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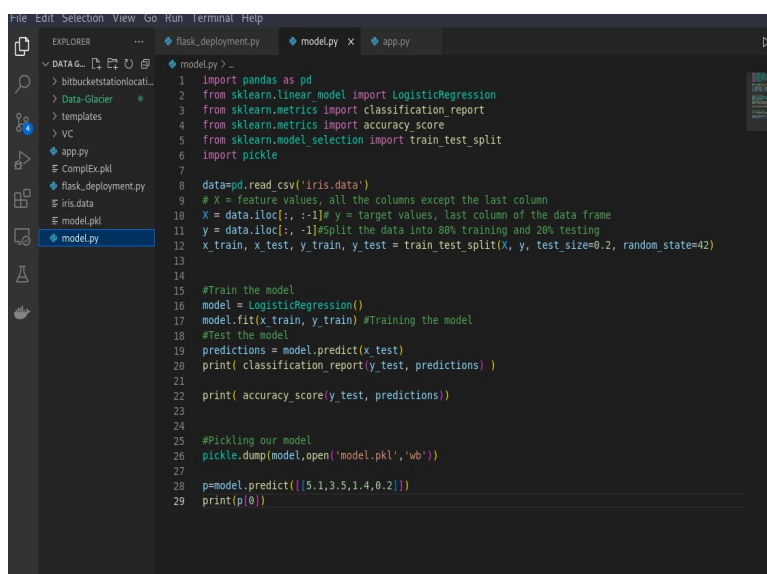
Batch code : app.py

Submission data : 28th September 2022

Submitted to : Data Glacier

1. **Dataset :** Iris data

2. **The model :** the code can be find in the file *model.py* and the model has been save under the name *model.pkl*



```
1 import pandas as pd
2 from sklearn.linear_model import LogisticRegression
3 from sklearn.metrics import classification_report
4 from sklearn.metrics import accuracy_score
5 from sklearn.model_selection import train_test_split
6 import pickle
7
8 data=pd.read_csv('iris.data')
9 # X = feature values, all the columns except the last column
10 X = data.iloc[:, :-1]# y = target values, last column of the data frame
11 y = data.iloc[:, -1]#split the data into 80% training and 20% testing
12 x_train, x_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
13
14
15 #Train the model
16 model = LogisticRegression()
17 model.fit(x_train, y_train) #Training the model
18 #Test the model
19 predictions = model.predict(x_test)
20 print( classification_report(y_test, predictions) )
21
22 print( accuracy_score(y_test, predictions))
23
24
25 #Pickling our model
26 pickle.dump(model,open('model.pkl','wb'))
27
28 p=model.predict([[5.1,3.5,1.4,0.2]])
29 print(p[0])
```

```
/home/wilfried/.local/lib/python3.9/site-packages/pandas/compat/_optional.py:161: UserWarning: Pandas requires version '1.3.1' or newer of 'bottleneck' (version '1.2.1' currently installed).
  warnings.warn(msg, UserWarning)
/home/wilfried/.local/lib/python3.9/site-packages/sklearn/linear_model/_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
  https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
  https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
n_iter_i = _check_optimize_result(
precision    recall  f1-score   support

   Iris-setosa      1.00      1.00      1.00        10
  Iris-versicolor      1.00      0.67      0.80         9
   Iris-virginica      0.79      1.00      0.88        11

   accuracy              0.90        30
  macro avg              0.93      0.89      0.89        30
 weighted avg              0.92      0.90      0.90        30

0.9
/home/wilfried/.local/lib/python3.9/site-packages/sklearn/base.py:450: UserWarning: X does not have valid feature names, but LogisticRegression was fitted with feature names
  warnings.warn(
Iris-setosa
```

