

## 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`:
  - o If the number of items is within the acceptable limit ( $\leq 40$ ),  
→ Send directly for LLM analysis.
  - o 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?”
  - o 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.
  - o 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  |