JSON and BSON. How are they similar? How are they different? When is each used? Provide an example of each and explain the example.

To start off, BSON is literally just binary JSON. BSON does have a few more data types, which can be a little more useful depending on the situation. Using MongoDB there isn’t really much of an issue, because MongoDB just converts everything over to BSON, and it follows the data types that are used in the language that you are writing the database in. So if you are using Python, it will use the data types that you specify in the Python program.

So, how are they different? Well, to start off, as was said, JSON is a file format type, it’s a readable way to display information, BSON is the same information, just in a binary format. JSON files take up less space than BSON files, as BSON adds in extra information into its files such as string length. JSON is slower than BSON, not by much, but enough that it could improve efficiency in large projects. BSON can encode and decode information, while JSON doesn’t even have the functionality. BSON is used a lot with NoSQL databases, and MongoDB is one of them. However, they both have their inherent advantages and disadvantages, so they are a good choice to use either way.

I found a really good example of what BSON is, and how it works on the MongoDB website. If you wanted to output the sentence of “Hello World”, it would look something like this.

**BSON**

{“Hello”: “world”}

\x16\x00\x00\x00 🡪 Total Document Size

\x02 🡪 0x02 is the type of “String”

Hello\x00 🡪 “field name”

\x06\x00\x00\x00world\x00 🡪 “field value”

\x00 🡪 0x00 = type EOO ('end of object')

**JSON**

{ 🡨 Start of total document

“Student”:{ 🡨 This brace contains the student document

“Name”: “John Smith”

“Degree”: “Computer Science”

“Date of Birth”: “05/21/1999”

} 🡨 End of Student Document

“Teacher”{ 🡨 Contains the teacher document

“Name”: “Barbara Doe”

“Field of Teaching”: “Computer Science”

“Date of Birth”: “03/12/1959”

}🡨 End of Teacher document

} 🡨 End of total document

References

*JSON and BSON*. (n.d.). MongoDB. https://www.mongodb.com/json-and-bson

*JSON Example - javatpoint*. (n.d.). Www.javatpoint.com. Retrieved June 14, 2022, from https://www.javatpoint.com/json-example

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