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**1. Define the Problem**

* **Objective**: Reduce customer churn by identifying key factors causing customers to leave and making predictions about which customers are at risk of churning.
* **Metric**: Use the churn rate as the primary metric, and secondary metrics like accuracy, precision, recall, and F1-score for model performance.

**2. Data Collection and Exploration**

* **Action**: Load and inspect the dataset. Understand the structure and types of data available, such as demographics, account details, and services used.
* **Goal**: Identify missing values, inconsistencies, or outliers. Explore distributions and relationships between features, especially focusing on factors that might influence churn.

**3. Data Preprocessing**

* **Action**: Clean the data by handling missing values, outliers, and irrelevant features. Encode categorical variables and normalize numerical features if needed.
* **Feature Engineering**: Create new features that may indicate churn tendencies, like the tenure of customers or the total monthly charges.

**4. Exploratory Data Analysis**

* **Action**: Conduct EDA to find trends, patterns, and correlations. Visualize how each feature correlates with churn (e.g., high charges, short tenure).
* **Insight Extraction**: Identify key characteristics of customers who are likely to churn and prioritize features for model building.

**5. Model Selection and Training**

* **Action**: Split the data into training and testing sets. Select models commonly used for classification tasks like Logistic Regression, Random Forest, or Gradient Boosting.
* **Hyperparameter Tuning**: Use cross-validation and grid search to optimize model parameters for better performance.

**6. Model Evaluation**

* **Action**: Evaluate the model on the test set using metrics such as accuracy, precision, recall, and the F1-score to balance the performance of detecting churners.
* **Interpretability**: Use feature importance or SHAP values to interpret the model and understand which factors contribute the most to churn.

**7. Deployment and Monitoring**

* **Action**: Deploy the model to a production environment. Set up a system to monitor the model's performance over time to ensure it remains accurate.
* **Interventions**: Create a dashboard to flag high-risk customers for targeted retention campaigns or special offers.