Logistic Regression Program 1 Output:

Number of records: 1046
Training time: 181000000 milliseconds
Coefficients:
beta0 = 1.01154
beta1 = -2.40436
Accuracy = 0.784553
Specificity = 0.862595
Sensitivity = 0.695652

Naïve Bayes Program 2 Output:

Number of records: 1046
Training time: 1000000 milliseconds
Accuracy: 0.776423
Precision: 0.8125
Recall: 0.678261
F1 Score: 0.739336

Write two paragraphs comparing and contrasting generative classifiers versus discriminative classifiers. Cite any sources you use.

Generative classifiers and discriminative classifiers are two popular approaches to solving classification problems in machine learning. The main difference between them is in the way they model the underlying probability distribution of the data.

Discriminative Classifiers model the conditional probability distribution of the class label given the input features. But Generative Classifiers model the joint probability distribution of the input features and the class labels.

Source: https://www.analyticsvidhya.com/blog/2021/07/deep-understanding-of-discriminative-and-generative-models-in-machine-learning/

Google this phrase: reproducible research in machine learning. Using 2-3 sources, at least one of which should be academic, write a couple of paragraphs of what this means, why it is important, and how reproducibility can be implemented. Cite your sources using any format.

Reproducible research in machine learning means that you can “repeatedly run your algorithm on certain datasets and obtain the same (or similar) results on a particular project” (Source 1). Reproducible research should “encompass the raw data generation process along with all of the programming syntax that transforms the data into the numerical summaries that accompany a scientific report” (Source 2). This would make sure that each step is “clearly documented and subjected to inspection.” (Source 2)

Source 1: https://www.decisivedge.com/blog/the-importance-of-reproducibility-in-machine-learning-applications

Source 2: https://www.nature.com/articles/s41746-019-0120-2 (Academic Article)