| **Model** | **Accuracy** | **True Neg (TN)** | **False Pos (FP)** | **False Neg (FN)** | **True Pos (TP)** |
| --- | --- | --- | --- | --- | --- |
| **Logistic Regression** | **0.9532** | **102** | **1** | **7** | **61** |
| **KNN (k=5)** | **0.9474** | **102** | **1** | **8** | **60** |
| **Linear SVM** | **0.9532** | **102** | **1** | **7** | **61** |
| **Kernel SVM (RBF)** | **0.9474** | **101** | **2** | **7** | **61** |
| **Naïve Bayes** | **0.9649** | **100** | **3** | **3** | **65** |
| **Decision Tree** | **0.9415** | **101** | **2** | **8** | **60** |
| **Random Forest (n=10)** | **0.9357** | **102** | **1** | **10** | **58** |
| **XGBoost** | **0.9474** | **102** | **1** | **8** | **60** |

Overall, all eight models performed well, with accuracy scores ranging from about 93.6% to 96.5%. The best-performing model was Naive Bayes, with an accuracy of 96.49% and the lowest number of false negatives (3), which is especially important in a medical setting where not catching a malignant tumor can be critical. Logistic Regression and Linear SVM followed at 95.32% accuracy, both showing a good balance of high true positives and low false negatives.

KNN, Kernel SVM, and XGBoost were around 94.74% accuracy, with similar confusion matrix patterns, each model had 8 false negatives but maintained low false positives. Decision Tree and Random Forest models were also slightly behind, with Random Forest misclassifying the most malignant cases (10 false negatives), which makes it less favorable in this case.

In summary, while all models performed reasonably well, Naive Bayes stood out with the highest accuracy and the fewest critical errors, making it the most reliable choice. Models like Random Forest, though powerful in some potential other scenarios, may not be ideal when minimizing false negatives is a top priority.