* **Logistic Regression**:

1. Accuracy (0.597):

- The accuracy is a measure of overall correctness in predicting the states.

- In this case, the model achieved an accuracy of approximately 59.7%, indicating that about 59.7% of the predictions were correct.

2. Precision (0.592):

- Precision is a measure of how many correctly predicted instances belong to the predicted class.

- A precision of around 59.2% suggests that when the model predicts a particular state, it is correct about 59.2% of the time.

3. Recall (0.597):

- Recall (or Sensitivity) is a measure of how many actual instances of a class were correctly predicted by the model.

- The recall of approximately 59.7% indicates that the model is able to capture about 59.7% of the instances of the states.

4. F1 Score (0.591):

- The F1 score is the harmonic mean of precision and recall and provides a balanced measure between the two.

- A F1 score of approximately 59.1% suggests a balance between precision and recall, taking into account both false positives and false negatives.

* **SVM one-versus-one:**

1. Accuracy (0.849):

- The accuracy is approximately 84.9%, indicating that the SVM Classifier, with a one-vs-one strategy, correctly predicted the states about 84.9% of the time.

2. Precision (0.850):

- Precision is around 85%, suggesting that when the SVM Classifier predicts a particular state, it is correct about 85% of the time.

3. Recall (0.849):

- The recall is approximately 84.9%, indicating that the SVM Classifier captures about 84.9% of the instances of the states.

4. F1 Score (0.848):

- The F1 score is around 84.8%, providing a balanced measure between precision and recall. It suggests a good balance between avoiding false positives and false negatives.

* **SVM one-versus-all**

1. Accuracy (0.849):
   * The accuracy is approximately 84.9%, indicating that the SVM Classifier, with a one-vs-all strategy, correctly predicted the states about 84.9% of the time.
2. Precision (0.850):
   * Precision is around 85%, suggesting that when the SVM Classifier predicts a particular state, it is correct about 85% of the time.
3. Recall (0.849):
   * The recall is approximately 84.9%, indicating that the SVM Classifier captures about 84.9% of the instances of the states.
4. F1 Score (0.848):
   * The F1 score is around 84.8%, providing a balanced measure between precision and recall. It suggests a good balance between avoiding false positives and false negatives.

* **Naive Bayes Classifier**

1. Accuracy (0.258):

- The accuracy is approximately 25.8%, indicating that the Naive Bayes model correctly predicted the states only about 25.8% of the time.

2. Precision (0.302):

- Precision is around 30.2%, suggesting that when the Naive Bayes model predicts a particular state, it is correct about 30.2% of the time.

3. Recall (0.258):

- The recall is approximately 25.8%, indicating that the Naive Bayes model captures about 25.8% of the instances of the states.

4. F1 Score (0.249):

- The F1 score is around 24.9%, providing a balanced measure between precision and recall. It suggests a relatively low balance between avoiding false positives and false negatives.

* **Custom Neural Network**

The model's performance on the testing dataset is consistently high, with an average testing accuracy of approximately 92.2% and the latest testing accuracy slightly improved to 93.3%. This suggests that the model is effective in making accurate predictions on unseen data.

Similarly, both average and latest testing precision scores are notably high, with average precision around 92.4% and the latest precision at 93.3%. This indicates that when the model predicts a particular class, it is correct about 92.4% (average) to 93.3% (latest) of the time.

The recall scores for both average (92.2%) and latest (93.3%) testing show that the model is successful in capturing a substantial portion of the instances of the classes.

The F1 scores, which balance precision and recall, are also consistently high, with an average of 92.2% and the latest at 93.3%.