**Machine Learning Model for Ticket Priority Classification in SAP CX**

**Overview**

This document outlines the implementation of a machine learning model to classify and arrange support tickets based on their priority (High, Medium, Low) in SAP CX. The model leverages Natural Language Processing (NLP) techniques to analyse ticket descriptions and predict their priority.

**Workflow**

**1. Data Collection**

* Gather historical support tickets from SAP CX.
* Ensure that each ticket has a description and an associated priority label (High, Medium, Low).

**2. Data Preprocessing**

* Convert text descriptions to lowercase.
* Remove special characters, stopwords, and unnecessary symbols.
* Tokenize and lemmatize the text for improved feature extraction.

**3. Feature Engineering**

* Convert the processed text into numerical features using TF-IDF (Term Frequency-Inverse Document Frequency).
* Optional: Use word embeddings like Word2Vec or BERT for enhanced text representation.

**4. Model Selection and Training**

* Use a classification model such as **Logistic Regression, RandomForestClassifier**, or **Deep Learning (LSTMs, BERT)**.
* Train the model on ticket descriptions with corresponding priority labels.
* Implement class balancing techniques to handle imbalanced datasets.

**5. Model Evaluation**

* Split data into training and testing sets (e.g., 80-20 split) with **stratified sampling**.
* Measure performance using metrics like accuracy, precision, recall, and F1-score.
* Handle missing class predictions using zero\_division in classification\_report.

**6. Deployment and Integration with SAP CX**

* Convert the trained model into an API for real-time ticket classification.
* Integrate with SAP CX using web services (REST API) or SAP Business Technology Platform (SAP BTP).
* Automatically assign ticket priorities upon creation, ensuring efficient handling.

**Conclusion**

This approach provides an automated and scalable way to classify support tickets based on priority. It improves efficiency in handling critical issues while ensuring timely resolution of customer queries. The model can be further enhanced using deep learning techniques like BERT for better accuracy.

Would you like to extend this with real-time processing or further SAP CX integration?