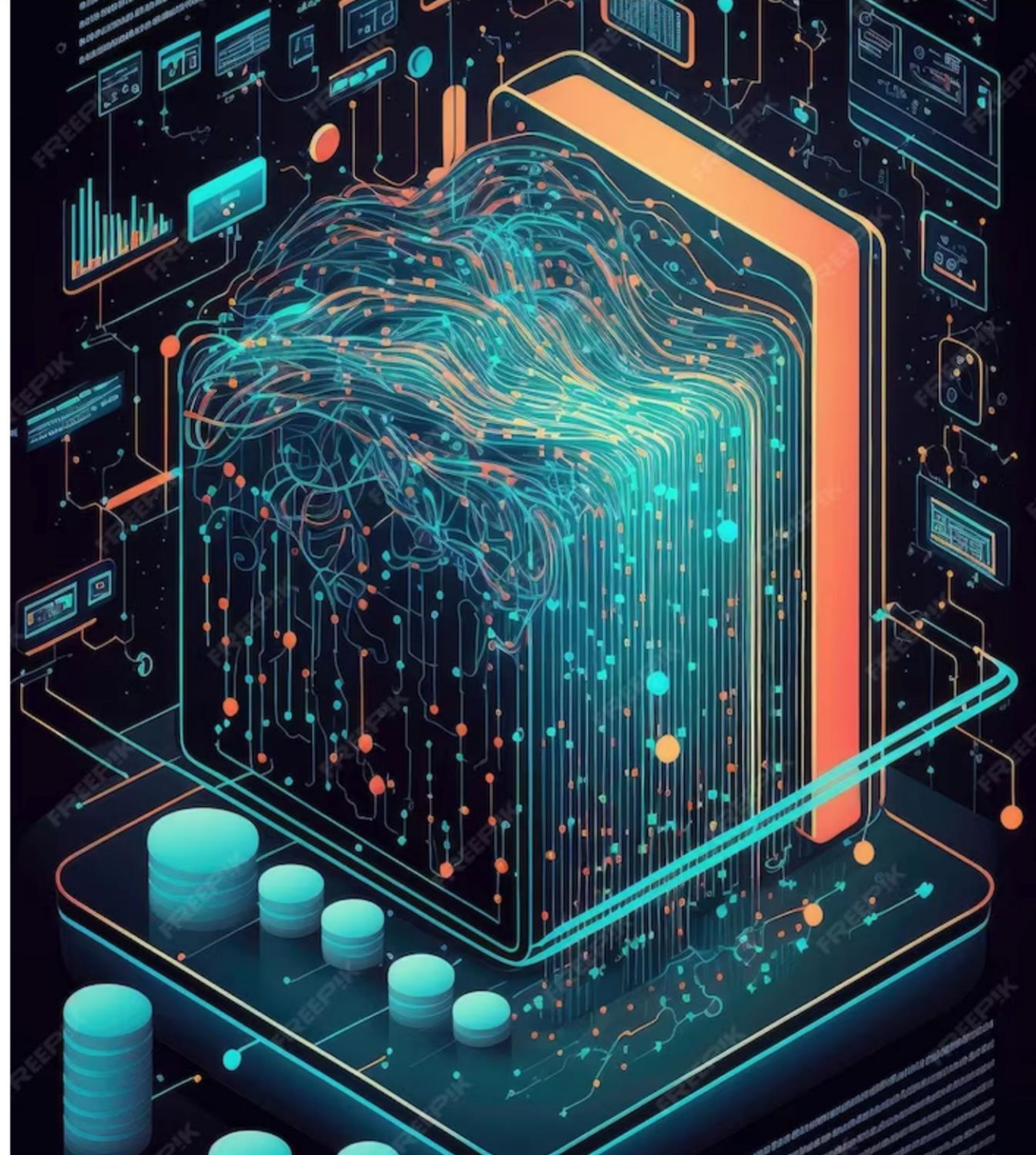# Optimizing Personalized Medicine and Healthcare through Predictive Modeling: Naive Bayes and Random Forest Approaches for Drug Classification

Naive Bayes Algorithm

Understanding the principles of the *Naive Bayes* algorithm for drug classification. Exploring its use in predicting drug response based on patient data and medical history.
