

Codveda Technologies Internship Task 1: Build a Random Forest Classifier Intern: customer data with features related to account info, usage patterns, and customer service.

✔ Key Features:

Demographics: State, Area code Account Info: Account length, International plan, Total charges International Calls: Total intl mins/calls/charges Customer Service: Customer service score

preprocess the dataset to prepare it for machine learning.

```
[2]: import pandas as pd
from sklearn.model_selection import train_test_split, GridSearchCV
from sklearn.ensemble import RandomForestClassifier
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import accuracy_score, f1_score, roc_auc_score, confusion_matrix
import matplotlib.pyplot as plt
import seaborn as sns
```

```
[3]: df=pd.read_csv(r"C:\Users\DELL\Downloads\Churn Prdiction Data-20250825\Churn Prdiction Data-20250825.csv")
```

```
[4]: df
```

[4]:

	State	Account length	Area code	International plan	Voice mail plan	Number vmail messages	Total day minutes	Total day calls
0	KS	128	415	No	Yes	25	265.1	110
1	OH	107	415	No	Yes	26	161.6	123
2	NJ	137	415	No	No	0	243.4	114