```
C:\Users\Alex Anderson\Documents\EECS_658\AlexAnderson_Assignment2>python CompareMLModels.py

Output:



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Naïve Baysian (GaussianNB):


Accuracy:

0.96

Confusion Matrix:

[[50  0  0]
 [ 0 47  3]
 [ 0  3 47]]

Classification Report:

                precision    recall  f1-score   support

    Iris-setosa       1.00      1.00      1.00        50
Iris-versicolor       0.94      0.94      0.94        50
```

```
Iris-versicolor       0.94      0.94      0.94        50
 Iris-virginica       0.94      0.94      0.94        50

      accuracy                           0.96       150
     macro avg       0.96      0.96      0.96       150
  weighted avg       0.96      0.96      0.96       150


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Linear regression (LinearRegression):


Accuracy:

0.9666666666666667

Confusion Matrix:

[[50  0  0]
 [ 0 48  2]
 [ 0  3 47]]

Classification Report:

              precision    recall  f1-score   support

           0       1.00      1.00      1.00        50
           1       0.94      0.96      0.95        50
```

```
           2       0.96      0.94      0.95        50

    accuracy                           0.97       150
   macro avg       0.97      0.97      0.97       150
weighted avg       0.97      0.97      0.97       150


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Polynomial of degree 2 regression (LinearRegression):


Accuracy:

0.96

Confusion Matrix:

[[50  0  0  0]
 [ 0 49  1  0]
 [ 0  4 45  1]
 [ 0  0  0  0]]

Classification Report:
```

```
              precision    recall  f1-score   support

         0.0       1.00      1.00      1.00        50
         1.0       0.92      0.98      0.95        50
         2.0       0.98      0.90      0.94        50
         3.0       0.00      0.00      0.00         0

    accuracy                           0.96       150
   macro avg       0.73      0.72      0.72       150
weighted avg       0.97      0.96      0.96       150


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Polynomial of degree 3 regression (LinearRegression) :


Accuracy:

0.9066666666666666

Confusion Matrix:

[[47  3  0  0]
 [ 1 47  2  0]
 [ 1  5 42  2]
 [ 0  0  0  0]]

Classification Report:
```

```
         0.0       0.96      0.94      0.95        50
         1.0       0.85      0.94      0.90        50
         2.0       0.95      0.84      0.89        50
         3.0       0.00      0.00      0.00         0

    accuracy                           0.91       150
   macro avg       0.69      0.68      0.68       150
weighted avg       0.92      0.91      0.91       150


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kNN (KNeighborsClassifier) :


Accuracy:

0.94

Confusion Matrix:

[[50  0  0]
 [ 0 48  2]
 [ 0  7 43]]

Classification Report:

              precision    recall  f1-score   support
```

```
           0       1.00      1.00      1.00        50
           1       0.87      0.96      0.91        50
           2       0.96      0.86      0.91        50

    accuracy                           0.94       150
   macro avg       0.94      0.94      0.94       150
weighted avg       0.94      0.94      0.94       150


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LDA (LinearDiscriminantAnalysis):


Accuracy:

0.94

Confusion Matrix:

[[50  0  0]
 [ 0 48  2]
 [ 1  6 43]]

Classification Report:

              precision    recall  f1-score   support

           0       0.98      1.00      0.99        50
           1       0.89      0.96      0.92        50
           2       0.96      0.86      0.91        50

    accuracy                           0.94       150
   macro avg       0.94      0.94      0.94       150
weighted avg       0.94      0.94      0.94       150
```

```
QDA (QuadraticDiscriminantAnalysis):


Accuracy:

0.7533333333333333

Confusion Matrix:

[[46  4  0]
 [ 0 40 10]
 [ 0 23 27]]

Classification Report:

              precision    recall  f1-score   support

           0       1.00      0.92      0.96        50
           1       0.60      0.80      0.68        50
           2       0.73      0.54      0.62        50

    accuracy                           0.75       150
   macro avg       0.78      0.75      0.75       150
weighted avg       0.78      0.75      0.75       150
```