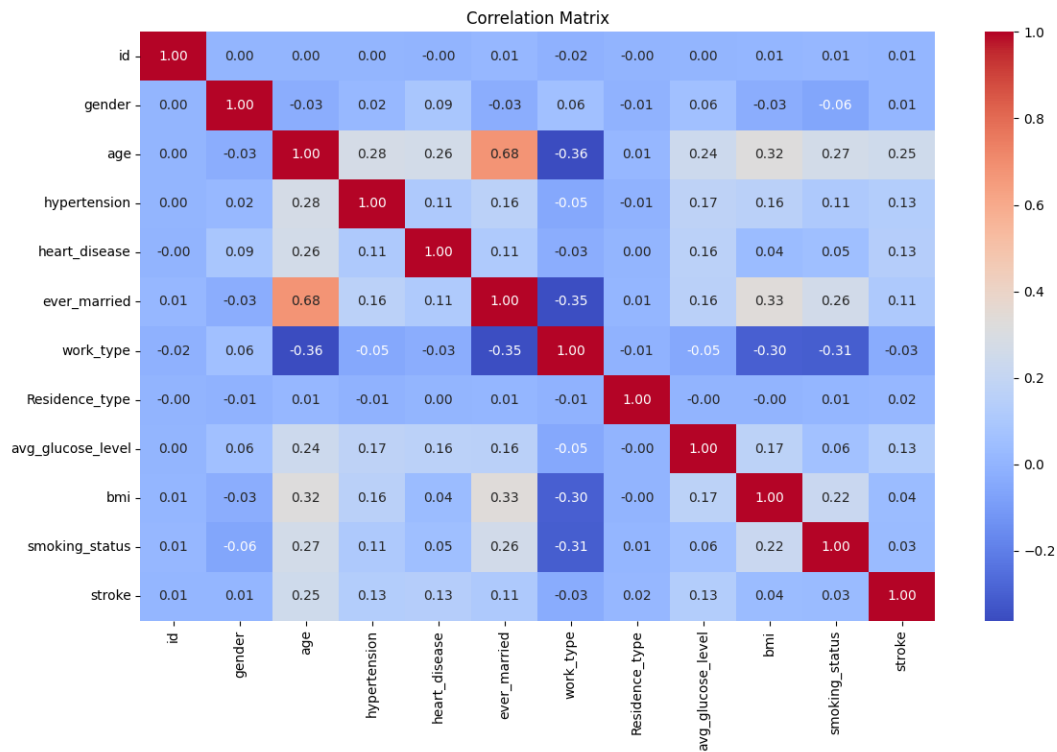
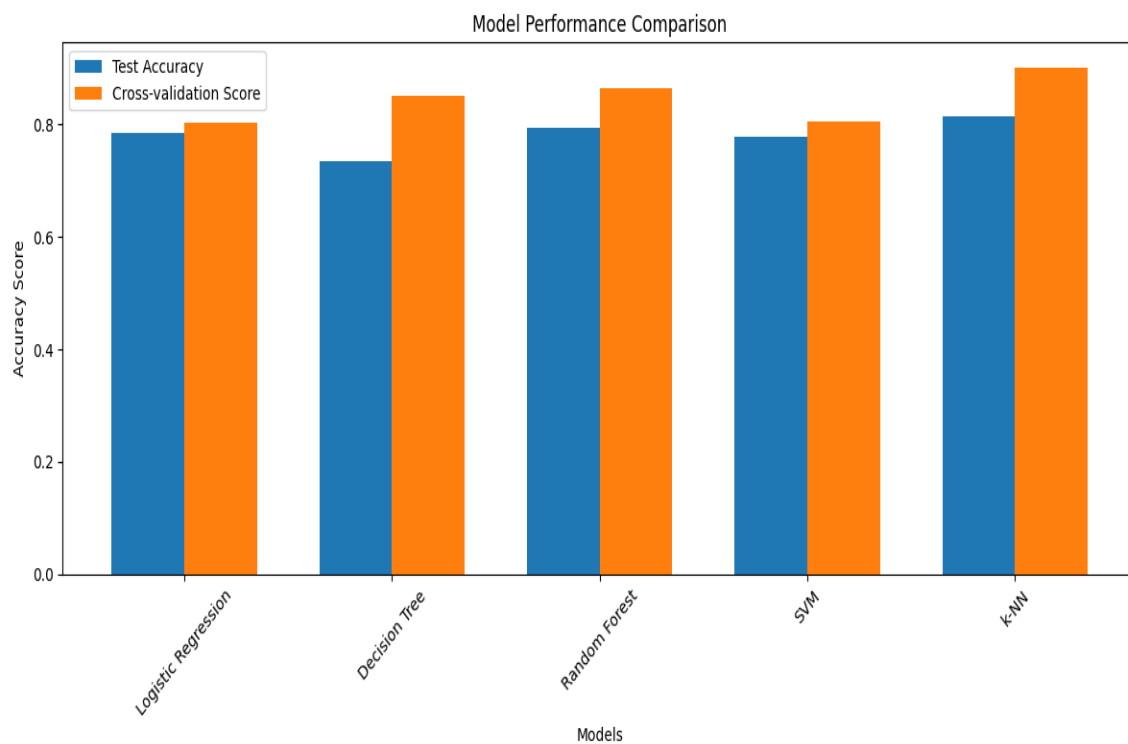


