Exercise2

July 17, 2023

1 Importing Modules

```python
[1]: import pandas as pd
     from sklearn.linear_model import LinearRegression
     from sklearn.model_selection import cross_validate
     import matplotlib.pyplot as plt
```

```python
[2]: df = pd.read_csv('output.csv')

     X = df[['displacement', 'horsepower', 'weight', 'acceleration']]
     y = df[['mpg']]
```

```python
[3]: model = LinearRegression()
     model.fit(X,y)
     predictions = model.predict(X)
```

```python
[4]: cv_results = cross_validate(model, X, y, cv=10,␣
      ↪scoring='neg_mean_squared_error')
```

```python
[5]: mse_scores = -cv_results['test_score']

     print("MSE scores:", mse_scores)
     print("Mean MSE score:", mse_scores.mean())
```

```
MSE scores: [12.35925295 19.56226976 25.29890435 13.6002892   9.05639677
6.79071645
 13.05219584 16.66019172 57.08345981 35.98499697]
Mean MSE score: 20.944867383192033
```