

## Unified Logic Flow

1. **Run the Manufacturer + Mfr Catalog No. filtering** to generate the initial `final_df`.
2. **Check the number of items** in `final_df`:
  - If the number of items is within the acceptable limit ( $\leq 40$ ),  
→ **Send directly for LLM analysis.**
  - If the number of items exceeds the limit ( $> 40$ ),  
→ **Inform the user** that too many items were found.
3. **Ask the user:**

“Do you have any idea about the *Item Group* of the item you’re referring to?”

  - **If the user says YES:**
    1. Present all unique *Item Groups* from the filtered data.
    2. Let the user select one.
    3. Filter the data by the selected *Item Group*.
    4. If the resulting items  $\leq 40$  → **Send for LLM analysis.**
    5. If still  $> 40$  → ask:

“Do you know the *Default Warehouse*?”

      - If **YES**, filter again by *Default Warehouse*.  
If  $\leq 40$  → send for LLM analysis.  
If still  $> 40$  → apply the **hybrid method** again on this filtered subset.
      - If **NO**, apply the **hybrid method** on the *Item Group*–filtered data.
  - **If the user says NO:**  
→ **Directly apply the hybrid method** on the original data and return the output.

## Summary of Conditions

1	Items $\leq$ 40	Send for LLM
2	Items > 40	Ask user about Item Group
3	User knows Item Group	Filter by Item Group
4	After filtering $\leq$ 40	Send for LLM
5	After filtering > 40	Ask about Default Warehouse
6	User knows Warehouse	Filter by Warehouse
7	After filtering $\leq$ 40	Send for LLM
8	After filtering > 40	Run hybrid method again
9	User doesn't know Item Group	Run hybrid method directly