S.DIVYADARSHINI
REG.NO:921821104008
PRO.NAME:ML MODULE WITH IBM WATSON

1. **Data Ingestion**: Upload and prepare your dataset within Watson Studio's environment.

2. **Data Preprocessing**: Clean and preprocess the data, which may involve handling missing values, encoding categorical variables, and scaling features.

3. **Feature Engineering**: Create new features or transform existing ones to improve the model's predictive performance.

4. **Splitting the Data**: Divide your dataset into a training set and a testing/validation set to assess the model's performance.

5. **Model Selection**: Choose a suitable machine learning algorithm for churn prediction. Common algorithms include logistic regression, decision trees, random forests, or gradient boosting.

6. **Model Training**: Train the selected model on the training data.

7.Hyperparameter Tuning: Optimize the model's hyperparameters to improve its predictive accuracy.

8.Model Evaluation: Evaluate the model's performance using appropriate metrics (e.g., accuracy, precision, recall, F1-score, ROC AUC).

9.Model Validation: Assess the model's performance on the testing/validation dataset to ensure it generalizes well to new data.

Model Deployment:

To deploy the trained model in IBM Cloud Watson Studio:

1.Save the Model: Save the trained machine learning model.

2.Create a Deployment Space: Within Watson Studio, create a deployment space where your model will be hosted.

3.Deploy the Model: Use the deployment capabilities within Watson Studio to deploy the model as a web service. You can select the appropriate runtime environment and configuration.

4.Scoring Endpoint: After deployment, you'll obtain a scoring endpoint URL that allows you to make predictions in real-time.

Integration:

You can integrate the deployed model into applications or systems for real-time predictions:

1.API Integration: Use the scoring endpoint URL to make API calls to the model. This can be integrated into your web or mobile applications.

2.Batch Processing: For batch processing, you can schedule regular data updates and predictions based on the model's output. This can be used for customer segmentation or targeted marketing campaigns.

3.Monitoring and Feedback Loop: Continuously monitor the model's performance and gather feedback on its predictions to further improve its accuracy and relevance.

By following this process, you can create a predictive analytics use case to predict customer churn, and leverage IBM Cloud Watson Studio for dataset preparation, model training, deployment, and seamless integration into your business processes.