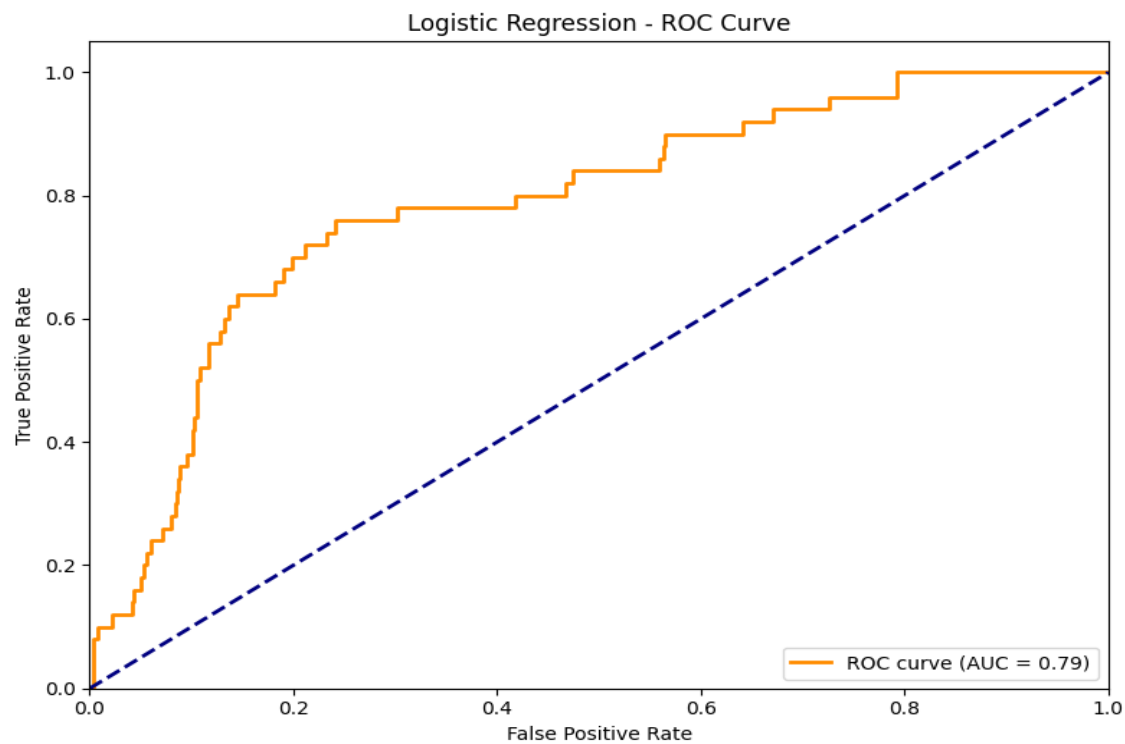
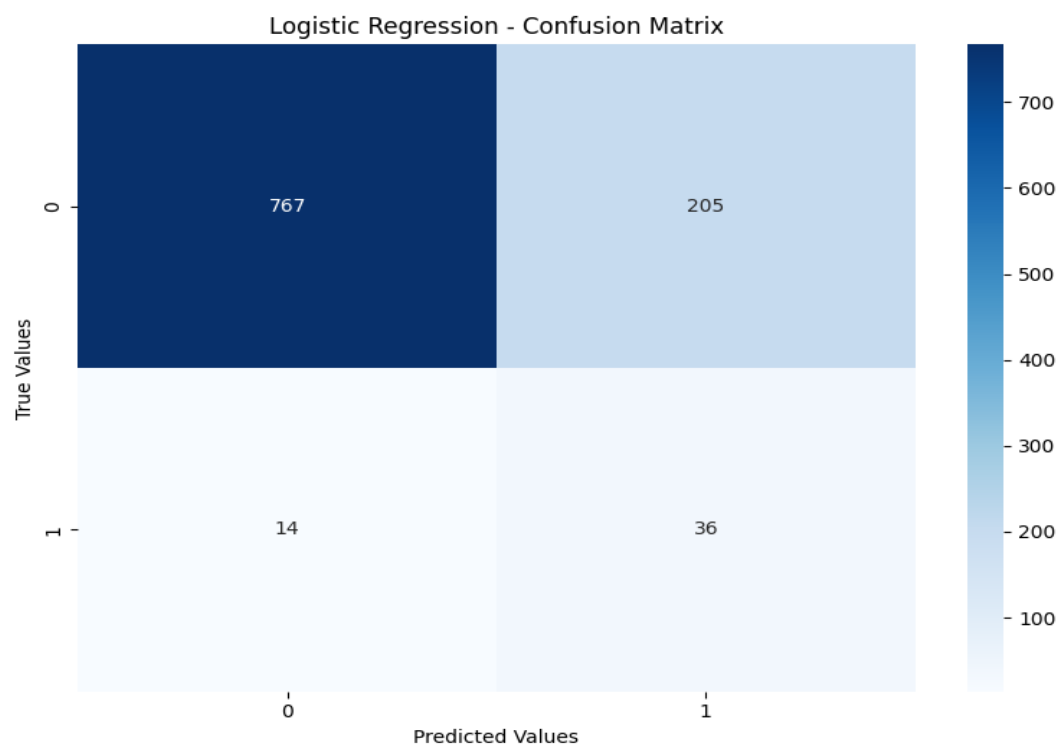
## Correlation Matrix



