PROJECT DEVELOPMENT PHASE
Sprint 3

Date	18-Nov-22
Team ID	PNTIBM2022TMID52214
Project Name	Developing a Flight Delay Prediction Model Using Machine Learning
Maximum Marks	8 marks

Python Source code:

App.py:

from flask import Flask, render_template, request

import requests

import requests

NOTE: you must manually set API_KEY below using information retrieved from your IBM

Cloud account.

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Cloud account.

API_KEY = "2DFmuohBDmMuaxLg06oY9hJbEdzik5-CRKjdn6yGB762"

token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":

```python
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}

import mysql.connector

app = Flask(__name__)

conn=mysql.connector.connect(host="localhost", user="root", password="",
database="login")

cursor=conn.cursor()

@app.route('/')

def index():
 return render_template('index.html')

@app.route('/login')

def login(): # put application's code here
 return render_template('login.html')

@app.route('/register')

def register():
 return render_template('register.html')

@app.route('/modeling')

def modeling():
 return render_template('modeling.html')

@app.route('/home')

def home():
 return render_template('home.html')

@app.route('/service')

def service():
 return render_template('service.html')
```

```python
@app.route('/home1')

def about():

 return render_template('home1.html')

@app.route('/login_validation', methods=['POST'])

def login_validation():

 email=request.form.get('email')

 password=request.form.get('password')

 cursor.execute("""SELECT * FROM `users` WHERE `email` LIKE'{}' AND `password`

LIKE '{}'""".format(email,password))

 users = cursor.fetchall()

 if len(users)>0:

    return render_template('home.html')

 else:

    return render_template('login.html', prediction_text = "1" )

@app.route('/add_user', methods=['POST'])

def add_user():

 name= request.form.get('name')

 email = request.form.get('email')

 password = request.form.get('password')

 cursor.execute("""INSERT INTO `users`(`id`, `name`, `email`, `password`)
VALUES

(NULL,'{}','{}','{}')""".format(name,email,password))

 conn.commit()

 return render_template('login.html', prediction_text = "0")

@app.route('/predict',methods=['POST'])
```

```python
def predict():

    year = request.form['year']
    month = request.form['month']
    day = request.form['day']
    carrier = request.form['carrier']
    origin = request.form['origin']
    dest = request.form['dest']


    if (carrier=="UA"):
        carrier=11
    if (carrier=="AA"):
        carrier=1
    if (carrier=="B6"):
        carrier=3
    if (carrier=="DL"):
        carrier=4
    if (carrier=="EV"):
        carrier=8
    if (carrier=="MQ"):
        carrier=9
    if (carrier=="US"):
        carrier=12
    if (carrier=="WN"):
        carrier=14
```

```python
if (carrier=="VX"):
    carrier=13
if (carrier=="FL"):
    carrier=7
if (carrier=="AS"):
    carrier=2
if (carrier=="9E"):
    carrier=0
if (carrier=="F9"):
    carrier=9
if (carrier=="HA"):
    carrier=4
if (carrier=="OO"):
    carrier=5
if (carrier=="YV"):
    carrier=15

if (origin=="EWR"):
    origin=0
if (origin=="LGA"):
    origin=2
if (origin=="JFK"):
    origin=1

if (dest=="ATL"):
```

```python
    dest=4
if (dest=="IAH"):
    dest=43
if (dest=="MIA"):
    dest=57
if (dest=="BQN"):
    dest=12
if (dest=="ORD"):
    dest=68
if (dest=="FLL"):
    dest=35
if (dest=="IAD"):
    dest=42
if (dest=="MCO"):
    dest=53
if (dest=="PBI"):
