def create\_chatcompletion\_messages(row):

return [

{

"role": "system",

"content": "As a Biological Data Analyst with expertise in pharmacology and chemistry, your task is to standardize the 'Route of Drug Administration' field. This involves identifying and correcting abbreviations, ensuring consistency in terminology, and categorizing the data into standardized terms."

},

{

"role": "user",

"content": f"Carefully review the info below: {row['Route\_of\_Drug\_Administration']}\n"

"1. Before starting the standardization, check the total number of Original Terms provided. Ensure that the order of terms in your Standardized terms matches the exact order in the input data. Standardize each Original Term sequentially without omission, and verify that the total number of Standardized Terms matches the count in the input.\n"

"2. Establish Standardization Guidelines: Define rules for handling common abbreviations and variations. For example, convert 'I.V.' to 'Intravenous' and 'S.C.' to 'Subcutaneous'. All routes should be described using full, unabbreviated terms.\n"

"3. Re-Ordering and Grouping: Group similar administration routes together while ensuring that all descriptions are converted to a consistent format. For instance, group all variations of intraperitoneal injections under 'Intraperitoneal'.\n"

"4. Consider Case-Insensitivity: Treat all entries with case insensitivity by standardizing to a uniform case, generally sentence case.\n"

"5. Handling Acronyms: Fully expand all acronyms to their full descriptions to avoid ambiguity. For example, 'I.P.' should be expanded to 'Intraperitoneal'.\n"

"6. Manual Review and Correction: After standardizing the terms, manually review the data to ensure accuracy and consistency across all entries. Make adjustments as needed to align with the established guidelines.\n"

"7. Formatting Guidelines: Use '+' with spaces to connect multiple routes of administration within the same treatment, ensuring a compact and clear representation."

"For example,"

"Original Term: 'Intraperitoneal (I.P.) + Intranasal + Oral'"

"Standardized Term: 'Intraperitoneal + Intranasal + Oral'.\n"

"8. Remove the hyphen between words for route of administration terms, and use the standardized form without the hyphen."

"Specifically, standardize 'Intra-tracheal' to 'Intratracheal' for consistency."

"Original Term: 'Intra-tracheal' → Revised Term: 'Intratracheal'"

"9. Use NA if not applicable."

"10. Establish Standardization Guidelines:"

"- Injection (unspecified):"

"- Standardize 'Injection (unspecified)' to 'Injection' and ensure this applies uniformly across combinations."

"- Standardize terms that are case-sensitive or synonyms, e.g., 'Osmotic mini-pump' → 'Osmotic Minipump.'"

"- Standardize terms to singular form unless plural is contextually required, e.g., 'Tail veins injection' → 'Tail Vein Injection'."

"11. Use 'Tail Vein Injection' as the standard term for all generic injections into the tail vein."

"Ensure consistent capitalization and wording regardless of variations in the input (e.g., lowercase, spacing)."

"Standardize 'Tail Injection' to 'Tail Vein Injection'."

"Standardize 'Tail vein' to 'Tail Vein Injection'."

"12. Format the Output as a Table:\n"

"Create a table with two columns:\n"

"Column 1: List each Original Term exactly as it appears in the input. Preserve Original Term and do not apply any formatting or transformations to the original input term. Simply copy it directly into the first column of the output.\n"

"Column 2: Provide the standardized term for each corresponding original term.\n\n"

"Ensure accuracy and consistency based on pharmacological standards and domain expertise.\n"

"Preserve all unique drug administration details in the standardization process."

"Do not include any explanations in any format."

}

]