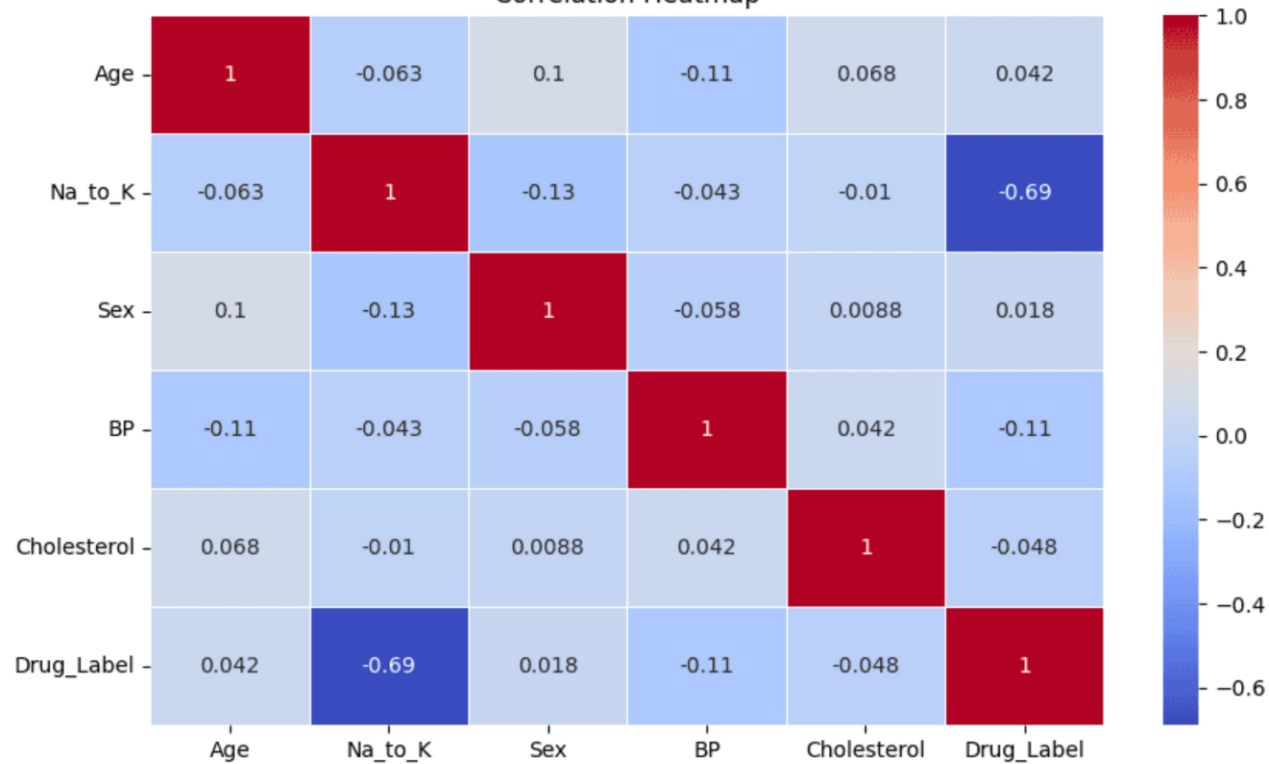
Random Forest Algorithm

Exploring the *Random Forest* algorithm and its application in drug classification. Discussing its ability to handle large datasets and provide accurate predictions for personalized medicine.