## Model Performance Comparison

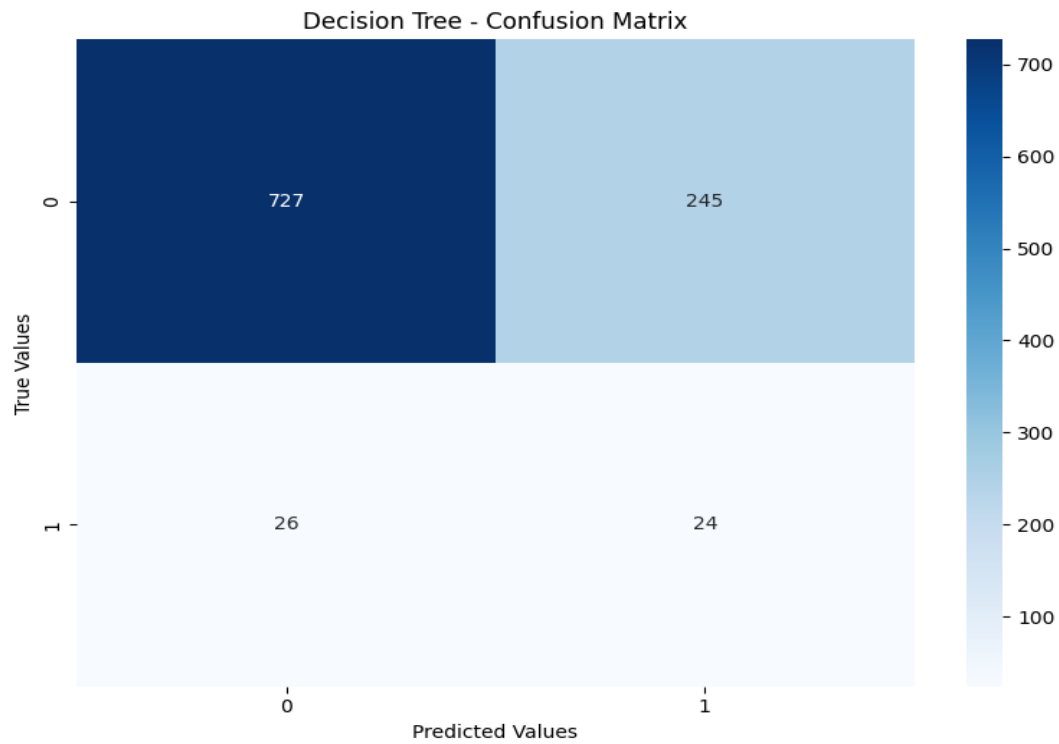


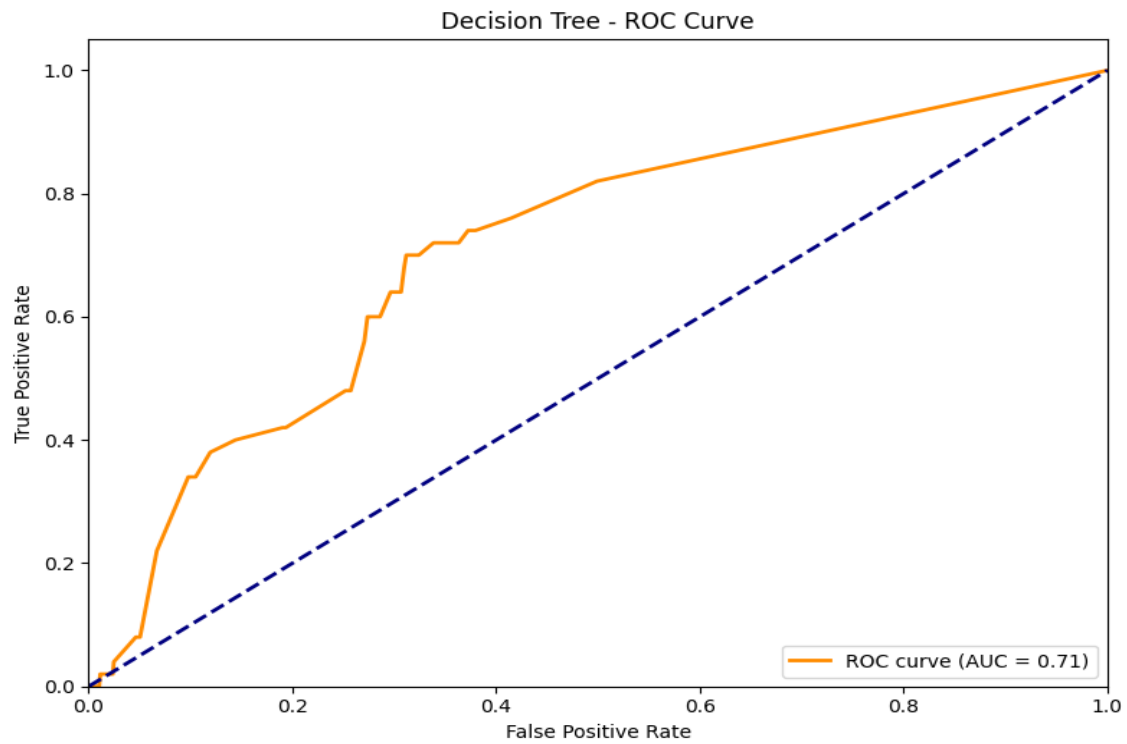
# Logistic Regression Model Results



Test Accuracy: 0.7857 Cross-validation Score: 0.8029 Best parameters: {'C': 0.1, 'max\_iter': 1000}

