Introducing JSON

العربية Български 中文 Český Dansk Nederlandse English Esperanto Française Deutsch Ελληνικά עברית Magyar Indonesia Italiano 日本 한국어 فارسی Polski Português Română Русский Српско-хрватски Slovenščina Español Svenska Türkçe Tiếng Việt

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. These properties make JSON an ideal data-interchange language.

JSON is built on two structures:

- A collection of name/value pairs. In various languages, this is realized as an *object*, record, struct, dictionary, hash table, keyed list, or associative array.
- An ordered list of values. In most languages, this is realized as an *array*, vector, list, or sequence.

These are universal data structures. Virtually all modern programming languages support them in one form or another. It makes sense that a data format that is interchangeable with programming languages also be based on these structures.

In JSON, they take on these forms:

An *object* is an unordered set of name/value pairs. An object begins with { (left brace) and ends with } (right brace). Each name is followed by : (colon) and the name/value pairs are separated by , (comma).

object
- {}
- { *members* }

members
- *pair*
- *pair* , *members*

pair
- *string* : *value*

array
- []
- [*elements*]

elements
- *value*
- *value* , *elements*

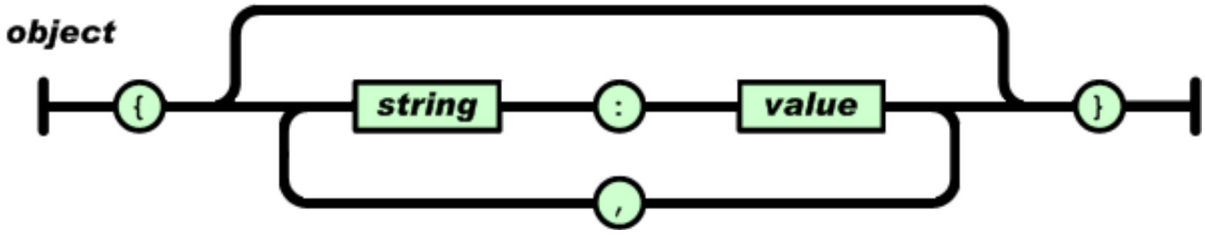
value
- *string*
- *number*
- *object*
- *array*
- true
- false
- null

string
- ""
- " *chars* "

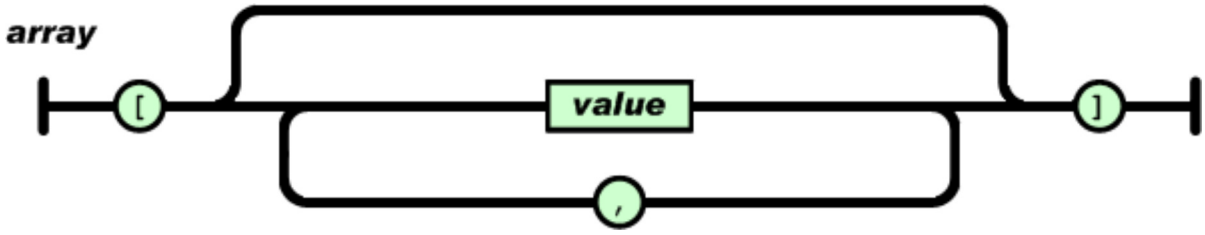
chars
- *char*
- *char chars*

char
- *any-Unicode-character-except-"-or-\-or-control-character*
- \"
- \\
- \/
- \b

