

Assignment Documentation

Introduction

This document outlines the step-by-step process followed to prepare the assignment. The assignment involved importing data from Excel files, analyzing weights and shipments, calculating charges, and generating an expected charges report for both Company X and its courier partner.

Steps Followed

Data Import:

Utilized the `pd.read_excel()` function to import data from multiple Excel files.

Reviewed and validated the imported data to ensure accuracy.

Data Manipulation and Analysis:

Calculated the total weight of products by multiplying the weight of each product by its quantity.

Grouped elements with the same order ID and computed the sum of weights for all products in each order.

Weight Slabs Categorization:

Developed a custom function, `weight_slabs`, to categorize weights into specific weight slabs for both Company X and the courier partner.

Applied the `weight_slabs` function to categorize weights accordingly.

Zones and Weight Slabs Mapping:

Created a function, `zones`, to assign zones based on weight slabs for both Company X and the courier partner.

Mapped the respective zones for the calculated total weights using the `zones` function.

Charges Calculation:

Defined the `charges` function to calculate charges based on weight slabs and shipment types for both Forward charges and Forward and RTO charges.

Formulas for charges:

Forward Charges: Forward Fixed Charge + (Weight - Weight Slabs) * Forward Additional Weight Slab Charge

Forward and RTO Charges: $\text{Forward Fixed Charge} + (\text{Weight} - \text{Weight Slabs}) * \text{Forward Additional Weight Slab Charge} + \text{RTO Fixed Charge} + (\text{Weight} - \text{Weight Slabs}) * \text{RTO Additional Weight Slab Charge}$

Applied the `charges` function to calculate the Expected Charge as per X (Rs.) and Charges Billed by the Courier Company (Rs.).

Charge Discrepancy Analysis:

Created a table named "Difference Between Expected Charges and Billed Charges (Rs.)" to quantify the differences between the Expected Charge and Charges Billed by the Courier Company (Rs.).

Output and Reporting:

Generated a comprehensive expected charges report in Excel format.

Saved the report as an Excel file on the local machine for further analysis and submission.

Conclusion

This documentation summarizes the entire process of data import, analysis, charges calculation, and reporting for the assignment. By following the outlined steps and formulas, the assignment was successfully completed, providing valuable insights into the expected charges for Company X and its courier partner.

Summary Table Creation

Steps Followed

Summary Table Creation:

Calculated the counts of:

Total Orders - Correctly Charged

Total Orders - Over Charged

Total Orders - Under Charged

Computed the sums of the above counts to determine the total counts for each category.

Constructed a DataFrame to represent the summary information.

Formulated a concise and organized summary table layout.

Excel Conversion and Saving:

Converted the summary DataFrame into an Excel format using the `.to_excel()` method.

Saved the Excel file on the local machine for further analysis and submission.

Conclusion

This documentation captures the comprehensive process of data import, analysis, charges calculation, and summary table creation for the assignment. By following the outlined steps and utilizing custom functions, a detailed understanding of charges for Company X and its courier partner was achieved. The generated summary report provides a clear overview of the assignment's results