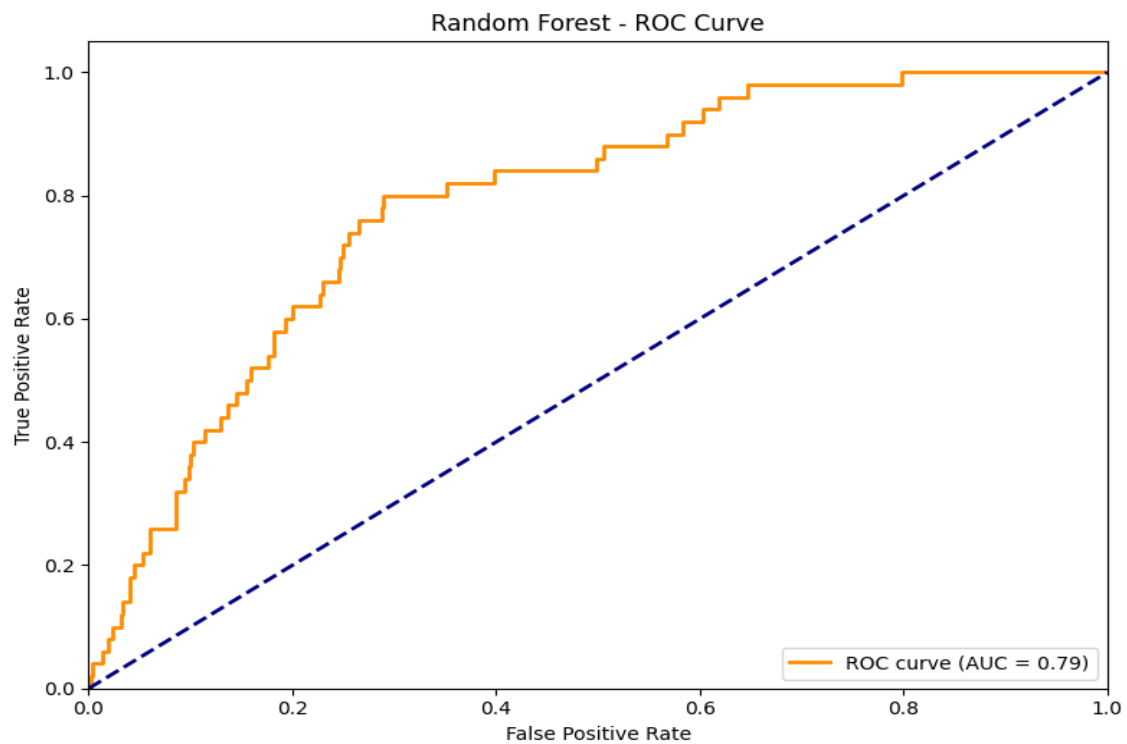
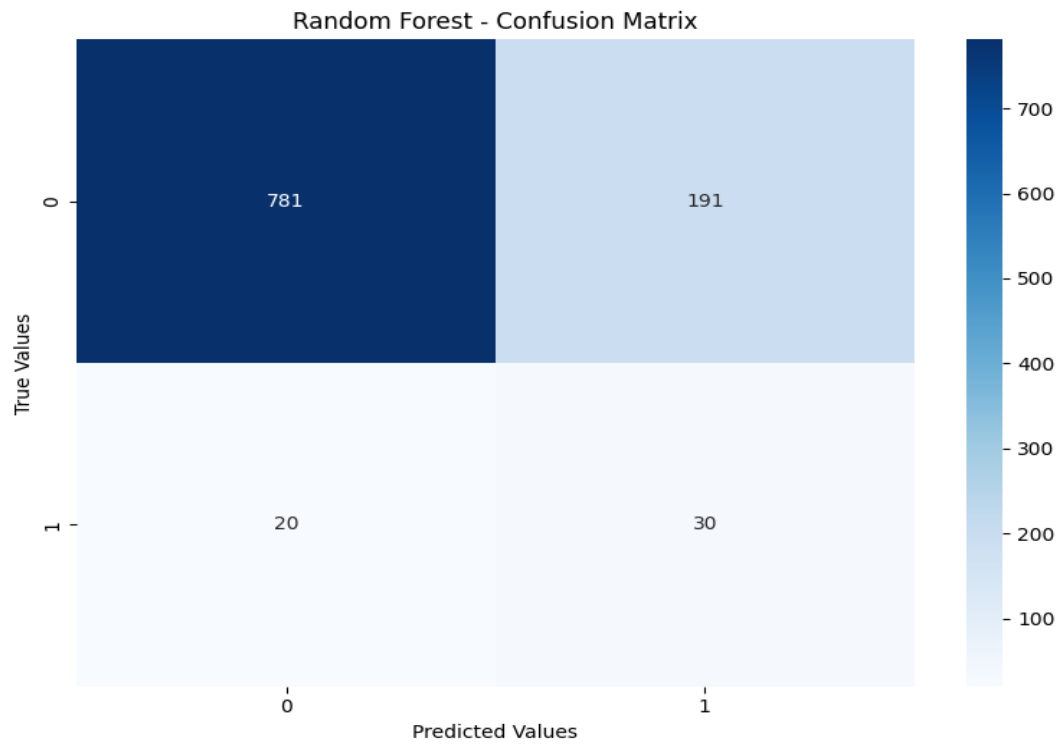
## Decision Tree Model Results





