1. A dictionary form file that contains pairs of keys and values, each key contains at least one value.
2. JSON is a textual format that is used to provide a structured and readable structure to data, and is used to exchange information between servers and to enable the exchange of information between applications in an easy way. JSON is widely used in network communication for many applications, and is supported by most programming languages.
3. Class: In object-oriented programming languages like Java, C++, and Python, objects are typically instances of classes.

Instance: Objects are often called instances in object-oriented programming. An instance is a concrete realization of a class.

Dictionary: In certain contexts, objects are referred to as dictionaries in Python, especially when they are used to store key-value pairs.

Element: In HTML parsing, objects are often referred to as element, representing parts of a document's structure.

1. Array: In JSON ordered list of values is called an "array." It is a collection of values enclosed in square brackets [].

List: In many programming languages, such as Python and Java, a similar concept is referred to as a "list." Lists are ordered collections of values that can be of different types.

Tuple: In languages like Python a "tuple" is an ordered collection of values that can be of different types. Tuples are typically immutable.

1. In JSON, the following data types can be used as values: Strings, Numbers, Booleans (true or false), Null, Objects (key-value pairs), Arrays (ordered lists of values)

1. strings, numbers, booleans, null, objects, and arrays.can be used as a value in JSON
2. In JSON Numbers, Booleans, Null values do not need quotes

1. There is no specified minimum size for a string in JSON. A string in JSON can be empty (zero characters), or it can contain one or more characters.
2. keys are the names associated with values and they are used to identify and access specific values within a JSON object. Keys are represented as strings enclosed in double quotation marks
3. Booleans are supported as values in JSON. if the values are boolean "true" and "false" can be used
4. Can JSON have an array as a value? yes
5. Can JSON have on Object as a value? yes
6. Can an Object be a value in another Object? yes
7. What file format is JSON? Java script object, although JSON data is often stored in text files with the ".json" file extension
8. JSON stands for "JavaScript Object Notation."
9. The file extension for JSON files is ".json."
10. Data in JSON is separated by commas (**,**)
11. Square brackets ([]) hold lists or arrays in JSON
12. Curly braces ({}) hold objects in JSON.
13. An array can be a value in an object
14. JSON.parse() is parsing a JSON string and convert it into a JavaScript object json.loads() does the opposite, It parses a JSON string and converts it into a Python object.
15. XML is a markup language designed for storing and transporting data.

XML is bad because documents tend to be more verbose and require more characters to represent the same data compared to JSON.

they can become complex with nested tags and attributes, which can make them harder to read and understand. furthermore, everything in XML is represented as text, requiring additional parsing and type conversion.

1. JSON is used for representing structured data in a simple way. It's a collection of key-value pairs. XML represents data as a hierarchical tree structure with elements and attributes.

JSON is typically more readable than XML

JSON has native support for data types like numbers, booleans, arrays, and strings. XML treats everything as text, requiring additional data type handling.

1. send and receive JSON data in HTTP requests and responses, convert complex data structures in memory to a text-based format for storage and it is also structured and readable way to store settings and options for an application or websites.

{

"Jordan": {

"age":19,

"cars": [

{

"name": "toyota",

"price": 48000,

"year\_of\_release": 2020,

"horsepower": 200,

"max\_speed": 150,

"num\_of\_cylinders": 4

},

{

"name": "mercedez",

"price": 350000,

"year\_of\_release": 2023,

"horsepower": 250,

"max\_speed": 170,

"num\_of\_cylinders": 6

}

]

}

}

"Cities": [

{

"name": "New York",

"time\_zone": "EST",

"zip\_code": "10001",

"population": 8398748,

"year\_established": 1624,

"mayor\_of\_city": {

"name": "Eric Adams",

"age": 63,

"year\_elected": 2022,

"yearly\_salary": 258750

}

},

{

"name": "Tel Aviv",

"time\_zone": "IL",

"zip\_code": "90001",

"population": 435855,

"year\_established": 1909,

"mayor\_of\_city": {

"name": "Ron Huldai",

"age": 79,

"year\_elected": 1998,

"yearly\_salary": 10000

}

}

}

26. How can I get Jason’s first codename from the given object?

const papuchasJason = '{"firstname": "Jason", "lastname": "Todd", "age": 30, "codenames": ["Robin", "Nightwing", "Hush"]}';

const jasonObject = JSON.parse(papuchasJason);