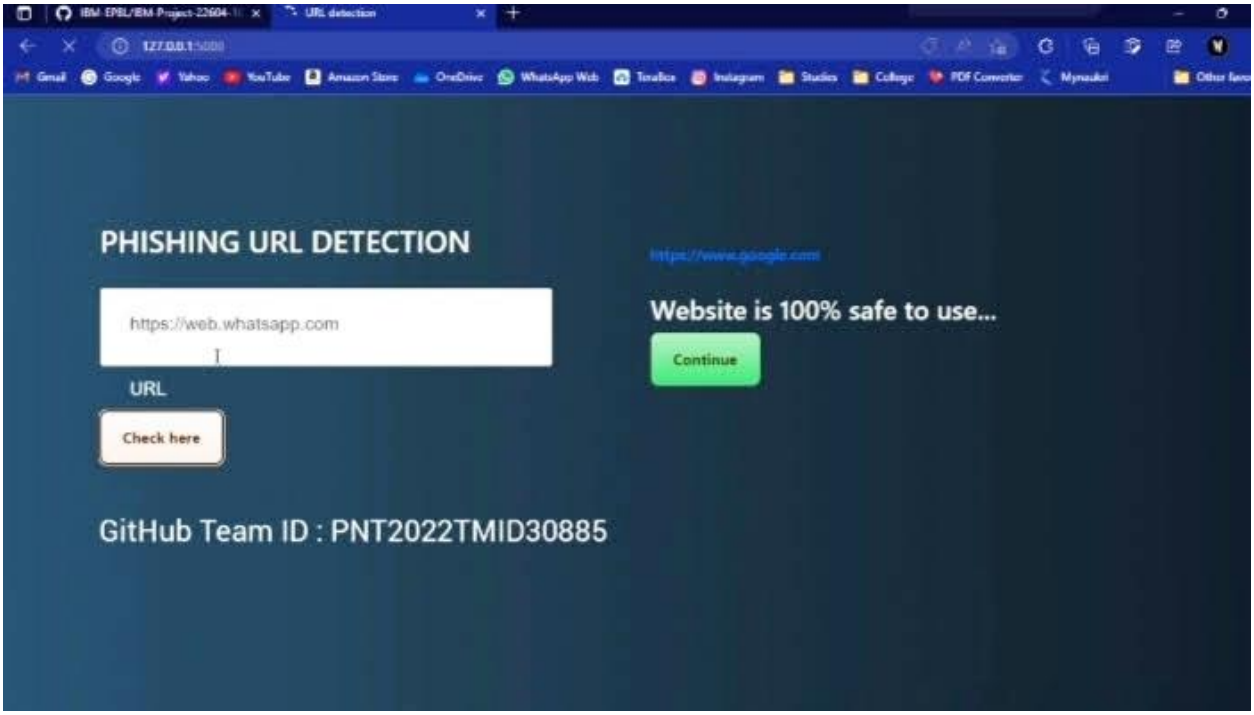
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
* Restarting with watchdog (windowsapi)
IPython Console History
LSP Python: ready
conda: base (Python 3.9.13)
Line 40, Col 4
UTF-8
LF
RW
Mem 79%
ENG
11:56



Final Output


URL detection
127.0.0.1:5000
PHISHING URL DETECTION
https://web.whatsapp.com
URL
Check here
https://www.google.com/
Website is 100% safe to use...
Continue
GitHub Team ID : PNT2022TMID30885