### 1. Stateless vs stateful ….?

### What is Stateful?

### To understand what the word Stateful refers to, let us look at an analogy. Consider the scenario of a telephone call. In this case, the connection is maintained from the beginning to the end of the call to ensure continuous communication. The connection is validated first, and only then will the session be established indefinitely until the end of the talk. This is exactly what a stateful protocol is. If a client delivers a request to the server in a stateful protocol, it expects a response of some sort. If it does not receive a response, it will send the request again.

### Advantages of Stateful

* Stateful protocol keeps track of the connection information, and as a result, delivers superior performance because of continually keeping track of information.
* Stateful protocols are more intuitive because they can maintain data on the server between two requests.
* They can improve performance when data retrieval is required only once.

## What is Stateless?

In order to comprehend what Stateless means, let us consider a scenario just like we did in the case of Stateful. Consider the event of sending an SMS. Here, the receiver’s availability is not confirmed, and the sender just sends the SMS to the recipient. There is no confirmation from the receiving device to the sending device that the message has been received. Despite being transmitted, the communication may or may not be received. There can be no cross-verification of status or retries. This is what stateless is all about.

**Advantages of Stateless**

* Since the monitoring system does not have to look beyond a single request to determine its whole nature, visibility of the protocol is improved.
* It is easier to recover from partial failures like crashes since no state is maintained, which improves reliability.
* The server does not have to store session state between requests; hence, scalability  is enhanced as deploying the services to any number of servers is possible, and implementation is simplified even more.
* It only necessitates a small number of resources because the system doesn’t need to keep track of communication over numerous lines, as well as session information.
* In Stateless Protocols, each individual communication is unconnected and distinct from the ones that come before or after it.
* Here, each packet of data travels on its own. There is no need to refer to another packet in these packets.