

## Week 4 Assignment

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# Step 1: Load and explore the diabetes dataset

import pandas as pd
from sklearn.datasets import load_diabetes

# Load the diabetes dataset
data = load_diabetes()
df = pd.DataFrame(data.data, columns=data.feature_names)
df['target'] = data.target
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# Step 2: Save the model

from sklearn.linear_model import LinearRegression
import joblib

# Create and train the model
X = df.drop('target', axis=1)
y = df['target']
model = LinearRegression()
model.fit(X, y)

# Save the model to a file
model_filename = 'diabetes_model.pkl'
joblib.dump(model, model_filename)

['diabetes_model.pkl']
```

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# Step 3: Deploy the model on Flask (web app)

from flask import Flask, request, jsonify

# Load the model
loaded_model = joblib.load(model_filename)

# Create the Flask app
app = Flask(__name__)

# Define a prediction route
@app.route('/predict', methods=['POST'])
def predict():
    data = request.get_json()
    prediction = loaded_model.predict([data['features']])
    return jsonify({'prediction': prediction[0]})

# Run the app
if __name__ == '__main__':
    app.run(debug=True)

* Serving Flask app '__main__'
* Debug mode: on
```