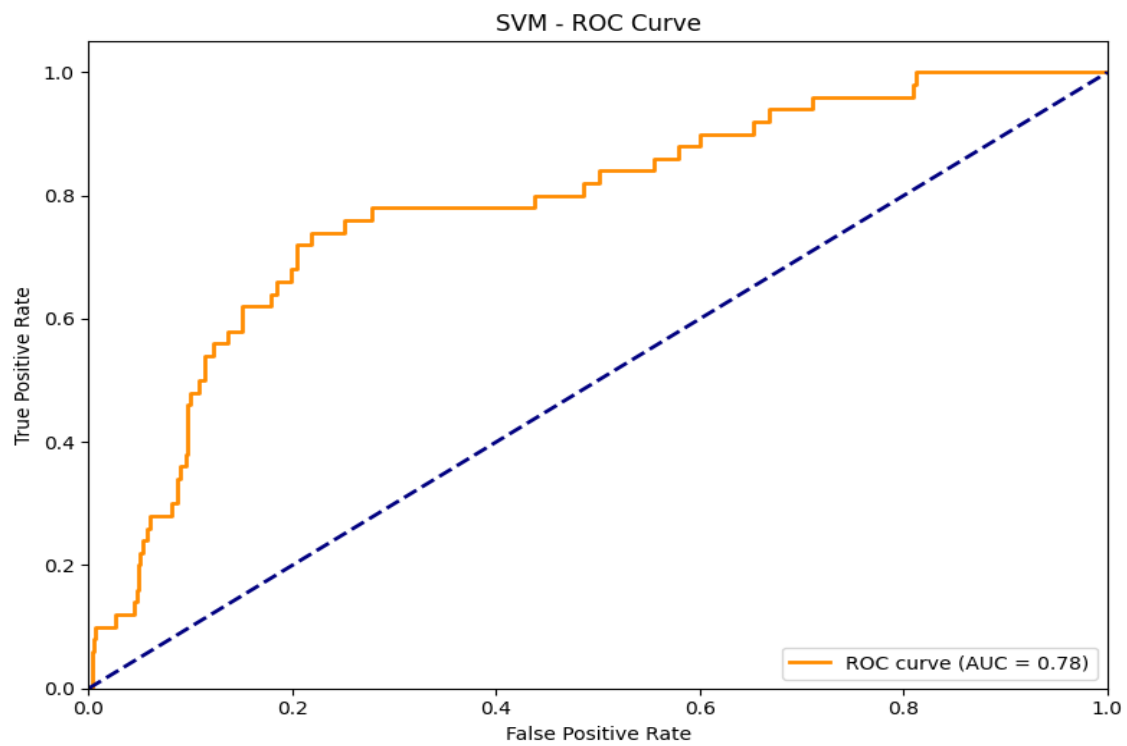
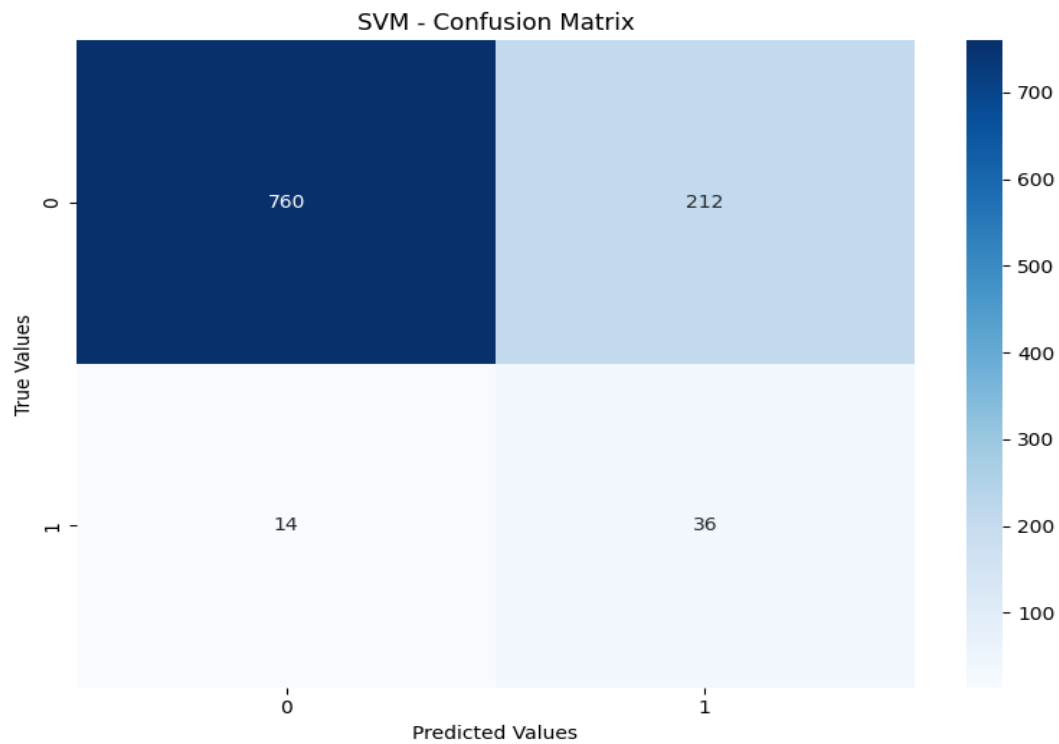
Test Accuracy: 0.7348 Cross-validation Score: 0.8516 Best parameters: {'max\_depth': 7, 'min\_samples\_split': 10}

