Feedback Loop Detective - Solve the AI Mystery

AI doesn't improve all at once. It learns in a **cycle of steps** called the **feedback loop**:

1. **Input** - The AI receives data or a task.
2. **Output** - The AI gives an answer or action.
3. **Feedback** - A person says if it was right or wrong.
4. **Retraining** - The AI updates so it does better next time.

When the steps get scrambled, it's like reading a mystery story with missing or jumbled clues. Your job today is to be a **Feedback Loop Detective** and put the steps back in the correct order.

Guided Example: The Case of the Homework Helper AI
Here are the scrambled clues:

- The AI's answer was wrong: "*82.*"
- A student typed in a math question: "*What is 12 × 8?*"
- The student corrected it by saying: "*No, the answer is 96.*"
- The AI stored the correction and improved its math.

Your Task - Put the events in the correct loop order.

1. _____ (Input)
2. _____ (Output)
3. _____ (Feedback)
4. _____ (Retraining)

Detective Work - Solve the following scrambled cases. For each one, number the events in the correct order (1-4) and label the step (Input, Output, Feedback, Retraining).

Case A: The Self-Driving Car

_____ The safety driver hit the brakes and reported the error.

_____ The car's sensors detected a stop sign.

_____ The AI updated itself so next time it would stop.

_____ The car drove through the intersection without slowing down.

Case B: The Voice Assistant

_____ A person said: "*Play Firework by Katy Perry.*"

_____ The user told the AI: "*That's wrong, this is a different song.*"

_____ The AI misheard and played another artist's song called *Fireworks*.

_____ The AI saved the correction and learned to better recognize the request.