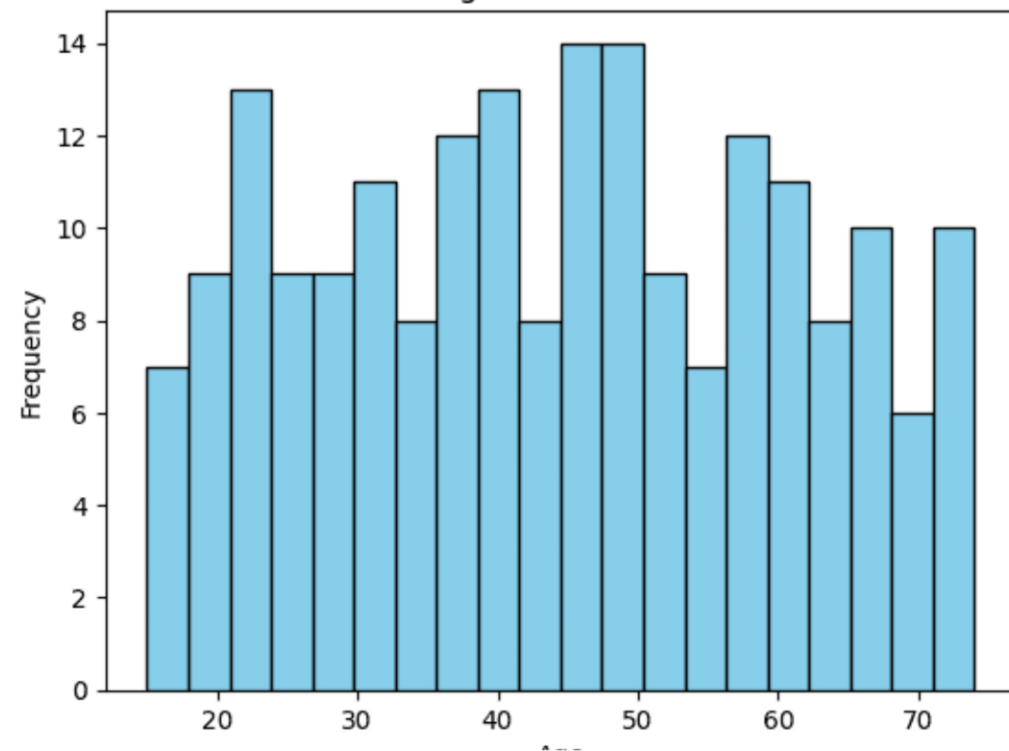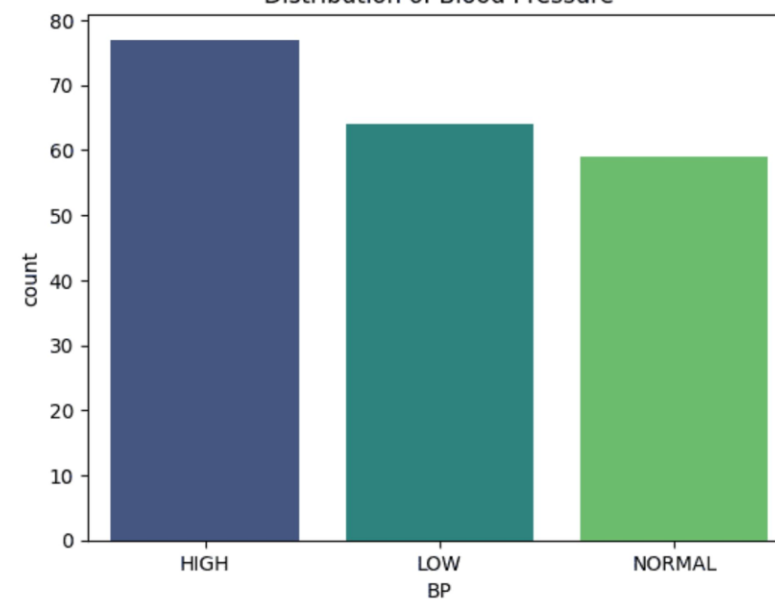
EDA

Exploratory Data analysis

Naive bayes Results
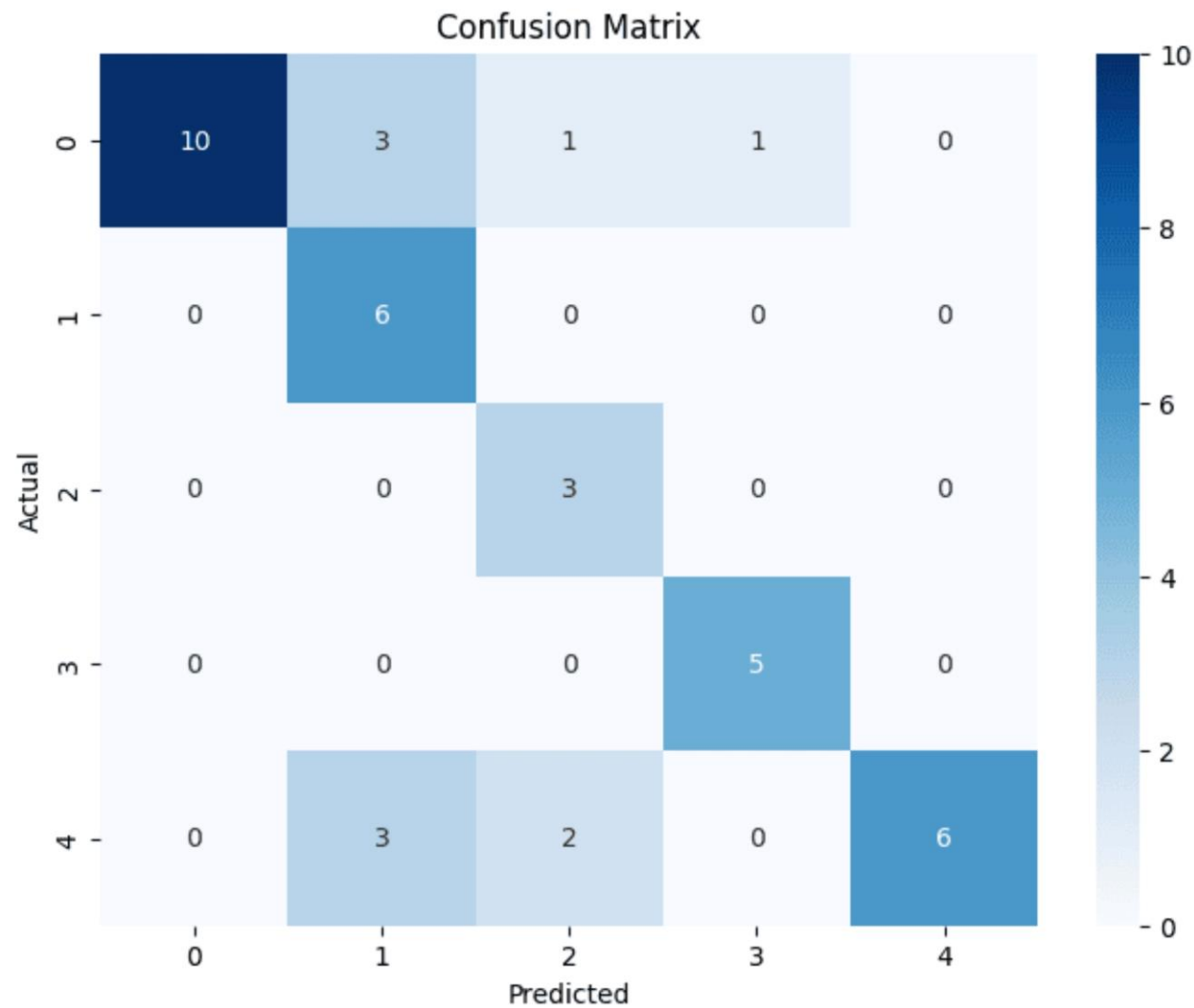