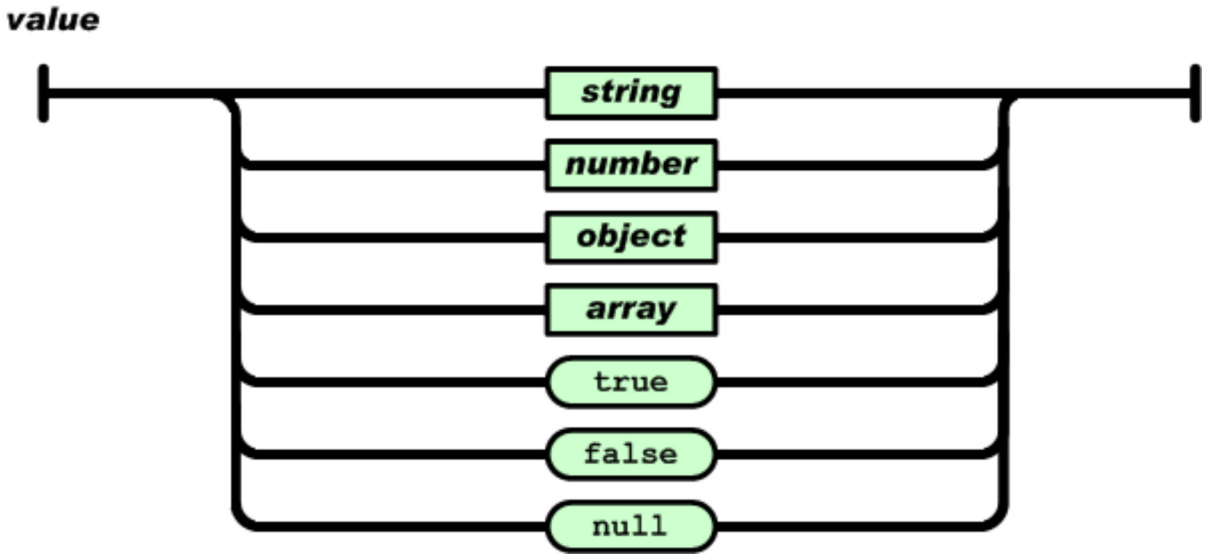
```
        \f
        \n
        \r
        \t
        \u four-hex-digits
number
        int
        int frac
        int exp
        int frac exp
int
        digit
        digit1-9 digits
        - digit
        - digit1-9 digits
frac
        . digits
exp
        e digits
digits
        digit
        digit digits
e
        e
        e+
        e-
        E
        E+
        E-
```



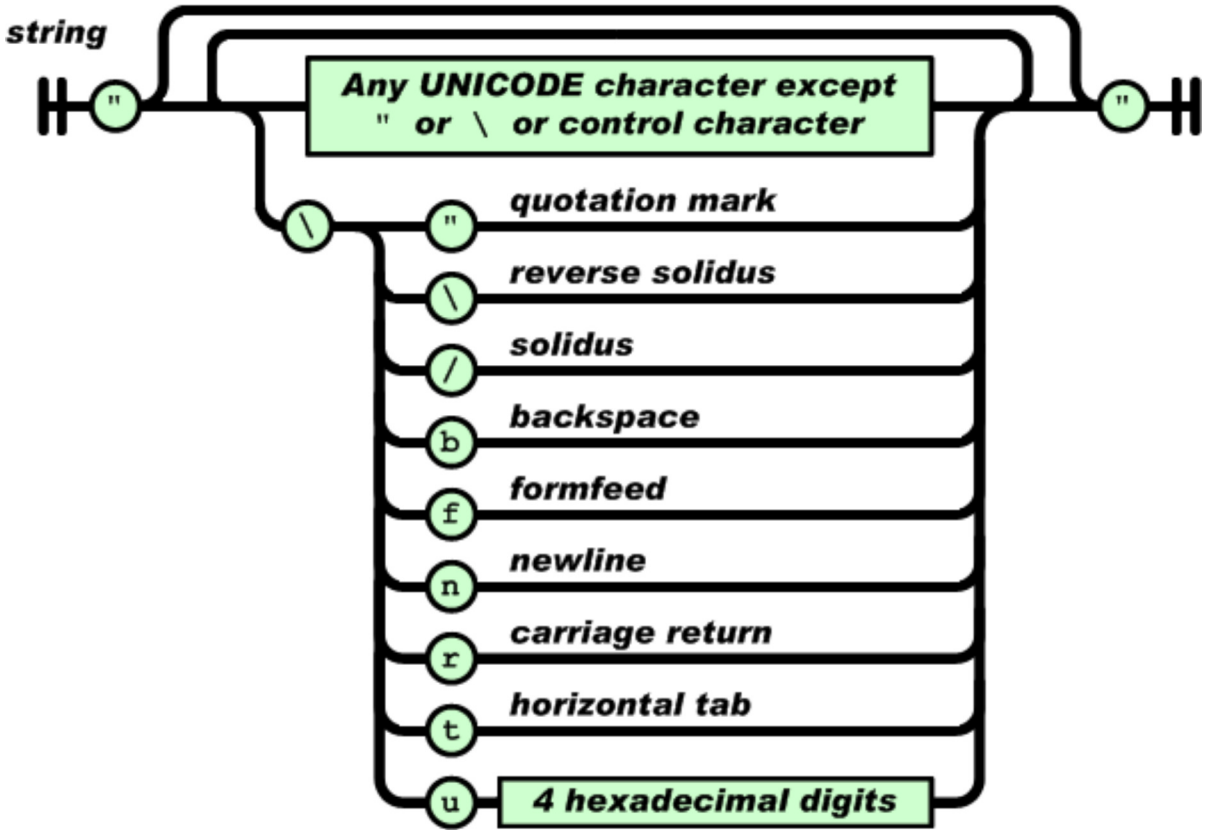
An *array* is an ordered collection of values. An array begins with `[` (left bracket) and ends with `]` (right bracket). Values are separated by `,` (comma).



