# JSON (JavaScript Object Notation)

JSON — это формат, который хранит структурированную информацию и в основном используется для передачи данных между сервером и клиентом.

Файл JSON представляет собой более простую и лёгкую альтернативу расширению с аналогичными функциями XML (Extensive Markup Language).

Есть два основных элемента объекта JSON: ключи и значения.

* Ключи должны быть строками. Они содержат последовательность символов, которые заключены в кавычки.
* Значения являются допустимым типом данных JSON. Они могут быть в форме массива, объекта, строки, логического значения, числа или значения null.

Объект JSON начинается и заканчивается фигурными скобками {}. Внутри может быть две или больше пар ключей/значений с запятой для их разделения. Между тем за каждым ключом следует двоеточие, чтобы отличить его от значения.

{"city":"New York", "country":"United States "}

Значения содержат допустимый тип данных JSON, например:

**Массив**

Массив — это упорядоченная коллекция значений. Он заключен в квадратные скобки [], а каждое значение внутри разделено запятой.

Значение массива может содержать объекты JSON, что означает, что он использует ту же концепцию пар ключей/значений.

"students":[

{"firstName":"Tom", "lastName":"Jackson"},

{"firstName":"Linda", "lastName":"Garner"},

{"firstName":"Adam", "lastName":"Cooper"}

]

Информация в квадратных скобках — это массив, в котором есть три объекта.

**Объект**

Объект содержит ключ и значение. После каждого ключа стоит двоеточие, а после каждого значения — запятая, которая также различает каждый объект. Оба они находятся внутри кавычек.

“employees”: {"firstName":"Tom", "lastName":"Jackson”}

сотрудники — ключ, а всё, что находится внутри фигурных скобок — объект.

**Строки**

Строка — заданная последовательность из нуля и больше символов Юникода, заключенная в две двойные кавычки.

"firstName":"Tom"

**Число**

Число в JSON должно быть целым или с плавающей запятой, например:

{“age”:”30”}

**Булевый тип**

Вы можете использовать true или false в качестве значения, как показано ниже:

{“married”:”false”)

**Значение null**

Показывает отсутствие информации.

{“bloodType”:”null”}

Проверка JSON

JSON validator <https://jsonlint.com/>

# Чтение JSON файла

Файл movies.json (данные о фильме - https://www.omdbapi.com/)

[

    {

        "Title": "Titanic",

        "Year": "1997",

        "Rated": "PG-13",

        "Released": "19 Dec 1997",

        "Runtime": "194 min",

        "Genre": "Drama, Romance",

        "Director": "James Cameron",

        "Writer": "James Cameron",

        "Actors": "Leonardo DiCaprio, Kate Winslet, Billy Zane",

        "Plot": "84 years later, a 100 year-old woman named Rose DeWitt Bukater tells the story to her granddaughter Lizzy Calvert, Brock Lovett, Lewis Bodine, Bobby Buell and Anatoly Mikailavich on the Keldysh about her life set in April 10th 1912, on a ship called Titanic when young Rose boards the departing ship with the upper-class passengers and her mother, Ruth DeWitt Bukater, and her fiancé, Caledon Hockley. Meanwhile, a drifter and artist named Jack Dawson and his best friend Fabrizio De Rossi win third-class tickets to the ship in a game. And she explains the whole story from departure until the death of Titanic on its first and last voyage April 15th, 1912 at 2:20 in the morning.",

        "Language": "English, Swedish, Italian, French",

        "Country": "United States, Mexico",

        "Awards": "Won 11 Oscars. 125 wins & 83 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BMDdmZGU3NDQtY2E5My00ZTliLWIzOTUtMTY4ZGI1YjdiNjk3XkEyXkFqcGdeQXVyNTA4NzY1MzY@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "7.8/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "87%"

            },

            {

                "Source": "Metacritic",

                "Value": "75/100"

            }

        ],

        "Metascore": "75",

        "imdbRating": "7.8",

        "imdbVotes": "1,126,468",

        "imdbID": "tt0120338",

        "Type": "movie",

        "DVD": "08 Jan 2002",

        "BoxOffice": "$659,363,944",

        "Production": "N/A",

        "Website": "N/A",

        "Response": "True"