## Random Forest Model Results



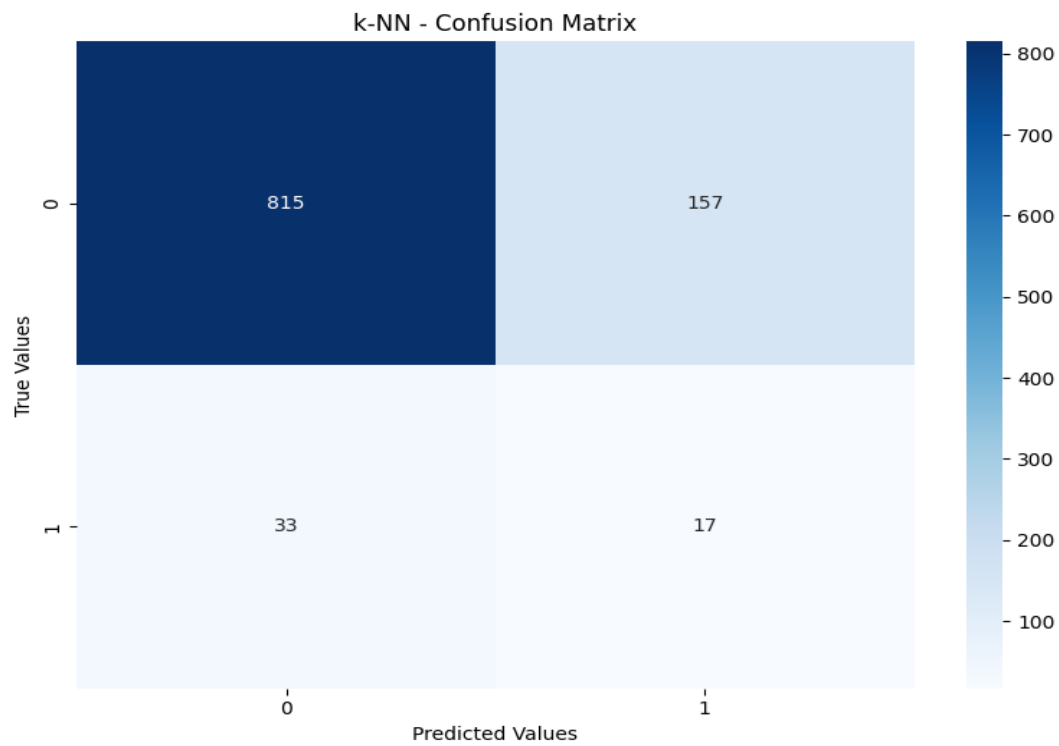
Test Accuracy: 0.7935 Cross-validation Score: 0.8642 Best parameters: {'max\_depth': 7, 'n\_estimators': 200}

