BUILD PYTHON CODE

Date	18 November 2022
Team ID	PNT2022TMID29843
Project Name	Flight delay prediction model using machinelearning

PYTHON CODE:

app_ibm.py:

```
from flask import Flask,render_template,request
import requests
# NOTE: you must manually set API_KEY below using information retrieved from
your IBM Cloud account.
API_KEY = "A3SrnPK-7Z8jLS9Zlcmmm-B7lFWjGtRjuPmhXXjpCvQM"
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('/')
def index():
    return render_template('index.html')

@app.route('/prediction',methods=["POST"])
def predict():
    if request.method=="POST":
        name=request.form["name"]
        month=request.form["month"]
        if(int(month)>12):
            ans="Please Enter the correct Month"
            return render_template("index.html" ,y=ans)

        dayofmonth=request.form["dayofmonth"]
        if(int(dayofmonth)>31):
            ans="Please Enter the correct Day of Month"
            return render_template("index.html" ,y=ans)

        dayofweek=request.form["dayofweek"]
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if(int(dayofweek)>7):
    ans="Please Enter the correct Day of Week"
    return render_template("index.html" ,y=ans)


origin=request.form["origin"]
destination=request.form['destination']

if(origin==destination):
    ans="Origin airport and destination airport can't be same"
    return render_template("index.html" ,y=ans)

if(origin=="msp"):
    origin1,origin2,origin3,origin4,origin5=0,0,0,1,0
if(origin=="dtw"):
    origin1,origin2,origin3,origin4,origin5=0,1,0,0,0
if(origin=="jfk"):
    origin1,origin2,origin3,origin4,origin5=0,0,1,0,0
if(origin=="sea"):
    origin1,origin2,origin3,origin4,origin5=0,0,0,0,1
if(origin=="alt"):
    origin1,origin2,origin3,origin4,origin5=1,0,0,0,0



if(destination=="msp"):
    destination1,destination2,destination3,destination4,destination5=0,0,0,1,0
if(destination=="dtw"):
    destination1,destination2,destination3,destination4,destination5=0,1,0,0,0
if(destination=="jfk"):
    destination1,destination2,destination3,destination4,destination5=0,0,1,0,0
if(destination=="sea"):
    destination1,destination2,destination3,destination4,destination5=0,0,0,0,1
if(destination=="alt"):
    destination1,destination2,destination3,destination4,destination5=1,0,0,0,0

depthr=request.form['depthr']
deptmin=request.form['deptmin']
if(int(depthr)>23 or int(deptmin)>59):
    ans="Please enter the correct Departure time"
    return render_template("index.html" ,y=ans)
else:
    dept=depthr+deptmin

actdepthr=request.form['actdepthr']
actdeptmin=request.form['actdeptmin']
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```
    if(int(actdepthr)>23 or int(actdeptmin)>59):
        ans="Please enter the correct Actual Departure time"
        return render_template("index.html" ,y=ans)
    else:
        actdept=actdepthr+actdeptmin



    arrtimehr=request.form['arrtimehr']
    arrtimemin=request.form['arrtimemin']
    if(int(arrtimehr)>23 or int(arrtimemin)>59):
        ans="Please enter the correct Arrival time"
        return render_template("index.html" ,y=ans)
    else:
        arrtime=arrtimehr+arrtimemin



    if((int(actdept)-int(dept))<15):
        dept15=0
    else:
        dept15=1

    print(dept15)


total=[[int(month),int(dayofmonth),int(dayofweek),int(origin1),int(origin2),int(origin
3),int(origin4),int(origin5),int(destination1),int(destination2),int(destination3),int(des
tination4),int(destination5),int(dept),int(actdept),int(dept15),int(arrtime)]]
    print(total)
    # NOTE: manually define and pass the array(s) of values to be scored in the
next line
    payload_scoring = {"input_data": [{"fields":
["int(month)","int(dayofmonth)","int(dayofweek)","int(origin1)","int(origin2)","int(o
rigin3)","int(origin4)","int(origin5)","int(destination1)","int(destination2)","int(destin
ation3)","int(destination4)","int(destination5)","int(dept)","int(actdept)","int(dept15)"
,"int(arrtime)"], "values": total}]}

    response_scoring = requests.post('https://us-
south.ml.cloud.ibm.com/ml/v4/deployments/5b2670ac-b4ed-4173-a575-
bf3383144c03/predictions?version=2022-11-15', json=payload_scoring,
    headers={'Authorization': 'Bearer ' + mltoken})
    print("Scoring response")
    print(response_scoring.json())

    pred = response_scoring.json()
    value = pred['predictions'][0]['values'][0][0]
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        print(value)
        if value==0:
            ans="THE FLIGHT WILL BE ON TIME"
        else:
            ans="THE FLIGHT WILL BE DELAYED"

    return render_template("results.html" ,y=ans)


if _name=="main_":
    app.run(debug=True)
```

OUTPUT :