    dest=70
if (dest=="TPA"):
    dest=99
if (dest=="LAX"):
    dest=49
if (dest=="SFO"):
    dest=89
if (dest=="DFW"):
    dest=30
```

```python
if (dest=="BOS"):
    dest=11
if (dest=="LAS"):
    dest=48
if (dest=="MSP"):
    dest=60
if (dest=="DTW"):
    dest=32
if (dest=="RSW"):
    dest=82
if (dest=="SJU"):
    dest=91
if (dest=="PHX"):
    dest=73
if (dest=="BWI"):
    dest=16
if (dest=="CLT"):
    dest=23
if (dest=="BOS"):
    dest=11
if (dest=="BUF"):
    dest=14
if (dest=="DEN"):
    dest=29
if (dest=="SNA"):
```

```python
    dest=94
if (dest=="LAS"):
    dest=48
if (dest=="MSY"):
    dest=61
if (dest=="SLC"):
    dest=92
if (dest=="SEA"):
    dest=88
if (dest=="ROC"):
    dest=99
if (dest=="ATL"):
    dest=4
if (dest=="DCA"):
    dest=33
if (dest=="RDU"):
    dest=4
if (dest=="BNA"):
    dest=4
if (dest=="CLE"):
    dest=88
if (dest=="STL"):
    dest=82
if (dest=="MDW"):
    dest=99
```

```python
if (dest=="CVG"):
    dest=68
if (dest=="CMH"):
    dest=68
if (dest=="CHS"):
    dest=99
if (dest=="PIT"):
    dest=1
if (dest=="SAN"):
    dest=82
if (dest=="MKE"):
    dest=11
if (dest=="JAX"):
    dest=88
if (dest=="BTV"):
    dest=4
if (dest=="AUS"):
    dest=23
if (dest=="RIC"):
    dest=64
if (dest=="PWM"):
    dest=83
if (dest=="HOU"):
    dest=89
if (dest=="IND"):
```

```python
    dest=47
if (dest=="MCI"):
    dest=80
if (dest=="SYR"):
    dest=78
if (dest=="BWI"):
    dest=4
if (dest=="MEM"):
    dest=23
if (dest=="PHL"):
    dest=14
if (dest=="GSO"):
    dest=96
if (dest=="ORF"):
    dest=23
if (dest=="DAY"):
    dest=57
if (dest=="PDX"):
    dest=83
if (dest=="SRQ"):
    dest=91
if (dest=="SDF"):
    dest=29
if (dest=="XNA"):
    dest=88
```

```python
if (dest=="MHT"):
    dest=43
if (dest=="BDL"):
    dest=23
if (dest=="OMA"):
    dest=4
if (dest=="GSP"):
    dest=57
if (dest=="SAV"):
    dest=28
if (dest=="GRR"):
    dest=16
if (dest=="HNL"):
    dest=24
if (dest=="SAT"):
    dest=30
if (dest=="TYS"):
    dest=99
if (dest=="MSN"):
    dest=55
if (dest=="DSM"):
    dest=23
if (dest=="STT"):
    dest=23
if (dest=="ALB"):
```

```python
    dest=99
if (dest=="BUR"):
    dest=41
if (dest=="PVD"):
    dest=32
if (dest=="PSE"):
    dest=96
if (dest=="OKC"):
    dest=61
if (dest=="TUL"):
    dest=60
if (dest=="SMF"):
    dest=88
if (dest=="ACK"):
    dest=11
if (dest=="AVL"):
    dest=10
if (dest=="ABQ"):
    dest=30
if (dest=="MVY"):
    dest=68
if (dest=="EGE"):
    dest=32
if (dest=="CRW"):
    dest=4
```

```python
    if (dest=="ILM"):
        dest=79
    if (dest=="CAE"):
        dest=69


    t=[[int(year),int(month),int(day),int(carrier),int(origin),int(dest)]]


    payload_scoring = {"input_data": [{"fields": [["f0","f1","f2","f3","f4","f5"]],
"values":t }]}
        #paload_scoring = {"input_data": [{"fields": [array_of_input_fields],
"values":
    [0, 0]
    response_scoring = requests.post('https://us-
south.ml.cloud.ibm.com/ml/v4/deployments/b6206819-9cf0-4be3-ad76-
6949a3a90717/predictions?version=2022-11-18', json=payload_scoring,
    headers={'Authorization': 'Bearer ' + mltoken})


    print("Scoring response")


    payload_scoring = {"input_data": [{"fields": [["f0","f1","f2","f3","f4","f5"]],
"values":t }]}
    prediction= response_scoring.json()
    output=prediction['predictions'][0]['values'][0][0]
    print(output)
    return render_template('home.html', prediction_text = output)
```

```python
if __name__ == '__main__':
    app.run(debug=True)
# For mac, make 'app.run(debug=True)'
```