

# DIGITAL ASSIGNMENT 2

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[3]: import pandas as pd
      from sklearn.datasets import load_breast_cancer
      from sklearn.preprocessing import StandardScaler
      from sklearn.linear_model import LinearRegression
      from sklearn.metrics import r2_score, mean_squared_error, mean_absolute_error
```

```
# Load dataset
bs = load_breast_cancer(as_frame=True)
df = bs.data
df['target'] = bs.target # Add target column
```

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[4]: features = df[['mean texture', 'mean area', 'mean compactness']]
      target = df['mean fractal dimension']
```

```
[5]: # Apply StandardScaler
      scaler = StandardScaler()
      features_scaled = scaler.fit_transform(features)
```

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[6]: # Fit the regression model
      model = LinearRegression()
      model.fit(features_scaled, target)
      predictions = model.predict(features_scaled)
```

```
[7]: # Evaluate the model
      r2 = r2_score(target, predictions)
      mse = mean_squared_error(target, predictions)
      mae = mean_absolute_error(target, predictions)
      sse = ((target - predictions) ** 2).sum()
```

```
[8]: print(f'R^2: {r2}')
      print(f'MSE: {mse}')
      print(f'MAE: {mae}')
      print(f'SSE: {sse}')
```

R<sup>2</sup>: 0.7480779394596491  
MSE: 1.2535922676228733e-05  
MAE: 0.002611873324558308  
SSE: 0.007132940002774149