RESTFUL API's   **Samuel Okwalinga**

REST[i] (REpresentational State Transfer). First introduced by Roy Fielding in 2000, it is web standards based architecture and uses HTTP Protocol. In REST, every component is a resource which can be accessed by a common interface using HTTP standard methods. Therefore, a REST Server simply provides access to resources and REST client accesses and modifies the resources using HTTP protocol.

Resources are identified by URIs (Universal Resource Identifiers)/ global IDs. In REST, these resources can be represented by a text, JSON (most popular), XML.

Common HTTP methods used in REST based architecture

- **GET** − used to provide a read only access to a resource.
- **PUT** − used to create a new resource.
- **DELETE** − used to remove a resource.
- **POST** − used to update an existing resource or create a new resource.

RESTful Web Services

A web service is a collection of open protocols and standards used for exchanging data between applications or systems on the internet. It is these services that allow interoperability between software applications written in various programming languages on the web (e.g., communication between Java and Python, or Windows and Linux applications).

RESTful web services are those that use HTTP methods to implement the concept of REST architecture. In these, a URI is defined which provides resource representation such as JSON and set of HTTP Methods.

KEY TERMS

APIs[ii]	Application Programming Interface – a computing interface which defines interactions between multiple software intermediaries. Defines the kinds of calls or requests that can be made, how to make them, the data formats that should be used, the conventions to follow among others.
Web architecture[iii]	The conceptual structure of the World Wide Web e.g. Client-server model, three-tier model Service-oriented architectures (SOA)
Resources[iv]	Anything that can be obtained from the World Wide Web e.g. web pages, e-mail, information from databases, and web services.
URI	Uniform Resource Identifier – identify resources on the web. Similar to URLs.
Global ID	Unique identification of resources on the web.
JSON	Javascript Object Notation - used for transmitting data in web applications (e.g., sending some data from the server to the client, so it can be displayed on a web page, or vice versa)
XML	Extensible Markup Language - defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.
Web Service	A collection of open protocols and standards used for exchanging data between applications or systems on the web. e.g. REST, SOAP (Simple Object Access Protocol).

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[i] https://www.tutorialspoint.com/nodejs/nodejs_restful_api.htm
[ii] Fisher, Sharon (1989). "OS/2 EE to Get 3270 Interface Early". *Google Books.*
[iii] https://en.ryte.com/wiki/Web_Architecture
[iv] Lavoie, B. & Nielsen, F. (1999). "Web Characterization Terminology & Definitions Sheet". W3C