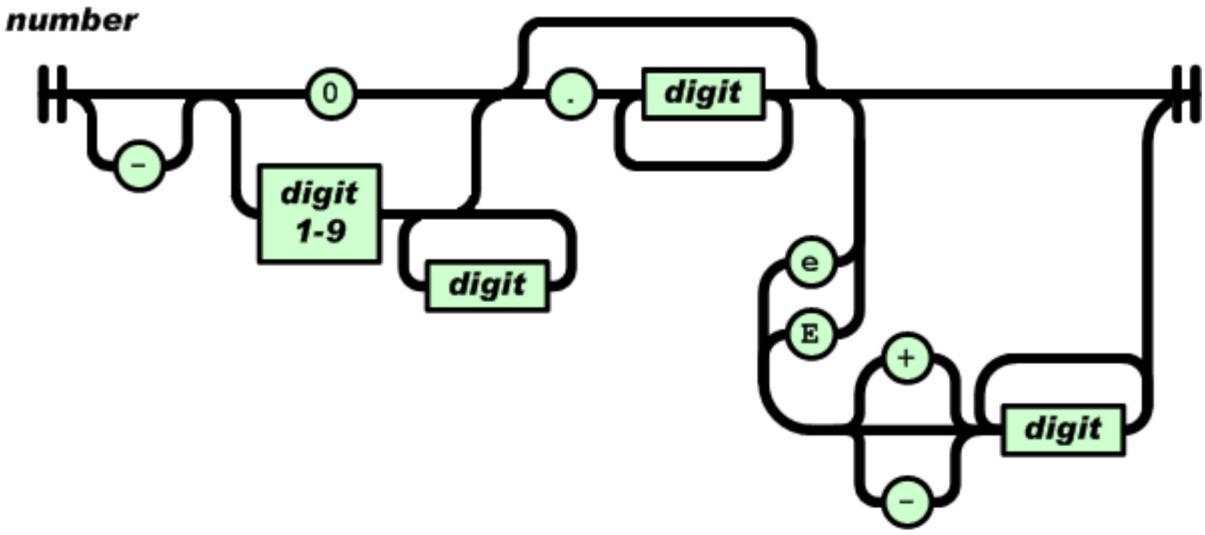
A *value* can be a *string* in double quotes, or a *number*, or `true` or `false` or `null`, or an *object* or an *array*. These structures can be nested.



A *string* is a sequence of zero or more Unicode characters, wrapped in double quotes, using backslash escapes. A character is represented as a single character string. A string is very much like a C or Java string.



A *number* is very much like a C or Java number, except that the octal and hexadecimal formats are not used.



Whitespace can be inserted between any pair of tokens. Excepting a few encoding details, that completely describes the language.

- ASP:
  - JSON for ASP.
  - JSON ASP utility class.
- ActionScript:
  - ActionScript3.
  - JSONConnector.
- Ada:
  - GNATCOLL.JSON.
- Bash:
  - Jshon.
  - JSON.sh.
- BlitzMax:
  - bmx-rjson.
- C:
  - JSON_checker.
  - YAJL.
  - js0n.
  - LibU.
  - json-c.
  - json-parser.
  - jsonsl.
  - M's JSON parser.
  - cJSON.
  - Jansson.
  - jsmn.
  - cson.
- C++:
  - JSONKit.
  - jsonme--.
  - ThorsSerializer.
  - JsonBox.
  - jsoncpp.
- Delphi:
  - Delphi Web Utils.
  - JSON Delphi Library.
  - JSON Toolkit.
  - tiny-json.
- E:
  - JSON in TermL.
- Erlang:
  - ejson.
  - mochijson2.
- Fantom:
  - Json.
- Go:
  - package json.
- Haskell:
  - RJson package.
  - json package.
- haXe:
  - hxJSON.
- Java:
  - org.json.
  - org.json.me.
  - Jackson JSON Processor.
  - Json-lib.
  - JSON Tools.
  - Stringtree.
  - SOJO.
  - Jettison.
  - json-taglib.
  - XStream.
  - Flexjson.
  - JON tools.

