```
...        id  gender   age  hypertension  heart_disease ever_married  \
    0    9046    Male  67.0             0              1          Yes
    1   51676  Female  61.0             0              0          Yes
    2   31112    Male  80.0             0              1          Yes
    3   60182  Female  49.0             0              0          Yes
    4    1665  Female  79.0             1              0          Yes

           work_type Residence_type  avg_glucose_level   bmi   smoking_status  \
    0         Private          Urban             228.69  36.6  formerly smoked
    1   Self-employed          Rural             202.21   NaN     never smoked
    2         Private          Rural             105.92  32.5     never smoked
    3         Private          Urban             171.23  34.4           smokes
    4   Self-employed          Rural             174.12  24.0     never smoked


       stroke
    0       1
    1       1
    2       1
    3       1
    4       1

After Encoding:
       gender   age  hypertension  heart_disease  ever_married  work_type  \
    0       1  67.0             0              1             1          2
    1       0  61.0             0              0             1          3
    2       1  80.0             0              1             1          2
    3       0  49.0             0              0             1          2
    4       0  79.0             1              0             1          3


       Residence_type  avg_glucose_level        bmi  smoking_status  stroke
    0               1             228.69  36.600000               1       1
    1               0             202.21  28.893237               2       1
    2               0             105.92  32.500000               2       1
    3               1             171.23  34.400000               3       1
    4               0             174.12  24.000000               2       1

===== DECISION TREE RESULTS =====
Accuracy: 0.9383561643835616

Confusion Matrix:
 [[956   4]
 [ 59   3]]
```
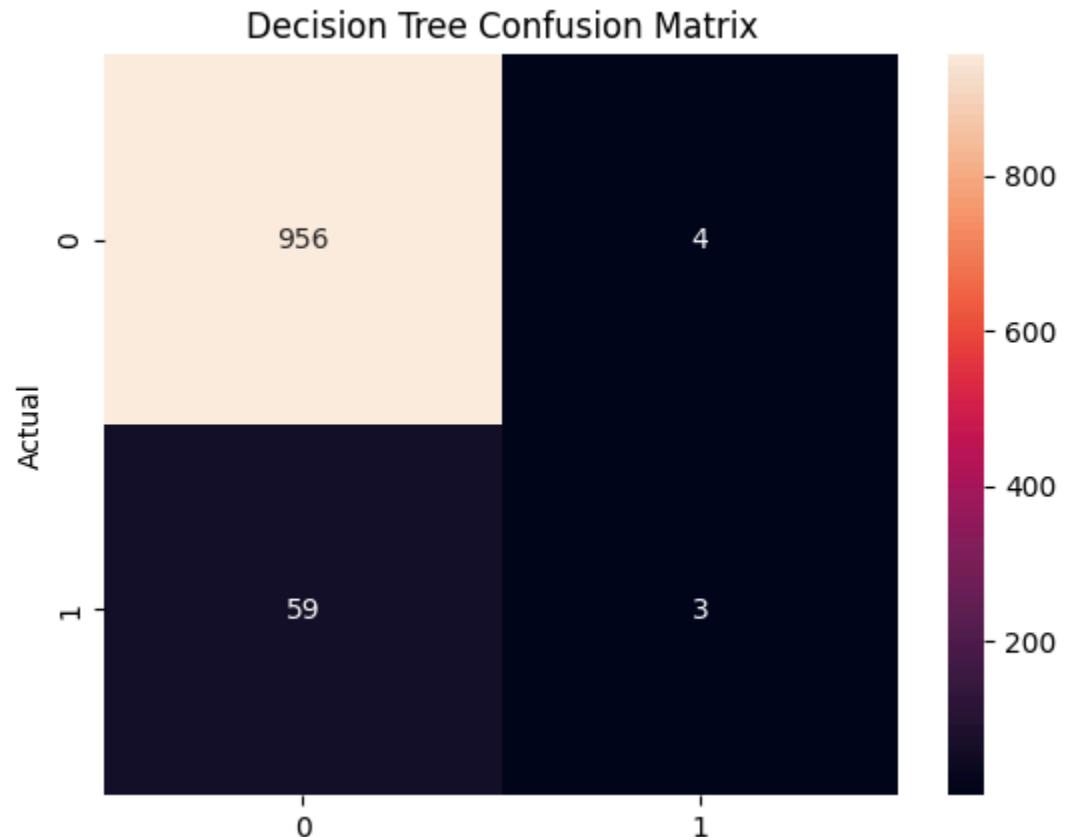
```
Classification Report:
              precision    recall  f1-score   support

           0       0.94      1.00      0.97       960
           1       0.43      0.05      0.09        62

    accuracy                           0.94      1022
   macro avg       0.69      0.52      0.53      1022
weighted avg       0.91      0.94      0.91      1022
```