3. **Deployment on Flask (web app) :** We first loaded our model using *pickle* and then we created our app and we wrote a function to do the prediction and print it on our webpage. The code can found in the file *app.py* as showed in the following pictures

```

app.py > home
1 import numpy as np
2 from flask import Flask, request, jsonify, render_template
3 import pickle
4
5 #load our model
6 model = pickle.load(open('model.pkl', 'rb'))
7
8 #create our app
9 app = Flask(__name__)
10 @app.route('/')
11 def home():
12     return render_template('index.html')
13
14
15 #we write the function to do the prediction and print it on our webpage
16 @app.route('/predict', methods=['POST'])
17 def predict():
18     '''
19     For rendering results on HTML GUI
20     '''
21     int_features = [float(x) for x in request.form.values()]
22
23     final_features = [np.array(int_features)]
24     prediction = model.predict(final_features)
25
26     output = prediction[0]
27
28     return render_template('index.html', prediction_text='The Flower is {}'.format(output))
29
30
31 if __name__ == "__main__":
32     app.run(debug=True)

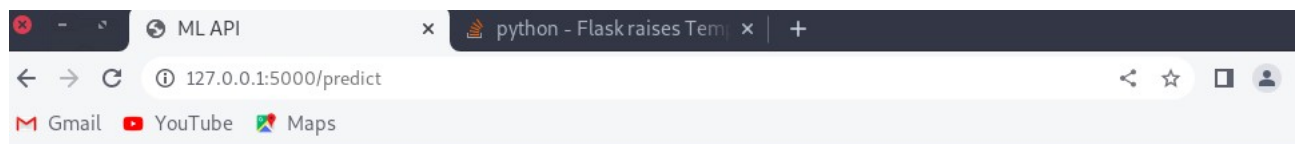
```

```

127.0.0.1 - - [28/Sep/2022 22:30:32] "GET / HTTP/1.1" 500 -
Traceback (most recent call last):
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 2095, in __call__
    return self.wsgi_app(environ, start_response)
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 2080, in wsgi_app
    response = self.handle_exception(e)
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 2077, in wsgi_app
    response = self.full_dispatch_request()
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 1525, in full_dispatch_re
quest
    rv = self.handle_user_exception(e)
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 1523, in full_dispatch_re
quest
    rv = self.dispatch_request()
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/app.py", line 1509, in dispatch_request
    return self.ensure_sync(self.view_functions[rule.endpoint])(**req.view_args)
  File "/home/wilfried/Downloads/Tati/data glacier virtual/app.py", line 12, in home
    return render_template('index.html')
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/templating.py", line 149, in render_tem
plate
    ctx.app.jinja_env.get_or_select_template(template_name_or_list),
  File "/home/wilfried/.local/lib/python3.9/site-packages/jinja2/environment.py", line 1081, in get_or_
select_template
    return self.get_template(template_name_or_list, parent, globals)
  File "/home/wilfried/.local/lib/python3.9/site-packages/jinja2/environment.py", line 1010, in get_tem
plate
    return self._load_template(name, globals)
  File "/home/wilfried/.local/lib/python3.9/site-packages/jinja2/environment.py", line 969, in _load_te
mplate
    template = self.loader.load(self, name, self.make_globals(globals))
  File "/home/wilfried/.local/lib/python3.9/site-packages/jinja2/loaders.py", line 126, in load
    source, filename, uptodate = self.get_source(environment, name)
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/templating.py", line 59, in get_source
    return self._get_source_fast(environment, template)
  File "/home/wilfried/.local/lib/python3.9/site-packages/flask/templating.py", line 95, in _get_source
_fast
    raise TemplateNotFound(template)
jinja2.exceptions.TemplateNotFound: index.html
127.0.0.1 - - [28/Sep/2022 22:30:33] "GET /?_debugger__=yes&cmd=resource&f=style.css HTTP/1.1" 200 -
127.0.0.1 - - [28/Sep/2022 22:30:33] "GET /?_debugger__=yes&cmd=resource&f=debugger.js HTTP/1.1" 200 -
127.0.0.1 - - [28/Sep/2022 22:30:33] "GET /?_debugger__=yes&cmd=resource&f=console.png HTTP/1.1" 200 -
127.0.0.1 - - [28/Sep/2022 22:30:33] "GET /?_debugger__=yes&cmd=resource&f=console.png HTTP/1.1" 304 -
127.0.0.1 - - [28/Sep/2022 22:35:21] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [28/Sep/2022 22:35:22] "GET /favicon.ico HTTP/1.1" 404 -
/home/wilfried/.local/lib/python3.9/site-packages/sklearn/base.py:450: UserWarning: X does not have val
id feature names, but LogisticRegression was fitted with feature names
  warnings.warn(
127.0.0.1 - - [28/Sep/2022 22:35:43] "POST /predict HTTP/1.1" 200 -
* Detected change in '/home/wilfried/Downloads/Tati/data glacier virtual/app.py', reloading
* Restarting with watchdog (inotify)
* Debugger is active!
* Debugger PIN: 114-995-408

```

The deployment on the web page is showed in the image below:



Predict flowers names

<input type="text" value="SepalLength"/>	<input type="text" value="SepalWidth"/>	<input type="text" value="PetalLength"/>	<input type="text" value="PetalWidth"/>	<input type="button" value="Predict"/>
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The Flower is Iris-virginica