

Written Exercise – Chapter 9

The Simple Object Access Protocol (SOAP) and the Representational State Transfer (REST) are both used for client-server communication. They are different from each other in several ways. SOAP only allows transporting of data in standard XML format while REST is stateless and treats every request uniquely. SOAP messages are highly structured and more complex, so they are slower to process. REST is more flexible and is faster than SOAP because of the smaller amount of data. SOAP is more expensive than REST because it is heavier in XML size, so it requires increased bandwidth and memory. REST is more scalable because it is stateless.

Some advantages of using REST APIs are its scalability, ease of use, and flexibility in data formats. The disadvantages of using REST APIs are its limited security features, no standardized error formatting, HTTP/HTTPS protocols only, and limited complex workflows due to statelessness.

The advantages of using SOAP APIs are its built-in security, protocol flexibility, and structured error handling. The disadvantages of using SOAP APIs are its large payload sizes, more complex structure, XML only data exchange, and difficulty in scalability.

Deciding which API to use depends on the environment and requirements of your web service.

Works Cited

GeeksforGeeks. "Difference between REST API and SOAP API." *GeeksforGeeks*, 24 Apr. 2019, www.geeksforgeeks.org/websites-apps/difference-between-rest-api-and-soap-api/.

AWS. "SOAP vs. REST - Comparing API Technologies - AWS." *Amazon Web Services, Inc.*, 2024, aws.amazon.com/compare/the-difference-between-soap-rest/

"DigitalAPI." *Digitalapi.ai*, 2026, www.digitalapi.ai/blogs/rest-vs-soap-key-differences#advantages-and-disadvantages-of-using-rest-apis

SmartBear. "SOAP vs REST. What's the Difference?" *SmartBear.com*, 2 Jan. 2020, smartbear.com/blog/soap-vs-rest-whats-the-difference/