CHURN PREDICTION MODEL

CHURN-A machine learning model that predicts wheather a customer will likely churn.

This is a small description/report of my project based on churn prediction. This project required a detailed enquiry about the customers and their historical data. The project id user-friendly and it understands he customers likes.

1. **Data set chosen**: The dataset is loaded from a CSV file.
2. **Data Cleaning and Preprocessing**:
   * The customerID column is dropped as it is not relevant for prediction.
   * Missing values in the TotalCharges column are filled with the median value.
   * Categorical variables are one-hot encoded.
   * The target variable Churn is label encoded.
3. **Data Splitting**: The data is split into training and testing sets.
4. **Feature Scaling**: Features are standardized using StandardScaler.
5. **Model Development**: Multiple classification models are trained and evaluated.
6. **Hyperparameter Tuning**: An example of hyperparameter tuning is provided for RandomForest.
7. **Model Evaluation**: Models are evaluated using accuracy, precision, recall, F1 score, ROC-AUC score, and confusion matrix.
8. **Model Selection**: The best-performing model is selected and saved using joblib.

**I used Google colab to run my code.**