## SVM Model Results

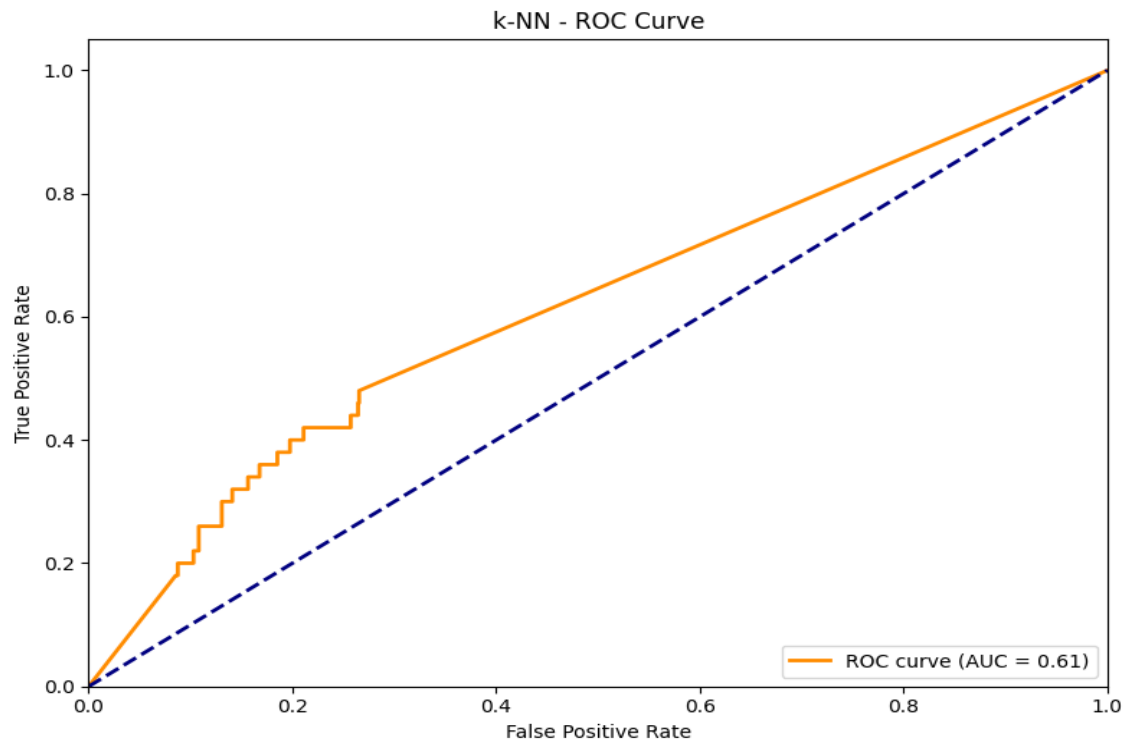


Test Accuracy: 0.7789 Cross-validation Score: 0.8055 Best parameters: {'C': 1, 'kernel': 'linear'}

## k-NN Model Results

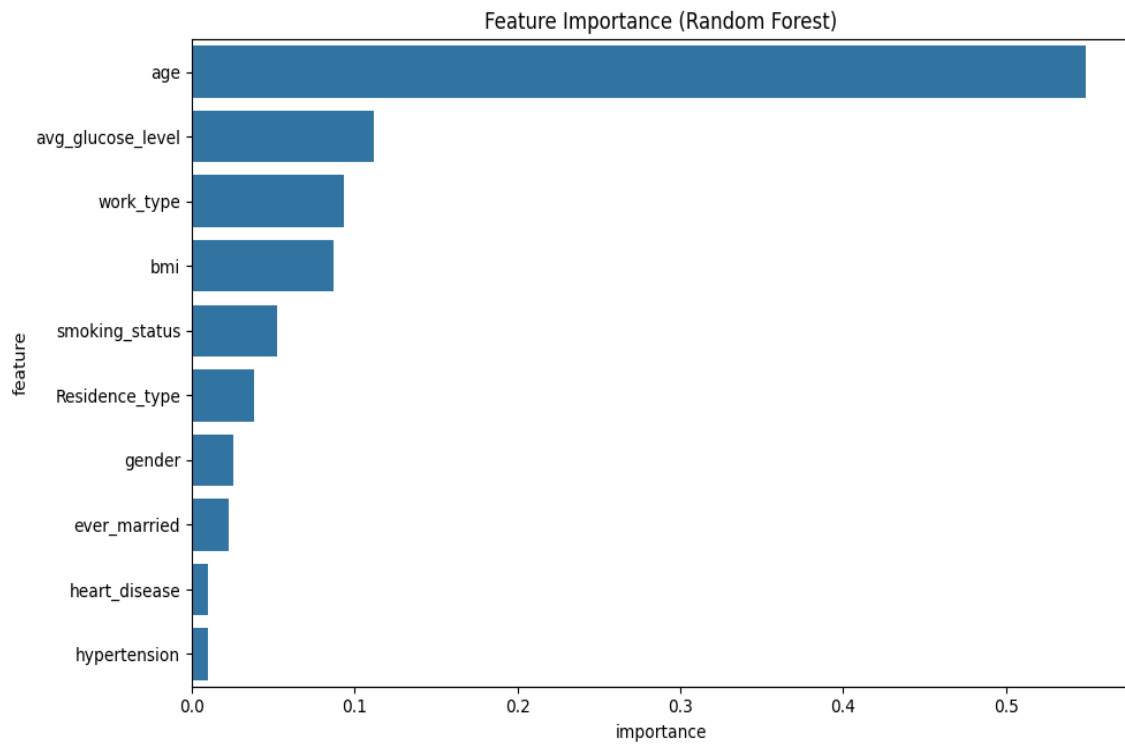






Test Accuracy: 0.8141 Cross-validation Score: 0.9010 Best parameters: {'n\_neighbors': 3, 'weights': 'distance'}

## Feature Importance (Random Forest)



## Best Model

Best performing model: k-NN Accuracy: 0.8141