## System:

Let us play a rule following game. You need to generate a rule that maps the following inputs to their corresponding outputs, or generate examples following a given rule. Each example is an input-output pair. The input is a list of objects. If any objects with status on in the input, the output should be on. If all objects in the input are off, the output is off. If only objects with off and und in the list, the output should be undetermined (und for short). The output is either "on", "off", or "und", indicating the state of the light. For each object, determine whether it triggers the light to turn on, does not trigger it, or if it is undetermined. We only

have 5 objects in this game: ['A', 'B', 'C', 'D', 'E'].

## Gen1 - user:

You now have more examples, generate a rule that maps all the inputs (including those in previous rounds) to their corresponding outputs.

Input: A
Output: und
Input: B, D
Output: on
Input: A, C
Output: und
Input: B, D, E
Output: on

$$d^0 \sim p(d|h^*)$$

Please format your rule in the following format.
Rule: {"object 1": <"on"/"off"/"und">, "object 2": <"on"/"off"/"und">....}

## Gen1 - assistant:

Rule: {"A": "und", "B": "on", "C": "und", "D": "on", "E": "on"}  $h^1 \sim P_{lm}(h|d^0)$ Gen1 - user:

If only objects with off and und in the list, the output should be undetermined (und for short).

The rule you provided is {"A": "und", "B": "on", "C": "und", "D": "on", "E": "on"}. Based on this rule, can you give 4 examples with different inputs those are unseen before? Remember the input is a list of objects. If any objects with status on in the input, the output should be on. If all objects in the input are off, the output is off.

## **Gen1 - assistant: Gen2 - assistant:**

Input: A, B, C, D, E
Output: on
Input: A, B, C
Output: und
Input: A, B, D
Output: on
Input: B, E
Output: on

 $d^1 \sim P_{lm}(d|h^1)$ 

You now have more examples, generate a rule that maps the all the inputs (including those in previous rounds) to their corresponding outputs.

Input: A, B, C, D, E
Output: on
Input: A, B, C
Output: und
Input: A, B, D
Output: on
Input: B, E
Output: on

Please format your rule in the following format.

Rule: {"object 1": <"on"/"off"/"und">, "object 2": <"on"/"off"/"und">, ...}