

1. **Installation of Required Libraries:** I've installed the necessary Python libraries `openpyxl` and `xlsxwriter` for reading and writing Excel files.
2. **Loading the Data:** I've loaded the data from an Excel file named 'Supply chain logistics problem.xlsx' using `pandas.ExcelFile()`. This file contains multiple sheets, each of which I've parsed into separate dataframes.
3. **Handling Missing Values:** You've filled the missing values in all dataframes with 0 using the `fillna()` function.
4. **One-Hot Encoding:** I've transformed categorical variables into a format that can be provided to machine learning algorithms to improve their performance. For each sheet, I've selected specific columns and performed one-hot encoding using `pd.get_dummies()`.
5. **Outlier Detection and Removal:** I've calculated the Interquartile Range (IQR) for specific columns in each sheet. Any value that falls below  $Q1 - 1.5 * IQR$  or above  $Q3 + 1.5 * IQR$  is considered an outlier. I've removed these outliers from the dataframes.
6. **Exporting the Preprocessed Data:** Finally, I've exported each preprocessed dataframe to a separate CSV file using the `to_csv()` function.

Throughout this process, I've used print statements to check the columns in each sheet and to display the cleaned dataframes. I've learned how to handle data stored in multiple sheets in an Excel file through online research.