    },

    {

        "Title": "The English Patient",

        "Year": "1996",

        "Rated": "R",

        "Released": "06 Dec 1996",

        "Runtime": "162 min",

        "Genre": "Drama, Romance, War",

        "Director": "Anthony Minghella",

        "Writer": "Michael Ondaatje, Anthony Minghella",

        "Actors": "Ralph Fiennes, Juliette Binoche, Willem Dafoe",

        "Plot": "October 1944 in war torn Italy. Hana (Juliette Binoche), a French-Canadian nurse working in a mobile army medical unit, feels like everything she loves in life dies on her. Because of the difficulty traveling and the dangers, especially as the landscape is still heavily booby-trapped with mines, Hana volunteers to stay behind at a church to care solely for a dying semi-amnesiac patient, who is badly burned and disfigured. She agrees to catch up to the rest of the unit after he dies. All the patient remembers is that he is English, and that he is married. Their solitude is disrupted with the arrival at the church of fellow Canadian David Caravaggio (Willem Dafoe), part of the Intelligence Service, who is certain that he knows the patient as a man who cooperated with the Germans. Caravaggio believes that the patient's memory is largely intact, and that he is running away from his past, in part, or in its entirety. The patient does open up about his past, all surrounding his work as a cartographer in North Africa, which was interrupted by the war. He may not be running from his work as a spy for the Germans as Caravaggio believes, but rather the memory of an affair he had with married Katharine Clifton (Dame Kristin Scott Thomas), the love of his life, and the memory of a promise not totally fulfilled. Hana may also test her theory of her fates with love and death as she embarks on a relationship of her own with Kip Singh (Naveen Andrews), a Sikh from India, whose unit has camped on the now overgrown lawn of the church. Their work entails sweeping for and diffusing mines, the discovery of one such mine which had earlier saved her life.",

        "Language": "English, German, Italian, Arabic",

        "Country": "United States, United Kingdom",

        "Awards": "Won 9 Oscars. 62 wins & 77 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BOTkxZTdkNTQtM2QwOS00NzRlLWEyMGItYTcxOTE4NTgyNGVhXkEyXkFqcGdeQXVyMTQxNzMzNDI@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "7.4/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "86%"

            },

            {

                "Source": "Metacritic",

                "Value": "87/100"

            }

        ],

        "Metascore": "87",

        "imdbRating": "7.4",

        "imdbVotes": "187,507",

        "imdbID": "tt0116209",

        "Type": "movie",

        "DVD": "29 Jun 2004",

        "BoxOffice": "$78,676,425",

        "Production": "N/A",

        "Website": "N/A",

        "Response": "True"

    },

    {

        "Title": "Anna Karenina",

        "Year": "2012",

        "Rated": "R",

        "Released": "07 Sep 2012",

        "Runtime": "129 min",

        "Genre": "Drama, Romance",

        "Director": "Joe Wright",

        "Writer": "Tom Stoppard, Lev Tolstoy",

        "Actors": "Keira Knightley, Jude Law, Aaron Taylor-Johnson",

        "Plot": "In 1874, in the Imperial Russia, the aristocratic Anna Karenina travels from Saint Petersburg to Moscow to save the marriage of her brother Prince Oblonsky, who had had a love affair with his housemaid. Anna Karenina has a cold marriage with her husband, Count Alexei Karenin, and they have a son. Anna meets the cavalry officer Count Vronsky at the train station and they feel attracted by each other. Soon she learns that Vronsky will propose to Kitty, who is the younger sister of her sister-in-law Dolly. Anna satisfactorily resolves the infidelity case of her brother and Kitty invites her to stay for the ball. However, Anna Karenina and Vronsky dance in the ball, calling the attention of the conservative society. Soon they have a love affair that will lead Anna Karenina to a tragic fate.",

        "Language": "English",

        "Country": "United Kingdom",

        "Awards": "Won 1 Oscar. 33 wins & 53 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BMTU0NDgxNDg0NV5BMl5BanBnXkFtZTcwMjE4MzkwOA@@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "6.6/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "63%"

            },

            {

                "Source": "Metacritic",

                "Value": "63/100"

            }

        ],

        "Metascore": "63",

        "imdbRating": "6.6",

        "imdbVotes": "98,535",

        "imdbID": "tt1781769",

        "Type": "movie",

        "DVD": "19 Feb 2013",

        "BoxOffice": "$12,816,367",

        "Production": "N/A",

        "Website": "N/A",

        "Response": "True"

