**Week 2 Discussion 1: Architecture Style**

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**Architecture Style**

**Define the style with elaboration on what makes it unique.**

Event-driven architecture (EDA) is a loosely coupled design paradigm in which system components react to events that are generated externally (i.e., triggered by or responding to an event outside of the component). Whereas in traditional designs, a component is activated through a request, an event-driven model waits until something specific happens and then performs a state change that initiates the activation.

**Explain the advantages and disadvantages of the style.**

Some advantages of event-driven architecture are as follows:

* Loose coupling
* High fault tolerances
* Highly responsive
* Reduced technical debt

Some disadvantages include:

* Event duplication
* Event timing
* Confusion in naming conventions
* Lack of clear workflow
* Error handling and troubleshooting

**Explain use cases when this style will be most appropriate.**

Event-driven architecture is commonly used in sensor activities such as controlling the fan speed of a CPU fan based on the CPU temperature. The fan remains off as long as the CPU temperature is below 60 degrees Celsius. When the CPU temperature rises above 60, the fan speed is increased to twenty-five percent; above 70, the fan speed increases to fifty percent, etc.

**Explain use cases when this style will be the least desirable.**

Due to the asynchronous nature of event-driven architecture, you would not want to use it when implementing systems that require the precise synchronization of operations.