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April 1, 2023

[1]:
```
import pandas as pd
import numpy as np
```

[2]:
```
df = pd.read_csv("Salary_Data.csv")
df.head(5)
```

[2]:

	YearsExperience	Salary
0	1.1	39343.0
1	1.3	46205.0
2	1.5	37731.0
3	2.0	43525.0
4	2.2	39891.0

[5]:
```
from sklearn.linear_model import LinearRegression

# Split the data into features and labels
X = df.iloc[:, :-1].values
y = df.iloc[:, -1].values

# Define and train the model
model = LinearRegression()
model.fit(X, y)

# Use the model to make predictions
y_pred = model.predict(X)

# Evaluate the model
score = model.score(X, y)

# Print the score
print("Model score:", score)
```

```
Model score: 0.9569566641435086
```

[7]:
```
import pickle

# train your model here
```

```
# save the model to a file
with open("model.pkl", "wb") as f:
    pickle.dump(model, f)
```

[12]:
```
from flask import Flask, request, jsonify
import pickle
import numpy as np

app = Flask(__name__)

# Load the trained model from a file
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/predict', methods=['POST'])
def predict():
    # Get the input data from the request
    data = request.get_json(force=True)
    # Convert the input data to a numpy array
    predict_input = np.array([data['exp']])
    # Use the model to make predictions
    prediction = model.predict(predict_input.reshape(1, -1))
    # Return the prediction as JSON
    return jsonify(prediction.tolist())

if __name__ == '__main__':
    # Run the Flask application
    app.run(debug=True, port = 5001)
```

```
 * Serving Flask app "__main__" (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
 * Running on http://127.0.0.1:5001/ (Press CTRL+C to quit)
 * Restarting with watchdog (fsevents)
Traceback (most recent call last):
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/ipykernel_launcher.py", line 16, in <module>
    app.launch_new_instance()
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/traitlets/config/application.py", line 845, in launch_instance
    app.initialize(argv)
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/traitlets/config/application.py", line 88, in inner
    return method(app, *args, **kwargs)
```

```
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/ipykernel/kernelapp.py", line 632, in initialize
    self.init_sockets()
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/ipykernel/kernelapp.py", line 282, in init_sockets
    self.shell_port = self._bind_socket(self.shell_socket, self.shell_port)
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/ipykernel/kernelapp.py", line 229, in _bind_socket
    return self._try_bind_socket(s, port)
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/ipykernel/kernelapp.py", line 205, in _try_bind_socket
    s.bind("tcp://%s:%i" % (self.ip, port))
  File "/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/zmq/sugar/socket.py", line 214, in bind
    super().bind(addr)
  File "zmq/backend/cython/socket.pyx", line 540, in
zmq.backend.cython.socket.Socket.bind
  File "zmq/backend/cython/checkrc.pxd", line 28, in
zmq.backend.cython.checkrc._check_rc
zmq.error.ZMQError: Address already in use
```

```
An exception has occurred, use %tb to see the full traceback.

SystemExit: 1
```

```
/Users/songxiaoke/opt/anaconda3/lib/python3.9/site-
packages/IPython/core/interactiveshell.py:3377: UserWarning: To exit: use
'exit', 'quit', or Ctrl-D.
  warn("To exit: use 'exit', 'quit', or Ctrl-D.", stacklevel=1)
```

[ ]: