Problem Statement:

You have been hired by a telecom company, a leading telecommunications company with a vast customer base and a competitive market. The company is facing a significant challenge in retaining its customers and wishes to develop an effective strategy to predict and prevent customer churn(leave the service). To address this, the company is seeking to build a Customer Churn Prediction system and implement MLOps practices to ensure the seamless deployment and maintenance of the model in a real-world business environment.

Project Description:

The company is seeking to leverage its extensive customer data, including call records, service plans, customer support interactions, and billing information, to predict which customers are most likely to churn (leave the service). The goal is to develop a machine learning model that can identify potential churners well in advance and enable the company to take proactive measures to retain them.

Data Collection and Preprocessing:

Gather historical customer data from various sources, including call detail records, customer profiles, and billing data.

Clean, preprocess, and integrate the data, ensuring data quality and consistency.

Machine Learning Model Development:

Develop and fine-tune machine learning models, such as logistic regression, decision trees, or deep learning models, to predict customer churn.

Evaluate and select the best-performing model based on business-specific metrics.

MLOps Implementation:

Implement an MLOps pipeline that automates model training, version control, and deployment.

Set up continuous monitoring to ensure the model remains effective and up-to-date.

Evaluation and Optimization:

Continuously monitor the model's performance, optimizing it based on feedback and real-world data.