BUSINESS REPORT

Customer Churn Prediction Using Machine Learning

1. Executive Summary

Every company wants its customers to stay for a long time. But in reality, many customers leave without informing. This is called customer churn.

This project is made to predict whether a customer is likely to churn or not using machine learning, so that the company can take action in advance.

2. Business Problem

Customer churn is a big problem for telecom companies because:

- Losing customers means loss of revenue.
- Getting new customers is costly.
- Companies usually know about churn only after the customer leaves.

Because of this, businesses need a system that can predict churn early.

3. Business Objective

The main objectives of this project are:

- To predict if a customer will churn or stay.
- To understand customer behavior.
- To help the company reduce customer loss.
- To support better business decisions using data.

4. Solution Approach

In this project, a machine learning model is used to solve the churn problem.

- Customer data is collected and analyzed.
- Important features like contract type, tenure, payment method, and charges are used.
- A machine learning model is trained to predict churn.
- The model is deployed using a Flask web application.

This allows users to enter customer details and easily check churn prediction.

5. Key Business Insights

From the data and model analysis, some important patterns were found:

- Customers with **low tenure** are more likely to churn.
- Customers on **month-to-month contracts** have higher churn risk.
- Customers using **electronic check** payment methods churn more.
- Long-term contract customers usually stay longer.

These insights help the business understand which customers need attention.

6. Business Impact

This project helps the business in the following ways:

- Identifies customers who may churn in advance.
- Helps in planning targeted retention strategies.
- Reduces cost of acquiring new customers.
- Improves customer satisfaction..

Even a small improvement in retention can increase company profit.

7. Business Recommendations

Based on the predictions, the company can:

- Offer discounts to customers likely to churn.
- Promote long-term contracts.
- Provide special support to new customers.
- Use personalized offers instead of general marketing.

8. Conclusion

This project shows how machine learning can help businesses predict customer churn.
By using this system, companies can take early action and keep customers for a longer time.

9. Future Scope

In future, this project can be improved by:

- Adding more customer behavior data.
- Creating a real-time dashboard.
- Connecting the system with company CRM tools.
- Updating the model with new data regularly.