D:\Projects\assignments\ml-584\Project1-main\Project1-main\.venv\Scripts\python.exe "C:/Program Files/JetBrains/PyCharm Community Edition 2024.2.1/plugins/python-ce/helpers/pycharm/\_jb\_pytest\_runner.py" --path D:\Projects\assignments\ml-584\Project1-main\Project1-main\LassoHomotopy\tests\test\_LassoHomotopy.py

Testing started at 11:19 PM ...

Launching pytest with arguments D:\Projects\assignments\ml-584\Project1-main\Project1-main\LassoHomotopy\tests\test\_LassoHomotopy.py --no-header --no-summary -q in D:\Projects\assignments\ml-584\Project1-main\Project1-main\LassoHomotopy\tests

============================= test session starts =============================

collecting ... collected 8 items

test\_LassoHomotopy.py::test\_lasso\_collinearity PASSED [ 12%]

Lambda 0.1:

Zero Coefficients: 7/10

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 0.5:

Zero Coefficients: 7/10

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 1.0:

Zero Coefficients: 7/10

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 2.0:

Zero Coefficients: 7/10

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 0.1:

Zero Coefficients: 12/15

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 0.5:

Zero Coefficients: 12/15

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 1.0:

Zero Coefficients: 12/15

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 2.0:

Zero Coefficients: 12/15

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 0.1:

Zero Coefficients: 16/20

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 0.5:

Zero Coefficients: 16/20

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 1.0:

Zero Coefficients: 16/20

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

Lambda 2.0:

Zero Coefficients: 16/20

Active Features: []

Non-zero Coefficient Magnitudes: []

Mean Squared Error: inf

R-squared: -inf

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data1.csv]

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data2.csv]

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data3.csv]

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data4.csv]

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data5.csv]

test\_LassoHomotopy.py::test\_lasso\_on\_dataset[D:\\Projects\\assignments\\ml-584\\Project1-main\\Project1-main\\LassoHomotopy\\test\_data\\data6.csv]

test\_LassoHomotopy.py::test\_coefficient\_sparsity PASSED [ 25%]

==================================================

Dataset: data1.csv

Feature Matrix Shape: (5000, 3)

Target Vector Shape: (5000,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 0/3

Active Features: [np.int64(1), np.int64(2), np.int64(0)]

Mean Squared Error: 0.010054232516185766

R-squared: 0.99666741485383

PASSED [ 37%]

==================================================

Dataset: data2.csv

Feature Matrix Shape: (7500, 6)

Target Vector Shape: (7500,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 0/6

Active Features: [np.int64(0), np.int64(3), np.int64(1), np.int64(4), np.int64(2), np.int64(5)]

Mean Squared Error: 0.039431395471241526

R-squared: 0.9979081290616738

PASSED [ 50%]

==================================================

Dataset: data3.csv

Feature Matrix Shape: (7500, 6)

Target Vector Shape: (7500,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 0/6

Active Features: [np.int64(0), np.int64(3), np.int64(1), np.int64(4), np.int64(2), np.int64(5)]

Mean Squared Error: 0.039431395471241526

R-squared: 0.9979081290616738

PASSED [ 62%]

==================================================

Dataset: data4.csv

Feature Matrix Shape: (5000, 12)

Target Vector Shape: (5000,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 1/12

Active Features: [np.int64(7), np.int64(6), np.int64(5), np.int64(4), np.int64(3), np.int64(2), np.int64(1), np.int64(0), np.int64(9), np.int64(8), np.int64(11), np.int64(10)]

Mean Squared Error: 0.09049540910159763

R-squared: 0.999920137163458

PASSED [ 75%]

==================================================

Dataset: data5.csv

Feature Matrix Shape: (6000, 16)

Target Vector Shape: (6000,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 1/16

Active Features: [np.int64(0), np.int64(1), np.int64(2), np.int64(3), np.int64(4), np.int64(5), np.int64(6), np.int64(7), np.int64(15), np.int64(9), np.int64(14), np.int64(10), np.int64(13), np.int64(11), np.int64(8)]

Mean Squared Error: 0.16526036720978401

R-squared: 0.9927387645399066

PASSED [ 87%]

==================================================

Dataset: data6.csv

Feature Matrix Shape: (7500, 20)

Target Vector Shape: (7500,)

Hyperparameters:

- lambda\_penalty: 1.0

- max\_iterations: 500

- tolerance: 0.0001

==================================================

Model Results:

Zero Coefficients: 2/20

Active Features: [np.int64(0), np.int64(1), np.int64(2), np.int64(3), np.int64(4), np.int64(5), np.int64(6), np.int64(7), np.int64(13), np.int64(12), np.int64(11), np.int64(18), np.int64(8), np.int64(10), np.int64(15), np.int64(16), np.int64(9), np.int64(14), np.int64(19)]

Mean Squared Error: 0.24708822878663914

R-squared: 0.999942584885369

PASSED [100%]Found test data folder: D:\Projects\assignments\ml-584\Project1-main\Project1-main\LassoHomotopy\test\_data

================= 8 passed, 36 warnings in 228.20s (0:03:48) ==================

Process finished with exit code 0