Data Tagging

AxionRay assignment – Task 1

NIKHIL KUMAR
Nikhild888@gmail.com

Summary Report:

Guidelines:

The dataset consists of the following:

- Free-text data (Columns: Complaint, Cause, Correction) that needs to be tagged.
- Taxonomy Sheet: A reference list with predefined categories for Root Cause, Symptom_Condition, Symptom_Component, Fix_Condition, and Fix_Component.

Approach:

Studied dataset to find suitable method. As the size of the dataset is small, considered concentrating more on data validation as there were few **discrepancies** such as **repeated tags** and inconsistency in the format (multiple tags referring to the same issue).

P.S. **Establishing relationships** between columns—such as **Complaint-Root Cause**, Symptoms-Component, and Correction-Fix_condition—is considered essential for informed decision-making.

1. **Root Cause**:
   - It describes the **primary reason** for failure/malfunction. In most cases Cause column was directly referring to the root cause, however few Complaints have clear outline of the Root Cause. So considered choosing on case-by-case basis as this this attribute is more important for determining the fix_condition.
   - The **4M Analysis (Six Sigma)** is primarily used to determine the root cause and develop an action plan, while a case-by-case approach helped to simplify decision-making. More importance is given to **'WHY'** questions.
2. **Symptom_Condition & Symptom_Component**:
   - Visible or observable indication of the issue. Here Complaint column helped determine most of the symptom_condition, and Components were chosen based on both complaint and correction that was carried on.
   - More emphasis was placed on **'WHAT'** rather than 'WHY', as the cause had already been identified, and related components of the particular issue needed to be found to facilitate fixing it. Such as errors, damages, fitting issue or missing components.
3. **Fix_Condition & Fix_Component**:
   - Focus was on eliminating the symptom_condition and fixing the Root Cause by identifying the associated components (By reinstalling, repairing or resetting etc.).
   - This was done by considering the **Correction** column where parameters or adjustment related instructions were clearly mentioned. Explicit components directly causing the issue was mainly replaced and in case of unavailability repairs were carried out.
   - Root Cause was considered goal to fix and Symptom_condition as direction while selecting the Fix condition and components.

*****PTO for insights and recommendations.

Insights:

- **Patterns in Root Cause**: Multiple issues such as Hydraulic leakage, dripping, loose connections were pointing towards two main issues **installation** and **quality** of O-rings and quality checks carried out. Focusing more on
- **Issues with quality checks**: **'Loose'** was most repeating symptom. This points towards **lack of proper quality checks**.
- **Need for Training**: More focus on addressing Root Cause, following proper methods while fixing the issues rather than just temporary Symptom mitigation. This helps in customer satisfaction and reduces complaints.

Recommendations:

- **Data management**: Changes should be carried out in **Taxonomy** sheet as most of the Symptom_Components is missing (o-rings, sensor) and Root_Cause has duplicate entries causing confusion. System needs to more simplified and diverse to address solution with specific keywords.
- **Process Improvements**: Following either systemic or case-by-case approach needs to standardized which facilitates in decision making and aids in fixing the issue.

----------*----------