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WEB 420: Discussion 4.1

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Stateless vs. Stateful

As the technology world grows (rapidly), network protocol has arisen to give guidelines on how data should be created. “A network protocol is a set of rules that govern how data is formatted, sent, and received by computer network devices, ranging from servers and routers to endpoints, regardless of their underlying infrastructures, designs, or standards” (InterviewBit, 2022). There are two types of protocols Stateless and Stateful. “The word ‘state’ refers to the condition or the quality of being at a given point of time. Whether a protocol is stateful or stateless depends on the length of interaction a client has with it and how much of the information is stored” ” (InterviewBit, 2022).

Stateful protocols maintain the state of the session. They are repeatedly carried out and previous transactions can affect current ones. Therefore, stateful protocols occur on the same server every time. Stateful protocols are reliable, keep track of information, intuitive, and improve overall performance. However, they require more storage and memory, are very dependent on the server, and require continuous management.

In stateless protocols the previous sessions are not stored. “HTTP (Hypertext Transfer Protocol) is an example of Stateless Protocol because each request is executed independently of the requests that came before it. This implies that once a transaction is completed, the connection between the browser and the server is also terminated” (InterviewBit, 2022). Stateless protocol can recover better from crashes and have better scalability. However, with each request new information needs to be processed and is less capable.

Aleksandra Tarkowska writes in her journal titled, *Eleven quick tips to build a usable REST API for life sciences,* “A useful API is one that remains available at all times. Because APIs are intended for programmatic use, they must scale with demand and be cacheable to avoid reduced network traffic and avoid unintended denial of service attacks. **This can be achieved by making your API stateless**, i.e., allowing each request to be processed in isolation from others by removing the need for state to be stored on a server”.

Resources:

*Stateful vs Stateless: Full Difference*. (2021, December 3). InterviewBit. <https://www.interviewbit.com/blog/stateful-vs-stateless/>

Tarkowska, A., Carvalho-Silva, D., Cook, C. E., Turner, E., Finn, R. D., & Yates, A. D. (2018). Eleven quick tips to build a usable REST API for life sciences. PLoS Computational Biology, 14(12) <https://doi.org/10.1371/journal.pcbi.1006542>