    },

    {

        "Title": "War and Peace",

        "Year": "1956",

        "Rated": "PG",

        "Released": "21 Aug 1956",

        "Runtime": "208 min",

        "Genre": "Drama, Romance, War",

        "Director": "King Vidor",

        "Writer": "Lev Tolstoy, Bridget Boland, Robert Westerby",

        "Actors": "Audrey Hepburn, Henry Fonda, Mel Ferrer",

        "Plot": "By 1812, Napoleon's (Herbert Lom's) forces controlled much of Europe. Russia, one of the few countries still unconquered, prepares to face Napoleon's troops together with Austria. Amongst the Russian soldiers, are Count Nikolai Rostov (Jeremy Brett) and Prince Andrei Bolkonsky (Mel Ferrer). Count Pierre Bezukhov (Henry Fonda), a friend of Andrei's, and self-styled intellectual, who is not interested in fighting. Pierre's life changes when his father dies, leaving him a vast inheritance. He is attracted to Natasha Rostov (Audrey Hepburn), Nikolai's sister, but she is too young, so he gives in to baser desires and marries the shallow, manipulative Princess Helene (Anita Ekberg). The marriage ends when Pierre discovers his wife's true nature. Andrei is captured and later released by the French, and returns home only to watch his wife die in childbirth. A few months later, Pierre and Andrei meet again. Andrei sees Natasha and falls in love, but his father will only permit the marriage if they postpone it for one year until Natasha turns seventeen. While Andrei is away on a military mission, Natasha is drawn to Anatole Kuragin (Vittorio Gassman), a womanizer. Pierre saves Natasha by telling her of Anatole's past before she can elope with him. Napoleon invades Russia. Pierre visits Andrei on the eve of the battle, and observes the battle that follows. Traumatized by the carnage, he vows to kill Napoleon.",

        "Language": "English, Russian",

        "Country": "United States, Italy",

        "Awards": "Nominated for 3 Oscars. 5 wins & 13 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BNmJjOThlYTYtYzFlZC00NjI1LWFhNzItYmIzNzk5NDZkZmRmL2ltYWdlL2ltYWdlXkEyXkFqcGdeQXVyNjc1NTYyMjg@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "6.7/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "50%"

            }

        ],

        "Metascore": "N/A",

        "imdbRating": "6.7",

        "imdbVotes": "9,910",

        "imdbID": "tt0049934",

        "Type": "movie",

        "DVD": "03 Dec 2002",

        "BoxOffice": "N/A",

        "Production": "N/A",

        "Website": "N/A",

        "Response": "True"

    },

    {

        "Title": "Matrix",

        "Year": "1993",

        "Rated": "N/A",

        "Released": "01 Mar 1993",

        "Runtime": "60 min",

        "Genre": "Action, Drama, Fantasy",

        "Director": "N/A",

        "Writer": "Grenville Case",

        "Actors": "Nick Mancuso, Phillip Jarrett, Carrie-Anne Moss",

        "Plot": "Steven Matrix is one of the underworld's foremost hitmen until his luck runs out, and someone puts a contract out on him. Shot in the forehead by a .22 pistol, Matrix \"dies\" and finds himself in \"The City In Between\", where he is shown the faces of all the men and women he's murdered and a sea of fire. He's informed that he will be given a second chance. He must earn a reprieve from Hell by helping others. He then wakes up in the hospital, after an apparent \"near death\" experience. In each episode, Matrix meets a new \"guide\" from the world beyond, and is given a new assignment, much in the manner of an unwilling guardian angel. Usually his guides give him little or no useful information about the job to come, and his methods of handling the cases are sometimes as brutal as the rules of his old profession, but he gets the job done.",

        "Language": "English",

        "Country": "Canada",

        "Awards": "1 win",

        "Poster": "https://m.media-amazon.com/images/M/MV5BYzUzOTA5ZTMtMTdlZS00MmQ5LWFmNjEtMjE5MTczN2RjNjE3XkEyXkFqcGdeQXVyNTc2ODIyMzY@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "8.0/10"

            }

        ],

        "Metascore": "N/A",

        "imdbRating": "8.0",

        "imdbVotes": "185",

        "imdbID": "tt0106062",

        "Type": "series",

        "totalSeasons": "N/A",

        "Response": "True"

