CUSTOMER CHURN PREDICTION

To predict customer churn and identify factor influencing customer retention helping businesses reduce customer attrition .

INNOVATION:

1. Problem Definition:

· Clearly define the problem you want to solve: Predict customer churn in your business.

2. Data Collection:

· Gather historical data on customer behaviour and churn. This data may include customer demographics, transaction history, customer support interactions, etc.

3. Data Preprocessing:

· Clean the data by handling missing values and outliers.

· Encode categorical variables (e.g., one-hot encoding or label encoding).

· Normalise or scale numerical features.

· Split the data into training, validation, and test sets (e.g., 70-15-15 split).

4. Feature Engineering:

- Create relevant features that can help in predicting churn. For example, you may calculate customer tenure, customer lifetime value, or frequency of interactions.

5. Exploratory Data Analysis (EDA):

- Visualise the data to gain insights and identify patterns or correlations that may be useful.

6. Model Selection:

- Choose appropriate machine learning algorithms for churn prediction. Common choices include logistic regression, decision trees, random forests, support vector machines, and neural networks.

7. Model Training:

- Train the selected models using the training data.

- Tune hyperparameters to optimise model performance.

8. Model Evaluation:

- Evaluate the models on the validation dataset using appropriate evaluation metrics like accuracy, precision, recall, F1-score, ROC AUC, or others, depending on the specific goals.

9. Model Interpretation:

- If possible, interpret the model's predictions to understand the factors contributing to churn.

10. Model Deployment:

·   Once satisfied with the model's performance, deploy it to make predictions on new data. This could be done in a production environment or using cloud services.

11. Monitoring and Maintenance:

·   Continuously monitor the model's performance in the production environment.

·   Re-train the model periodically with new data to keep it up to date.

12. Reporting and Visualization:

·   Create reports and dashboards to track key churn-related metrics and insights for stakeholders.

13. Feedback Loop:

·   Gather feedback from business stakeholders and end-users to make improvements to the model and the churn prediction process.

14. Decision Making:

·   Use the model's predictions to inform business decisions and strategies related to customer retention.

15. Iterate:

· As the business environment evolves, revisit and iterate on the model and its features to maintain or improve its predictive accuracy.

16. Ethical Considerations:

· Ensure that your churn prediction model respects privacy and fairness guidelines. Avoid biases and discrimination in predictions.