- zoolib.
- JOST.
- CAJUN.
- libjson.
- nosjob.
- rapidjson.

- C#:
  - fastJSON.
  - JSON_checker.
  - Jayrock.
  - Json.NET - LINQ to JSON.
  - LitJSON.
  - JSON for .NET.
  - JsonFx.
  - JSON@CodeTitans
  - How do I write my own parser?
  - JSONSharp.
  - JsonExSerializer.
  - fluent-json
  - Manatee Json
- Clojure:
  - clojure-json.
  - API for json.
- Cobol:
  - XML Thunder.
- ColdFusion:
  - ColdFusion 8.
  - toJSON.
- D:
  - Cashew.
  - Libdjson.
- Dart:
  - json library.

- Argo.
- jsonij.
- fastjson.
- mjson.
- jjson.
- json-simple.
- json-io.
- JsonMarshaller.
- google-gson.
- Json-smart.

- JavaScript:
  - JSON.
  - json2.js.
  - json_sans_eval.
  - clarinet.
- Lisp:
  - Common Lisp JSON.
  - Yason.
  - Emacs Lisp.
- LotusScript:
  - JSON LS.
- Lua:
  - Json4Lua.
  - LuaJSON.
  - LuaJSON C Library.
  - Fleece.
  - Lua CJSON.
  - dkjson.
- Matlab:
  - JSONlab.
  - JSON Parser.
  - (another) JSON Parser.

- Objective C:
  - json-framework.
  - MTJSON.
  - JSONKit.
  - yajl-objc.
  - TouchJSON.
- OCaml:
  - Yojson.
  - jsonm.
- OpenLaszlo:
  - JSON.
- Perl:
  - CPAN.
  - perl-JSON-SL.
- PHP:
  - PHP 5.2.
  - json.

    - Services_JSON.
    - Zend_JSON.
    - Solar_Json.
    - Comparison of php json libraries.
- Pike:
    - Public.Parser.JSON.
    - Public.Parser.JSON2.
- PL/SQL:
    - pljson:
    - Librairie-JSON.
- PowerShell:
    - PowerShell.
- Prolog:
    - SWI-Prolog HTTP support
- Puredata:
    - PuRestJson
- Python:
    - The Python Standard Library.
    - simplejson.
    - pyson.
    - Yajl-Py.
    - ultrajson.
- Qt:
    - QJson.
- R:
    - rjson.
- Racket:
    - json-parsing.
- Rebol:
    - json.r.
- RPG:
    - JSON Utilities.
- Ruby:
    - json.
    - yajl-ruby.
    - json-stream.
- Scala:
    - package json.
- Scheme:
    - MZScheme.
    - PLT Scheme.
- Squeak:
    - Squeak.
- Symbian:
    - s60-json-library.
- Tcl:
    - JSON.
- Visual Basic:
    - VB-JSON.
    - PW.JSON.
- Visual FoxPro:

- fwJSON.
- JSON.

- RFC 4627 application/json.

- The JSON Group on Yahoo!

- JSLint, Syntax Checker.
- JSONLint, The JSON Validator.
- JSON shell for the browser
- JSON Formatter
- JSON Designer
- JSON Editor
- JSON Parser
- JSON Test

- JSONT.
- JSONPath.
- JSONSelect.
- Draft JSON Schema.
- json-template.
- JPath.
- jaql.
- Itemscript.
- JSPON.
- JsonML.
- BSON.
- RSON.

- CouchDB.
- MongoDB.
- DBSlayer.
- Metaweb Query Language.
- ChaiDB.
- Persevere.
- FleetDB.
- OrientDB.
- terrastore.
- MLJSON.

- JSON-RPC.
- jabsorb.
- Simple Remoting.

- XSLT and XPath for JSON.
- xml2json-xslt.
- XSLTJSON.
- x-xml2jsonphp.
- Pure.
- csv2json.
- The Fat-free Alternative to XML