DEVELOPING A FLIGHT DELAY PREDICTION MODEL USING MACHINE LEARNING

Team ID: PNT2022TMID27775

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.



    import requests


    # NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud
    account.

    API_KEY = "gyOvc0l0Hde4zdTmNc47N4Vh1zmMTFh7FlK8BEcKPADB"

    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} 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('/home') def
home():

    return render_template('home.html')


@app.route('/service') def
service():

    return render_template('service.html')


@app.route('/about') def
about():

    return render_template('about.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']) 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
```

```
if
        (carrier=="VX"
): carrier=13
(carrier=="FL"):
carrier=7
(carrier=="AS"):
carrier=2
(carrier=="9E"):
carrier=0
```

```
    (carrier=="F9"):
    carrier=9
    (carrier=="HA"):
    carrier=4
    (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"): 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

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"
    ): 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
   (dest=="BNA"):     dest=4
   (dest=="CLE"):    dest=88
   (dest=="STL"):    dest=82
   (dest=="MDW"): dest=99
   (dest=="CVG"):   dest=68
   (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")
    : 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

    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")
: dest=99

if
        (dest=="BUR"
): dest=41

if
        (dest=="PVD"
): dest=32

if (dest=="PSE"):
 dest=96
 (dest=="OKC"):

dest=61
(dest=="TUL"):

dest=60
(dest=="SMF"):

dest=88
(dest=="ACK"):

dest=11

(dest=="AVL"):
 dest=10

(dest=="ABQ"):
 dest=30

 if
        (dest=="MVY"
 ): dest=68
```

```
        if
                (dest=="EGE")
        : dest=32

    if          (dest=="CRW"):
    dest=4  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 }]}
    #payload_scoring = {"input_data": [{"fields": [array_of_input_fields], "values":
[array_of_values_to_be_scored, another_array_of_values_to_be_scored]}]}


    response_scoring = requests.post('https://us-
south.ml.cloud.ibm.com/ml/v4/deployments/f4014f53-d84e-4c2a-9dd2-
e36cd70e6b22/predictions?version=2022-11-04',          json=payload_scoring,
headers={'Authorization': 'Bearer ' + mltoken})

    print("Scoring response")


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


 if__name____== '_main_':

        app.run(debug=True)

# For mac, make 'app.run(debug=True)'
```