    },

    {

        "Title": "Avatar",

        "Year": "2009",

        "Rated": "PG-13",

        "Released": "18 Dec 2009",

        "Runtime": "162 min",

        "Genre": "Action, Adventure, Fantasy",

        "Director": "James Cameron",

        "Writer": "James Cameron",

        "Actors": "Sam Worthington, Zoe Saldana, Sigourney Weaver",

        "Plot": "When his brother is killed in a robbery, paraplegic Marine Jake Sully decides to take his place in a mission on the distant world of Pandora. There he learns of greedy corporate figurehead Parker Selfridge's intentions of driving off the native humanoid \"Na'vi\" in order to mine for the precious material scattered throughout their rich woodland. In exchange for the spinal surgery that will fix his legs, Jake gathers knowledge, of the Indigenous Race and their Culture, for the cooperating military unit spearheaded by gung-ho Colonel Quaritch, while simultaneously attempting to infiltrate the Na'vi people with the use of an \"avatar\" identity. While Jake begins to bond with the native tribe and quickly falls in love with the beautiful alien Neytiri, the restless Colonel moves forward with his ruthless extermination tactics, forcing the soldier to take a stand - and fight back in an epic battle for the fate of Pandora.",

        "Language": "English, Spanish",

        "Country": "United States",

        "Awards": "Won 3 Oscars. 89 wins & 131 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BMTYwOTEwNjAzMl5BMl5BanBnXkFtZTcwODc5MTUwMw@@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "7.9/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "82%"

            },

            {

                "Source": "Metacritic",

                "Value": "83/100"

            }

        ],

        "Metascore": "83",

        "imdbRating": "7.9",

        "imdbVotes": "1,185,150",

        "imdbID": "tt0499549",

        "Type": "movie",

        "DVD": "22 Apr 2010",

        "BoxOffice": "$760,507,625",

        "Production": "N/A",

        "Website": "N/A",

        "Response": "True"

    },

    {

        "Title": "Doctor Zhivago",

        "Year": "1965",

        "Rated": "PG-13",

        "Released": "31 Dec 1965",

        "Runtime": "197 min",

        "Genre": "Drama, Romance, War",

        "Director": "David Lean",

        "Writer": "Boris Pasternak, Robert Bolt",

        "Actors": "Omar Sharif, Julie Christie, Geraldine Chaplin",

        "Plot": "During the Russian Revolution, Dr. Yuri Zhivago (Omar Sharif) is a young doctor who has been raised by his aunt and uncle following his father's suicide. Yuri falls in love with beautiful Lara Guishar (Julie Christie), who has been having an affair with her mother's lover, Victor Komarovsky (Rod Steiger), an unscrupulous businessman. Yuri, however, ends up marrying his cousin, Tonya (Geraldine Chaplin). But when he and Lara meet again years later, the spark of love reignites.",

        "Language": "English, Russian, French",

        "Country": "Italy, United Kingdom, United States",

        "Awards": "Won 5 Oscars. 21 wins & 13 nominations total",

        "Poster": "https://m.media-amazon.com/images/M/MV5BNzdmZTk4MTktZmExNi00OWEwLTgxZDctNTE4NWMwNjc1Nzg2XkEyXkFqcGdeQXVyNjc1NTYyMjg@.\_V1\_SX300.jpg",

        "Ratings": [

            {

                "Source": "Internet Movie Database",

                "Value": "8.0/10"

            },

            {

                "Source": "Rotten Tomatoes",

                "Value": "84%"

            },

            {

                "Source": "Metacritic",

                "Value": "69/100"

            }

        ],

        "Metascore": "69",

        "imdbRating": "8.0",

        "imdbVotes": "75,527",

        "imdbID": "tt0059113",

        "Type": "movie",

        "DVD": "06 Nov 2001",

        "BoxOffice": "$111,721,910",

        "Production": "N/A",

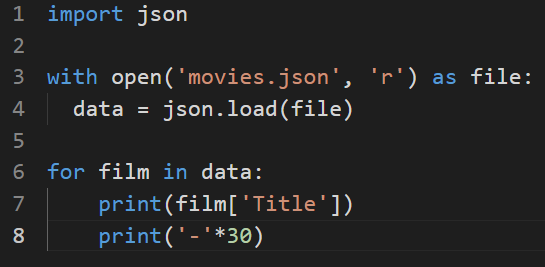
        "Website": "N/A",

        "Response": "True"

    }

]

Python – модуль json





# Используемые источники

Что Такое JSON? <https://www.hostinger.com.ua/rukovodstva/chto-takoe-json>