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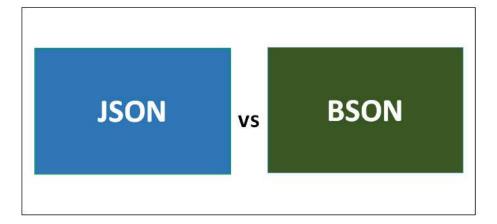SkillUP in Python Programming, Sk

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JSON vs BSON

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Difference Between JSON and BSON

JavaScript Object Notation (JSON) is a standard file format that uses human type readable text to transmit data with attribute-value pairs and array data types. This is one of the most common data formats which are mainly used for asynchronous browser-server communication. JSON is a language-independent format. BSON, on the other hand, is a computer interchange format that is mainly used for data storage and as a network transfer format in the MongoDB database. It is a simple binary form that is used to represent data structures and associative arrays (often called documents or objects in MongoDB).

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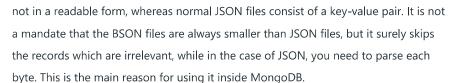(https://vue.comm100.com/chatwindow.aspx?siteId=90004140&planId=88106100-2271-458b-b0c7-1d3108bb141c)

- BSON stands for binary JSON, which consists of a list of ordered elements containing a

- BSON stands for binary JSON, which consists of a list of ordered elements containing a field name, type, and value. Field name types are typically a string. The fundamental of

not in a readable form, whereas normal JSON files consist of a key-value pair. It is not a mandate that the BSON files are always smaller than JSON files, but it surely skips the records which are irrelevant, while in the case of JSON, you need to parse each byte. This is the main reason for using it inside MongoDB.

- The BSON type format is lightweight, highly traversable and fast in nature. BSON implementation is used for supporting embedding objects and arrays within other objects. Inside BSON objects, indexes can be built, and the objects are matched against query expressions on the top level and BSON keys. BSON is a binary encoding JSON document that is used to store documents in collections. Support for data types like binary and date, which aren't supported in JSON, is added into BSON.

- In practicality, much information about BSON is not needed. Using only the native types of the language and the supplied types such as the ObjectID of the driver is needed, and the mapping will be done on its own to the BSON type.

Head to Head Comparison between JSON and BSON (Infographics)

Below is the top 10 difference between JSON vs BSON:

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JSON vs BSON

#1. Type

JSON

Standard file format.

BSON

Binary file format

#2. Speed

JSON

Comparatively less fast.

BSON

Faster.

#3. Space

JSON

Consumes comparatively less space.

BSON

More space is consumed.

#4. Usage

JSON

Transmission of data.

BSON

Storage of data.

#5. Encoding and Decoding Technique

JSON

BSON

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JSON — No such technique.

BSON — Faster encoding and decoding technique.

#6. Characteristics

JSON

Key value pair only used for transmission of data.

BSON

Lightweight, fast and traversable.

#7. Structure

JSON

Language independent format used for asynchronous server browser communication.

BSON

Binary JSON which consist of a list of ordered elements containing a field name, type and a value. Field name types are typically string.

#8. Traversal

JSON

JSON doesn't skip rather skims through all the content.

BSON

BSON on the other hand just indexes on the relevant content and skips all the content which does not have to be in use.

#9. Parse

JSON

JSON formats need not be parsed as they are in human readable format already.

BSON

BSON on the other hand needs to be parsed as they are easy for machines to parse and generate.

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Broadly JSON consists of object and array where the object is a collection of key-value pairs and the array is ordered list of values.

The binary encoding technique consists of additional information such as lengths of strings and the object subtypes. Moreover, BinData and Date data types are the data types which is not supported in JSON.

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Key Differences between JSON and BSON

Both are popular choices in the market; let us discuss some of the major difference:

BSON is a serialization format encoding format for JSON mainly used for storing and accessing the documents, whereas JSON is a human-readable standard file format mainly used for transmission of data in the form of key-value attribute pairs.

BSON is designed such that it consumes less space, but it is not extremely efficient as JSON. BSON, in fact, in some cases, uses more space than JSON. The reason for this is traversability which means that BSON adds some additional information to documents like string length and sub-objects, which in turn makes the traversing faster.

BSON is also designed in a way that it has a comparatively faster encoding and decoding technique. For example, all those integers stored as 32-bit integers so that they are not parsed with them to and from the text. Therefore, it uses more space than JSON for smaller integers, but BSON is anyway much faster to parse.

In addition to the above-mentioned points, BSON uses additional data types such as BinData and Date data types unavailable in JSON. BSON extends the JSON type model in order to provide additional data types for more efficient encoding and decoding within

different languages, whereas in the case of JSON, no such provision is provided. It facilitates

JSON type format to store the data in the form of documents exactly in the way the data is stored in the form of rows and columns in a **relational database (https://www.educba.com/database-management-system-advantages/)**.

JSON vs BSON Comparison Table

Below is the topmost Comparison between JSON vs BSON :

The basis Of Comparison	JSON	BSON

		less space.	
Usage		Transmission of data.	Storage of data.
Encoding and Decoding technique		No such technique.	Faster encoding and decoding technique.
Characteristics		Key-value pair only used for transmission of data.	Lightweight, fast and traversable.
Structure		Language independent format used for asynchronous server browser communication.	Binary JSON which consist of a list of ordered elements containing a field name, type, and value. Field name types are typically a string.
Traversal		JSON doesn't skip rather skims through all the content.	BSON, on the other hand, just indexes on the relevant content and skips all the content which does not have to be in use.
Parse		JSON formats need not be parsed as they are in a human-readable format already.	BSON, on the other hand, needs to be parsed as they are easy for machines to parse and generate.
Creation type		Broadly JSON consists of an object and an array where the object is a collection of key-value pairs, and the array is an ordered list of values.	The binary encoding technique consists of additional information such as lengths of strings and the object subtypes. Moreover, BinData and Date data types are the data types that are not supported in JSON.

Conclusion

BSON is not used with every application and mainly extends its usage to NoSQL databases
such as MongoDB. Its growing popularity can find its use in many other applications in

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This has been a guide to the top difference between JSON vs BSON. Here we also discuss the BSON vs JSON key differences with infographics and comparison table. You may also have a look at the following articles to learn more.

1. **Go vs Java (https://www.educba.com/go-vs-java/)**
2. **MongoDB vs SQL server (https://www.educba.com/mongodb-vs-sql-server/)**
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