Steps for the Project:

1. Data Cleaning and Preprocessing:

- Handle missing values (e.g., `TotalCharges` might have some blanks).
- Convert categorical data into numerical format using one-hot encoding or label encoding.
- Standardize numerical columns (`MonthlyCharges`, `TotalCharges`).

2. Exploratory Data Analysis (EDA):

- Analyze churn rates by various features such as contract type, internet service type, and monthly charges.
- Visualize data using charts (bar plots, histograms, box plots, etc.).
- Identify correlations between features using a heatmap.

3. Feature Engineering:

- Create new features (e.g., `AverageMonthlySpend` by dividing `TotalCharges` by `Tenure`).
- Remove irrelevant or highly correlated features.

4. Model Building:

- Split the dataset into training and testing sets.
- Use machine learning models such as:
    - Logistic Regression
    - Random Forest
    - Gradient Boosting (e.g., XGBoost, LightGBM)
- Train and tune the model using cross-validation.

5. Model Evaluation:

- Evaluate the model using metrics like:
    - Accuracy
    - Precision
    - Recall
    - F1-Score
    - ROC-AUC Curve

6. Deploy the Model:

- Create a simple dashboard using **Streamlit** or **Dash**.
- Input customer details and predict the churn probability.
- Visualize the important factors influencing the churn prediction.

Tools and Technologies:

- **Programming Language**: Python
- **Libraries**:
    - Data Cleaning and Analysis: Pandas, NumPy
    - Visualization: Matplotlib, Seaborn
    - Machine Learning: Scikit-learn, XGBoost
- **Deployment**: Streamlit/Dash for creating an interactive dashboard