Confusion Matrix

Classification Report:

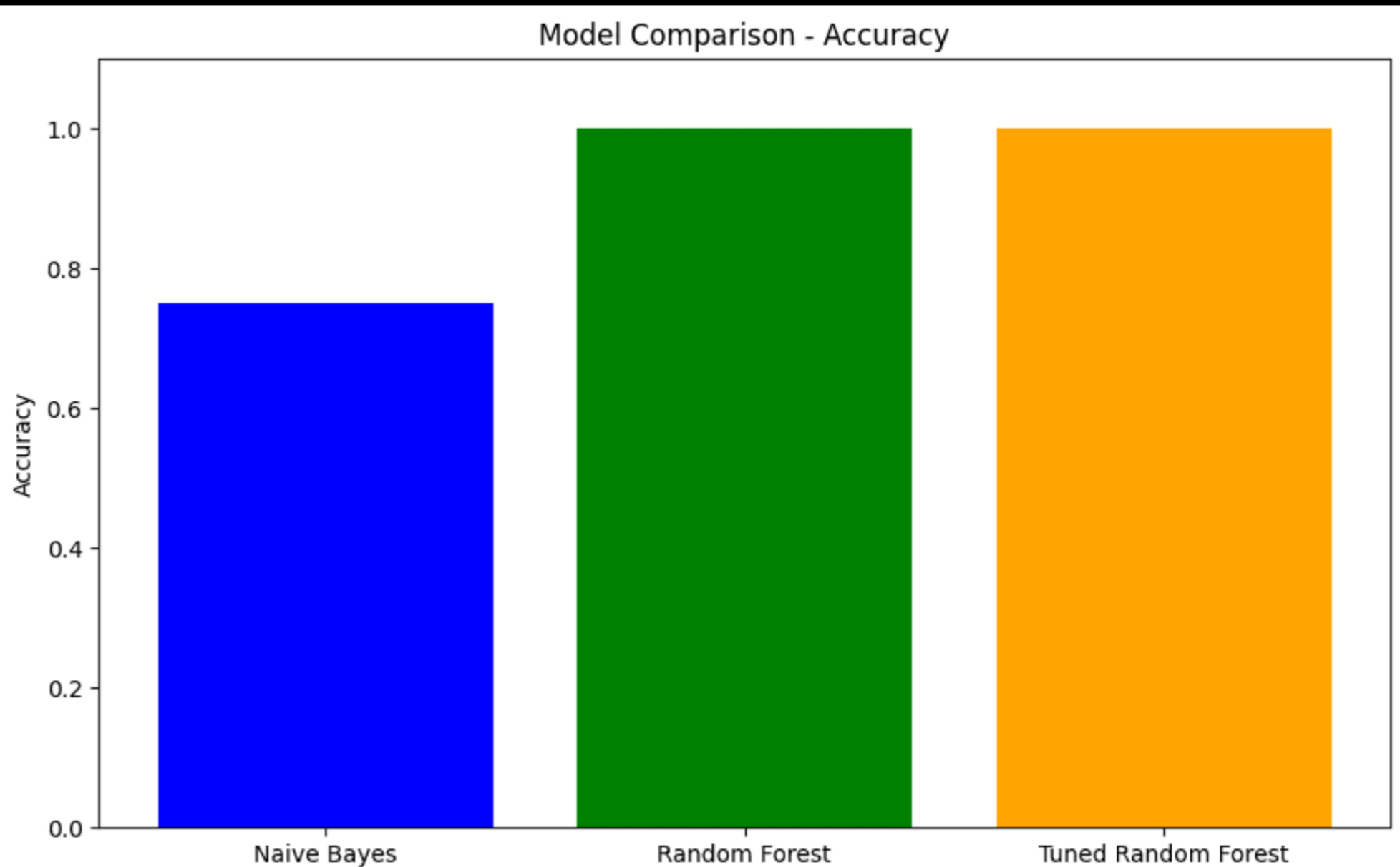|	precision	recall	f1-score	support
0	1.00	0.67	0.80	15
1	0.50	1.00	0.67	6
