In this this thread I would like to discuss REST and RESTful services. I will define what REST is. I will describe the guiding principles of REST. I would like to make assertation to what is a resource is in REST. I want to discuss REST with HTTP and any similarities there may be. So, what is REST?

“REST is an acronym for **Re**presentational **S**tate **T**ransfer and an architectural style for **distributed hypermedia systems.”** (What Is REST, 2022) **A**rchitectural styles have their own guiding principles and constraints. As such REST has its own guiding principles and constraints. For a service interface to be considered RESTful, these principles must be satisfied. The following list below describes the guiding principles of REST:

* **Uniform Interface** – this includes:

**Identification of resources** – the interface must uniquely identify each resource in the interaction between the client and server.

**Manipulation of resources through representations** – The resources should have uniform representations in the server response. API consumers should use these representations to modify the resources state in the server.

**Self-descriptive messages** – Each resource representation should carry enough information to describe how to process the message. It should also provide information of the additional actions that the client can perform on the resource.

**Hypermedia as the engine of application state** – The client should have only the initial URI of the application. The client application should dynamically drive all other resources and interactions with the use of hyperlinks.

* **Client-Server** – Deals with separation of concerns from the client and server design.
* **Stateless -** [Statelessness](https://restfulapi.net/statelessness/) mandates that each request from the client to the server must contain all the information necessary to understand and complete the request.

### Cacheable - The [cacheable constraint](https://restfulapi.net/caching/) requires that a response should implicitly or explicitly label itself as cacheable or non-cacheable.

### Layered System - The layered system style allows an architecture to be composed of hierarchical layers by constraining component behavior.

### Code on Demand (Optional) - REST also allows client functionality to extend by downloading and executing code in the form of applets or scripts.

### (What Is REST, 2022)

### “A resource can be defined as a vital element to be referenced within a client-server system. REST architecture treats all its content as a resource, which includes HTML Pages, Images, Text Files, Videos, etc.” (REST Resources, n.d.) “While many people continue to use the terms REST and HTTP interchangeably, the truth is that they are different things. REST refers to a set of attributes of a particular architectural style, while HTTP is a well-defined protocol that happens to exhibit many features of a RESTful system.” (Pratt, 2022)

### IN this thread we have defined and described REST and what makes a RESTful service. The 6 architectural guidelines must be adhered to for a developer to build a RESTful API. Rest is not the same as HTTP, yet most HTTPs are considered to be RESTful.

References:

*What is REST*. (2022, April 7). REST API Tutorial. Retrieved on October 26, 2022, from <https://restfulapi.net/>

*REST Resources*. (n.d.). Retrieved October 26, 2022, from <https://www.w3schools.in/restful-web-services/rest-resources>

Pratt. (2022, October 5). *Difference Between REST and HTTP*. baeldung.com. Retrieved October 26, 2022, <https://www.baeldung.com/cs/rest-vs-http>