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```python
# Evaluate Logistic Regression
lr_results = evaluate_model(best_model, X_train_scaled, y_train, X_test_scaled, y_test)

# Evaluate Random Forest
rf_results = evaluate_model(rf_clf, X_train_scaled, y_train, X_test_scaled, y_test)

# If you have other models, evaluate them here

# Combine results
all_results = [lr_results, rf_results]  # Add other model results here if available

# Print results
for result in all_results:
    print(f"\nModel: {result['model']}")
    print(f"Accuracy: {result['accuracy']:.4f}")
    print(f"Precision: {result['precision']:.4f}")
    print(f"Recall: {result['recall']:.4f}")
    print(f"F1 Score: {result['f1_score']:.4f}")
    print(f"AUC: {result['auc']:.4f}")
    print(f"Cross-validation Mean: {result['cv_mean']:.4f} (+/- {result['cv_std'] * 2:.4f})"

# Determine the best model
best_model = max(all_results, key=lambda x: x['auc'])
print(f"\nBest Model: {best_model['model']} with AUC: {best_model['auc']:.4f}")
```

```
Model: LogisticRegression
Accuracy: 0.8584
Precision: 0.6207
Recall: 0.1440
F1 Score: 0.2338
AUC: 0.8264
Cross-validation Mean: 0.8655 (+/- 0.0241)

Model: RandomForestClassifier
Accuracy: 0.9412
Precision: 0.9524
Recall: 0.6400
F1 Score: 0.7656
AUC: 0.9231
Cross-validation Mean: 0.9424 (+/- 0.0133)

Best Model: RandomForestClassifier with AUC: 0.9231
```

Summary

While Logistic Regression offered more straightforward interpretability, the significant performance improve
insights provided by the Random Forest Classifier made it the superior choice for this customer churn predi