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WEB 420 – RESTful APIs

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Week 1

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Discussion 1.1 - What is API Design

API design, or Application Programming Interface design, is the process of defining the interface through which two software applications can communicate with each other. It involves creating a set of rules and protocols that allow software developers to interact with a particular application or service. “A well-designed web API should aim to support: Platform independence. Any client should be able to call the API, regardless of how the API is implemented internally. This requires using standard protocols, and having a mechanism whereby the client and the web service can agree on the format of the data to exchange” (Microsoft, 2022).

API design encompasses a wide range of considerations, including the definition of data types, the specification of input and output parameters, error handling, security, and performance. The goal of API design is to create a consistent and intuitive interface that can be easily understood and used by developers. “The web API should be able to evolve and add functionality independently from client applications. As the API evolves, existing client applications should continue to function without modification. All functionalities should be discoverable so that client applications can fully use it” (Microsoft, 2022). APIs should be hard to misuse. “Implementing and integrating with an API with good design will be a straightforward process, and writing incorrect code will be a less likely outcome” (Swagger, 2022). The main HTTP methods used in APIs are GET, POST, PUT, PATCH, and DELETE. A base URL should be “neat, elegant, and simple so that developers using your product can easily use them in their web applications” (Swagger, 2022). Using nouns for URLs works well and describing resource functionality with the HTTP methods above is the preferred practice. “Keeping verbs out of your URLs is also a good idea” (Swagger, 2022). The main reason for this is that the HTTP methods are already verbs, and they should be the only ones used in that fashion.

Effective API design can have a significant impact on the usability, maintainability, and scalability of a software application or service. A well-designed API can simplify development and reduce the likelihood of errors, while also improving the overall user experience for developers who need to interact with the application or service.

References:

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