2	0.50	1.00	0.67	3
3	0.83	1.00	0.91	5
4	1.00	0.55	0.71	11
accuracy			0.75	40
macro avg	0.77	0.84	0.75	40
weighted avg	0.87	0.75	0.76	40

Random Forest Result
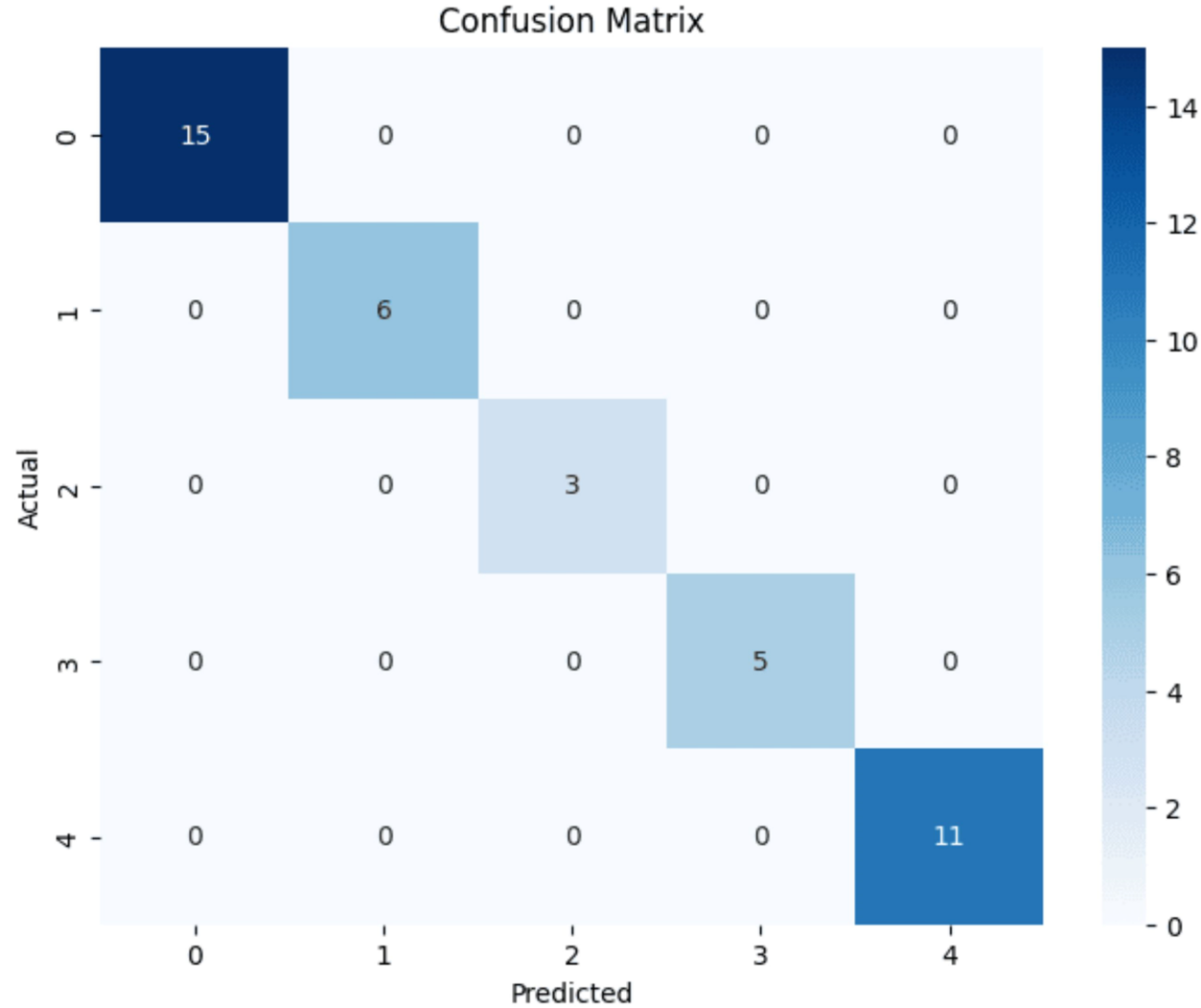
