"/Users/zhangke/PycharmProjects/DataScience-Ke Zhang/pythonProject/.venv/bin/python" /Users/zhangke/PycharmProjects/DataScience-Ke Zhang/HW9/HW9\_Code.py

best\_std\_err is 8

The best three features is ['Gasoline Price', 'Minimum wage', 'Physicians per thousand']

Accuracy by Original Features: 0.45705070167496603

PC 1 = Highly correlated directly with ['Life expectancy', 'Physicians per thousand', 'Minimum wage'] and indirectly with ['Fertility Rate', 'Infant mortality', 'Birth Rate']

PC 2 = Highly correlated directly with ['Co2-Emissions', 'GDP', 'Population'] and indirectly with ['Life expectancy', 'Physicians per thousand', 'Gasoline Price']

PC 3 = Highly correlated directly with ['Gasoline Price', 'Minimum wage', 'Maternal mortality ratio'] and indirectly with ['Population', 'Life expectancy', 'Unemployment rate']

/Users/zhangke/PycharmProjects/DataScience-Ke Zhang/pythonProject/.venv/lib/python3.12/site-packages/sklearn/neighbors/\_classification.py:238: DataConversionWarning: A column-vector y was passed when a 1d array was expected. Please change the shape of y to (n\_samples,), for example using ravel().

return self.\_fit(X, y)

/Users/zhangke/PycharmProjects/DataScience-Ke Zhang/pythonProject/.venv/lib/python3.12/site-packages/sklearn/neighbors/\_classification.py:238: DataConversionWarning: A column-vector y was passed when a 1d array was expected. Please change the shape of y to (n\_samples,), for example using ravel().

return self.\_fit(X, y)

/Users/zhangke/PycharmProjects/DataScience-Ke Zhang/pythonProject/.venv/lib/python3.12/site-packages/sklearn/utils/validation.py:1339: DataConversionWarning: A column-vector y was passed when a 1d array was expected. Please change the shape of y to (n\_samples, ), for example using ravel().

y = column\_or\_1d(y, warn=True)

Accuracy by PCA: 0.42841783612494344

/Users/zhangke/PycharmProjects/DataScience-Ke Zhang/pythonProject/.venv/lib/python3.12/site-packages/sklearn/neighbors/\_classification.py:238: DataConversionWarning: A column-vector y was passed when a 1d array was expected. Please change the shape of y to (n\_samples,), for example using ravel().

return self.\_fit(X, y)

Accuracy by LDA: 0.4169873245812585

Process finished with exit code 0