Certainly! Here's a structured outline for your 10-minute presentation on developing a machine learning model to predict customer churn for a telecom company:

### Slide 1: Introduction

- \*\*Title:\*\* Predicting Customer Churn in a Telecom Company

- \*\*Introduction:\*\* Briefly introduce the project, its objectives, and the importance of predicting customer churn.

### Slide 2: Project Objectives

- \*\*Primary Goal:\*\* Develop a predictive model to determine whether a customer will end their service.

- \*\*Secondary Goals:\*\*

- Identify key factors influencing customer churn.

- Provide actionable insights to reduce churn rates.

### Slide 3: Data Overview

- \*\*Data Source:\*\* Describe the dataset used, including the number of records and features.

- \*\*Key Features:\*\*

- Customer demographics

- Service usage patterns (e.g., day calls, evening calls)

- Charges and billing information

- Customer service interactions

### Slide 4: Methodology

- \*\*Data Preprocessing:\*\*

- Handling missing values

- Encoding categorical variables

- Normalizing numerical features

- \*\*Model Selection:\*\*

- Logistic Regression

- Decision Tree Classification

### Slide 5: Model Training and Evaluation

- \*\*Logistic Regression:\*\*

- Explain the basics of logistic regression.

- Mention its performance metrics (accuracy, precision, recall, F1-score).

- \*\*Decision Tree Classification:\*\*

- Explain decision tree classification.

- Describe how you set the maximum depth to 5.

- Mention its performance metrics and compare with logistic regression.

### Slide 6: Model Comparison

- \*\*Performance Comparison:\*\*

- Accuracy, precision, recall, F1-score of both models.

- Highlight why Decision Tree was chosen over Logistic Regression.

- \*\*Final Model Selection:\*\*

- Decision Tree Classification with maximum depth of 5.

### Slide 7: Feature Importance

- \*\*Important Features Identified:\*\*

- Day call charges

- Evening call charges

- \*\*Insights:\*\*

- High charges in these categories correlate with higher churn rates.

### Slide 8: Recommendations

- \*\*Lower Charges:\*\*

- Reduce charges for day and evening calls to retain customers.

- \*\*Offer Discounts:\*\*

- Implement campaigns offering discounts for loyal customers.

- \*\*Improve Customer Service:\*\*

- Reduce waiting times for customer support.

- Provide extensive training to customer service teams.

### Slide 9: Implementation Plan

- \*\*Short-term Actions:\*\*

- Adjust pricing strategies based on model insights.

- Launch discount campaigns targeting high-risk customers.

- \*\*Long-term Actions:\*\*

- Invest in customer service infrastructure to reduce wait times.

- Continuous training programs for customer service representatives.

### Slide 10: Conclusion

- \*\*Summary:\*\*

- Recap the objectives, methodology, and key findings.

- \*\*Impact:\*\*

- Emphasize the potential impact of implementing these recommendations on reducing churn.

- \*\*Next Steps:\*\*

- Monitor the effectiveness of implemented strategies.

- Continuously improve the model with new data and features.

### Slide 11: Q&A

- \*\*Invite Questions:\*\*

- Open the floor for any questions from the audience.

### Script

\*\*Slide 1: Introduction\*\*

"Good [morning/afternoon], everyone. Today, I will be presenting our project on predicting customer churn for a telecom company using machine learning. Our primary goal is to identify which customers are likely to end their service and provide actionable insights to retain them."

\*\*Slide 2: Project Objectives\*\*

"Our primary goal was to develop a predictive model to identify customers who are likely to churn. Additionally, we aimed to identify key factors influencing churn and provide recommendations to reduce churn rates."

\*\*Slide 3: Data Overview\*\*

"We used a dataset containing customer demographics, service usage patterns, charges, and customer service interactions. This comprehensive dataset allowed us to analyze various factors contributing to churn."

\*\*Slide 4: Methodology\*\*

"First, we preprocessed the data by handling missing values, encoding categorical variables, and normalizing numerical features. We then trained two models: logistic regression and decision tree classification."

\*\*Slide 5: Model Training and Evaluation\*\*

"Logistic regression is a statistical method for binary classification. We evaluated its performance using accuracy, precision, recall, and F1-score. Similarly, we trained a decision tree classifier with a maximum depth of 5 and evaluated its performance using the same metrics."

\*\*Slide 6: Model Comparison\*\*

"Comparing the performance of both models, we found that the decision tree classifier outperformed logistic regression. Therefore, we selected the decision tree with a maximum depth of 5 as our final model."

\*\*Slide 7: Feature Importance\*\*

"An analysis of feature importance revealed that day call charges and evening call charges were significant predictors of churn. High charges in these categories were associated with higher churn rates."

\*\*Slide 8: Recommendations\*\*

"Based on our findings, we recommend reducing charges for day and evening calls. Additionally, launching discount campaigns can help retain high-risk customers. Improving customer service by reducing waiting times and providing extensive training to customer service teams is also crucial."

\*\*Slide 9: Implementation Plan\*\*

"In the short term, we suggest adjusting pricing strategies and launching discount campaigns. In the long term, investing in customer service infrastructure and training programs will be essential to sustain low churn rates."

\*\*Slide 10: Conclusion\*\*

"To summarize, we developed a predictive model to identify customers likely to churn and provided actionable insights to reduce churn. Implementing these recommendations can significantly impact customer retention and reduce churn rates."

\*\*Slide 11: Q&A\*\*

"Thank you for your attention. I am now open to any questions you may have."

This structure and script should help you deliver a clear and engaging presentation on your project.

**Slide 12: Industry Statistics** "Let's take a look at some statistics and facts about customer churn in the U.S. telecom industry. On average, the monthly churn rate for wireless carriers is about 1.9%, while broadband services experience a churn rate of around 1.6%. Annually, this translates to approximately 19% for wireless and 15% for broadband. This high churn rate costs telecom companies billions of dollars each year. For example, a company with 10 million customers and a 1.9% monthly churn rate would lose around 190,000 customers every month."

"Several factors contribute to this churn, with high service charges and unexpected fees being major reasons. Poor customer service and long waiting times also significantly impact customer retention. Network performance, including reliability and coverage, plays a crucial role as well."

"In a highly competitive market, companies like Verizon, AT&T, T-Mobile, and Sprint are constantly battling for market share. Effective customer retention strategies are essential, and we've seen companies like T-Mobile successfully reduce churn through transparent pricing, no contracts, and exceptional customer service. Their 'Un-carrier' initiative is a great example of how innovative approaches can significantly lower churn rates."