Assignment: Structured Extraction from Shipping Report (Excel)

**Background**

In supply chain processes, understanding, and updating order information based on supplier shipping reports is critical for inventory management and order tracking. Automation using Large Language Models (LLMs) can reduce manual intervention by extracting and transforming structured data from semi-structured sources such as Excel.

For this assignment, you will create an LLM prompt that achieves structured information extraction and logical data transformation from a shipping report based on provided purchase order (PO) information and a set of business rules.

## Case Data

**Provided Data**

You are supplied with:

* An Excel file: Contains multiple fields relevant to order shipping, generated by a supplier.
* Check the provided input json
* Current PO data (your system’s state):

PO No. H006374

|  |  |  |
| --- | --- | --- |
| Line | Part Number | Ordered Quantity |
| 29 | 160-1887-1-TUFYH | 15 |
| 33 | 182-837FE-TUFYH | 120 |
| 32 | 182-837ME-TUFYH | 20 |
| 25 | 493-13780-1-TUFYH | 300 |

PO No. SM322693

|  |  |  |
| --- | --- | --- |
| Line | Part Number | Ordered Quantity |
| 19 | 541-2.00DCT-TUFYH | 55 |

## Task Description

**Objective**

Write a prompt (for a Large Language Model) that, when given the supplier's shipping report in Excel format and the current PO data, will:

* Extract all relevant shipping data from the Excel.
* Compare shipment details with existing PO lines and quantities.
* Apply the following business rules:
  + If the quantity shipped is lower than the ordered quantity for any PO line, create a new line for the remaining quantity still on order.
  + If the same item is shipped in multiple shipments, split the PO line into multiple release lines.
  + Generate a output listing all current (updated) PO lines.

**What You Need to Provide**

* Your Complete LLM Prompt
* Details/assumptions made about the structure/nature of the Excel data
* Sample output structure in JSON
* Short explanation of why you structured the prompt and logic as you did (Maximum 300 words.)
* Python script for this accessing GPT using API would be good to have.

We are looking for a lot of passion, purpose, and crazy thoughts, with only a little bit of skill. So please feel free to go out of your way to come up with an innovative solution, because we are more interested in trying to understand how you engineer the solution and how's your thought process than boilerplate answers !!