## Decision Tree Confusion Matrix
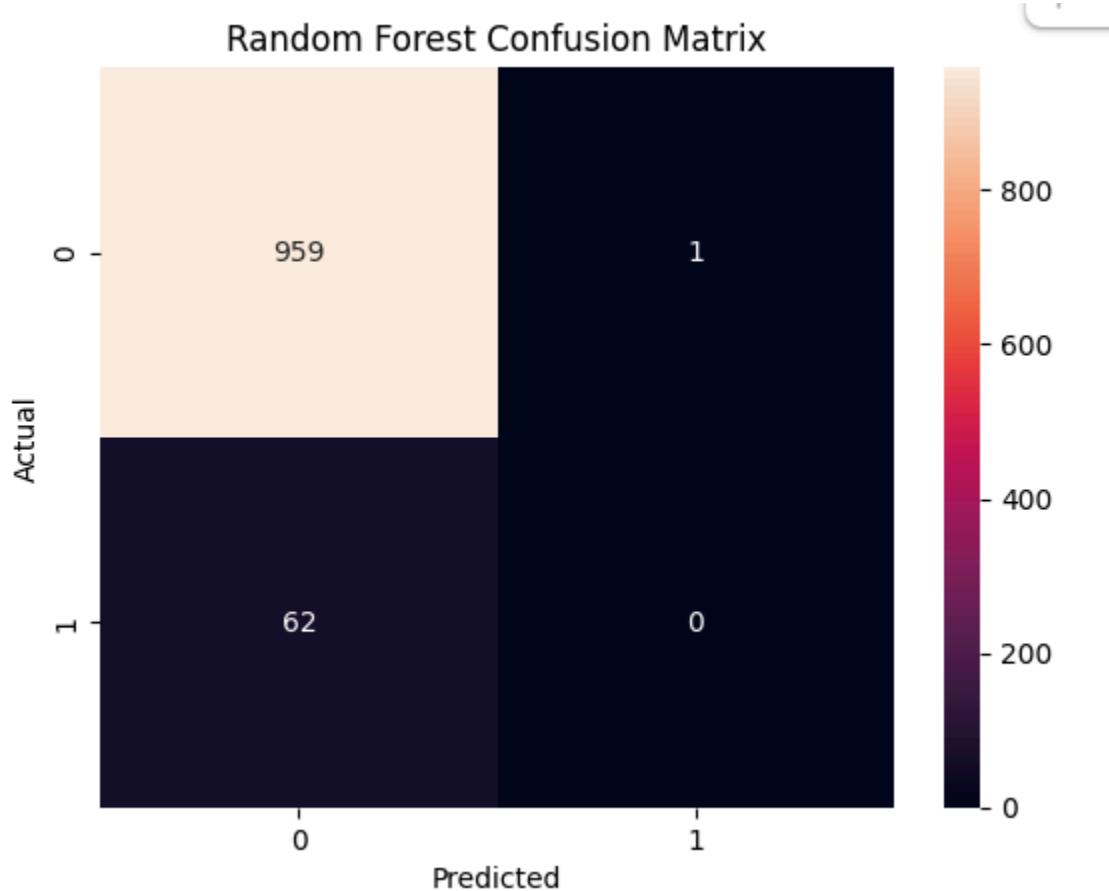
```
===== RANDOM FOREST RESULTS =====
Accuracy: 0.9383561643835616

Confusion Matrix:
 [[959    1]
 [ 62    0]]

Classification Report:
              precision    recall  f1-score   support

           0       0.94      1.00      0.97       960
           1       0.00      0.00      0.00        62

    accuracy                           0.94      1022
   macro avg       0.47      0.50      0.48      1022
weighted avg       0.88      0.94      0.91      1022
```

## Random Forest Confusion Matrix

# Model Accuracy Comparison