JSON: JavaScript, Compatibilities, and Big Data Analytics

JavaScript Object Notation (JSON) is a text-based data exchange format that is derived from the subset of literal object notation found in JavaScript programming. It is platform independent, human readable, and compatible with a wide range of programs (Aziz & Mitchell, 2007). JSON is available in many languages including Ruby, Python, Perl, C, and PHP (Anawis, 2014).

There are two different structures that JSON is built upon. The first structure is a collection of either name or value pairs. These are known as an object, hash table, associative array, keyed list, struct, record, or dictionary. The second structure is an ordered list of different values. These are known as an array, sequence, list, or vector (JSON.org).

Its Relation to JavaScript

While JSON is closely related to JavaScript, they are two very different programs. One of the largest differences is that the syntax for literal values in JSON is only accepted under strict guidelines, whereas JavaScript is very flexible. For example, JSON requires that object member names are a valid JSON string, enclosed in quotation marks, and has a limited range for object member values (Aziz & Mitchell, 2007).

While there are strict guidelines for JSON, it is still simple. JSON is very standard. It is composed of a single top-level array or object. This top-level can include arrays, objects, true and false Boolean values, numbers, strings, or null (Aziz & Mitchell, 2007).

Advantages of JSON

JavaScript Object Notation has many advantages over other data exchange formatting programs. It is available in many languages, uses minimal formatting, and is easily read by humans. JSON is also a lot smaller than many other programs, giving it the added benefits of being easier to convert into a data structure, loading faster, and taking up less space. It is also very easy to parse (Anawis, 2014).

JSON Compatibilities

JSON is compatible with a wide range of programs, including ones that work with Android devices. For example, a program designed to generate a list of library resources, Delicious, is often operated using JSON technology. When a query is typed into the search, it is put into JSON format. JSON format is ready by JavaScript, which then generates the list of results (Darby & Gilmour, 2009). Another program that works with JSON is *Mobile Lexica,* a web application that works with mobile Android devices. Android devices are often built using JavaScript software. JSON and JavaScript work together to transfer data between websites and mobile devices (Faculty of Mathematics and Computer Science, 2011).

JSON and Big Data Analytics

Perhaps one of the most useful applications of JSON is for big data analytics. Big data analytics is more important now than ever because of the large amount of data that can be collected and used for business and other purposes. The process of big data analytics searches a big data architecture. A query searches a data subset. This subset can be analyzed to allow businesses to make decisions that will benefit the company. JSON is often used as the query to result in a data subset for this process (Anawis, 2014).

References

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