Scriptwriting with AI

**Directions:**

* **Compare the original, or input version of the text with the output. What differences do you see? Is this an improvement? Are there things that need to be revised further?**

**Example** 1

**Input**:

Many people like to start their day with a morning run, and these runners usually smile when they run. Why? These runners smile because they achieve a faster pace, or because they run with their romantic Mrs Right. So, if we want to analyze why people smile when running, we can observe a runner’s behavior by checking whether he continually looks at his sports watch or whether he talk with his charming partner. Now, we assume that the runner is a system, and this runner system has two inputs and one output. The first input is knowing that a shorter running time is achieved, and the second input will be running with another romantic lovebird. Also, smiling is the only one output. To estimate the system input, we must recognize the observable output pattern. If we can exactly know which the system input is, then we can focus on the transmission only from this system input to the observable output.

**Output**:

Many people enjoy starting their day with a morning run, and you might notice that they often smile while doing it. Have you ever wondered why? It could be because they're running faster than usual, or perhaps they're sharing the experience with a special someone. To understand the reason behind their smiles, we can observe the runner's behavior by noticing if they keep checking their sports watch for their pace or if they're chatting with their charming companion.

Think of the runner as a system with two inputs and one output. The first input is the feeling of accomplishment from achieving a faster running time, and the second input is the joy of running with a loved one. Smiling is the only output we see.

To determine the cause of the smile, we need to identify the input responsible for it. If we can figure out which input is responsible, we can then focus on understanding how it leads to the observable output, the smile.

**Output 2:**

Many people enjoy starting their day with a morning run, and you might notice that they often smile while doing it. Have you ever wondered why? It could be because they're running faster than usual, or perhaps they're sharing the experience with a special someone. To understand the reason behind their smiles, we can observe the runner's behavior by noticing if they keep checking their sports watch for their pace or if they're chatting with their charming companion.

Think of the runner as a system with two inputs and one output. The first input is the feeling of accomplishment from achieving a faster running time, and the second input is the joy of running with a loved one. Smiling is the only output we see.

The challenge lies in determining what's causing the smile: is it the running itself or the presence of the partner? To find the answer, we need to identify the input responsible for the smile. By pinpointing the input, we can better understand how it leads to the observable output – the smile – even though the exact cause might still be unclear.

**Example 2**

**Input:**

Now, let’s look at the drone system. When the wind is blowing, the drone will be affected: the drone may be hovering at a tilt. This is because the force of the wind can push the drone, so the inputs of the drone system are given: three force inputs in x, y, z direction, respectively. Besides, orientation of the drone can be expressed also in three directions, which are roll, pitch, and yaw, and these three parameters are the outputs of the drone. If roll, pitch, and yaw can be estimated, it is possible that force inputs can also be estimated.

**Output:**

Now, let's explore the concept of a drone system to make this idea more relatable to a diverse audience. Imagine a drone flying on a windy day. The wind affects the drone's movement and might cause it to hover at a tilt. This is because the wind exerts force on the drone in three different directions: x, y, and z.

Similarly, the drone's orientation can be described using three directions: roll, pitch, and yaw. These are the outputs of the drone system. So, just like we tried to understand the runner's smile by examining the observable outputs, we can analyze the drone's behavior by looking at its roll, pitch, and yaw.

If we can estimate these three orientation parameters, we might be able to estimate the force inputs that are affecting the drone. In this way, we can better understand the drone system and how external factors, such as wind, influence its behavior.

**Example 3**

**Input:**

So far, I’ve decoupled a drone system, a three-input three-output system. The next thing is do is to control your drone. Since that the three force inputs can be estimated, you can design three controllers targeted specifically at each force input. Because each controller corresponds to each system input, the complicated multi-input multi-output system can be controlled easily. And we call this control method “decoupling control”. Therefore, the decoupling control algorithm is developed to decouple and control the complicated system in a desired way, and engineers can solve the control problem much easier. We hope to see that decoupling control will make the drone robust and stable even in strong winds.

**Output:**

So far, we've broken down the drone system, which has three inputs (forces in the x, y, and z directions) and three outputs (roll, pitch, and yaw). Now, let's discuss how to control the drone effectively.

Since we can estimate the three force inputs, it's possible to design individual controllers for each force. By doing this, we can simplify the complex multi-input multi-output system, making it much easier to control. This approach is called "decoupling control."

The decoupling control algorithm helps engineers manage and control complicated systems in a more efficient way. By using this method, we hope to make drones more robust and stable, even when facing strong winds. The goal is to provide a better and more reliable flying experience, no matter the conditions.