Tuned Random Forest
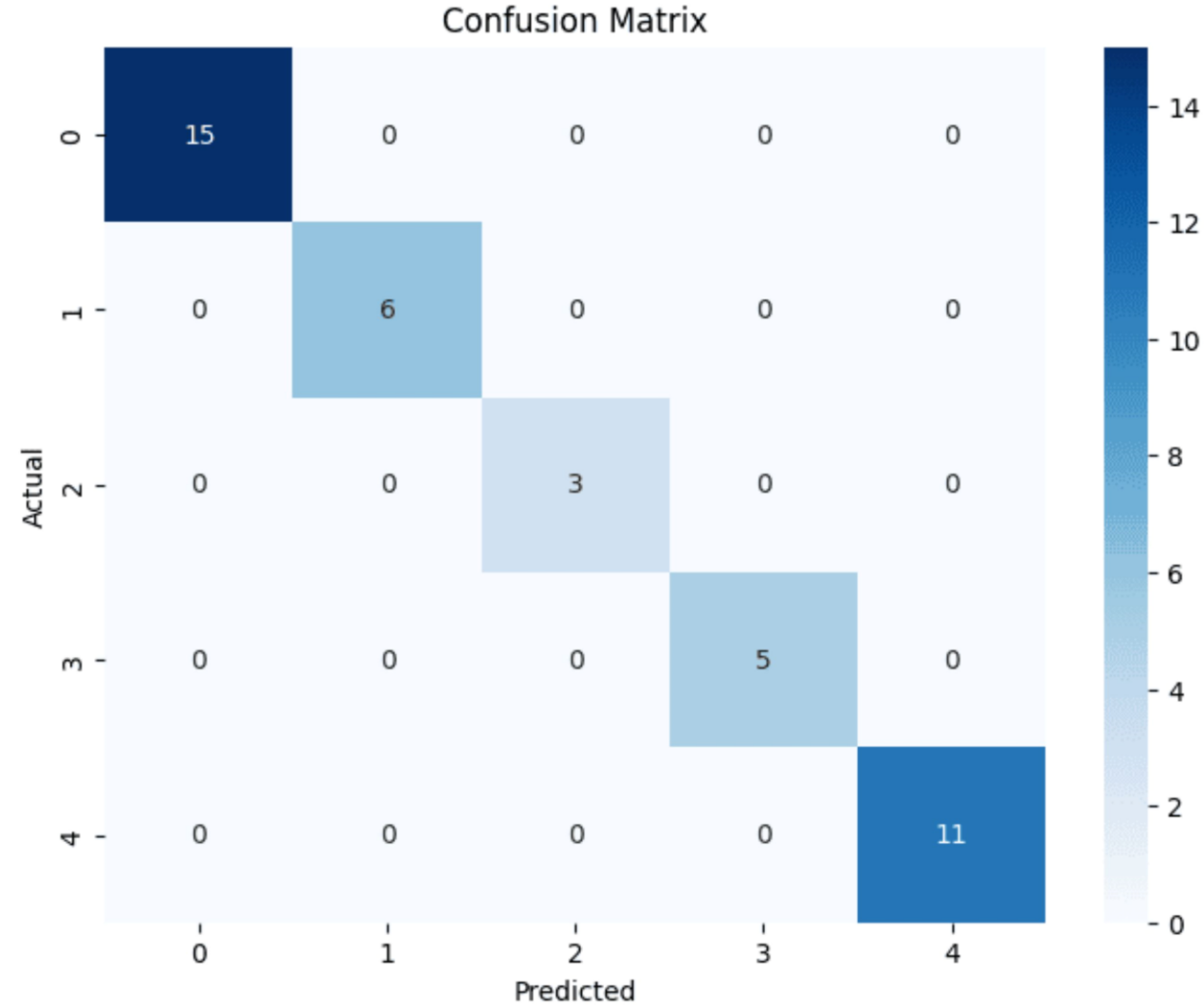
Comparison of the Models

Conclusion

Summarizing the potential of *Predictive Modeling* using Naive Bayes and Random Forest to optimize *Personalized Medicine* and revolutionize healthcare. Emphasizing the importance of leveraging data for tailored treatment.