



DYALOG

2021

□ JSON table support

*Richard Smith*

# JSON

- **JavaScript Object Notation**
- Plain text structured data transfer
  - Web interfaces
  - Config files
  - etc.

# JSON

{ "a": [1, 2, "three"] }

# JSON

```
n ← □JSON ' {"a": [1, 2, "three"]} '
```

```
n.a[3]
```

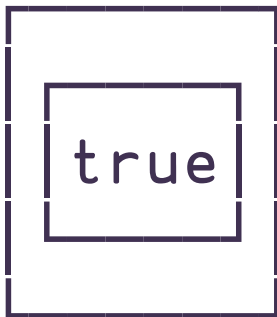
```
three
```

```
□JSON n
```

```
{"a": [1, 2, "three"]}
```

# JSON

```
n ← □JSON ' {"a": [1, 2, true]} '  
n.a[3]
```



# JSON

```
□JSON 1 (2 3) 4
```

```
[1,[2,3],4]
```

```
□JSON 1 (2 2ρι4) 4
```

DOMAIN ERROR: JSON export: item "[2]" of the right argument (□IO=1) cannot be converted

```
(□JSON□'HighRank' 'Split') 1 (2 2ρι4) 4
```

```
[1,[[1,2],[3,4]],4]
```

# Tables

Track	Year	Chart peak
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2
Drive-In Saturday	1973	3
Life on Mars?	1973	3
Sorrow	1973	3
Rebel Rebel	1974	5
Rock 'n' Roll Suicide	1974	22
Diamond Dogs	1974	21
Knock on Wood (Live)	1974	10
Young Americans	1975	18
Fame	1975	17
Golden Years	1975	8
TVC 15	1976	33
Sound and Vision	1977	3
Heroes	1977	24
Beauty and the Beast	1978	39
Breaking Glass (Live)	1978	54
Boys Keep Swinging	1979	7
D.J.	1979	29
John, I'm Only Dancing (Again)	1979	12



Headings



# Tables

Track	Year Chart peak	
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2



# APL Matrix

Track	Year	Chart peak
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2

# APL Matrix + Vector

Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2

Track	Year	Chart peak
-------	------	------------



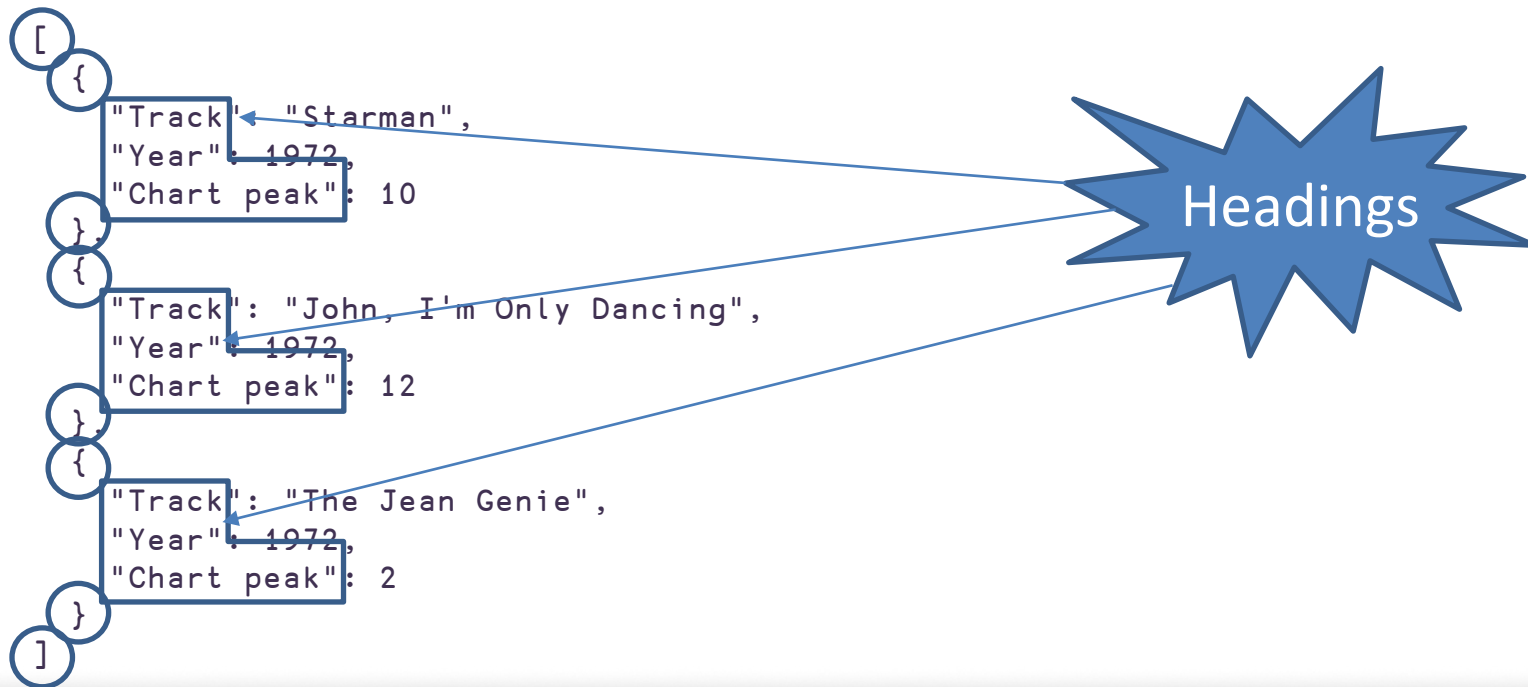
# APL Inverted Matrix + Vector

Starman	John, I'm Only Dancing	The Jean Genie	1972	1972	1972	10	12	2	Track	Year	Chart peak
---------	------------------------	----------------	------	------	------	----	----	---	-------	------	------------

Vec of vec

Headings

# JSON convention



# Demo

]demo C:\Users\richard\Documents\Conferences\2021-11 User Meeting\QJSON\_Table\_support.txt

```

a←0
a,←[]NS''
a[>pa].Track←'Starman'
a[>pa].Year←1972
R a[>pa].Chart peak←10
0(7162I)'Chart peak'
ΔChartΔ32Δpeak
a[>pa].ΔChartΔ32Δpeak←10
a,←[]NS''
a[>pa].Track←'John, I'm Only Dancing'
a[>pa].Year←1972
a[>pa].ΔChartΔ32Δpeak←12
a,←[]NS''
a[>pa].Track←'The Jean Genie'
a[>pa].Year←1972
a[>pa].ΔChartΔ32Δpeak←2
a
#. [Namespace] #. [Namespace] #. [Namespace]
( []JSON []Compact'0) a

```

```

[
{
"Track": "Starman",
"Year": 1972,
"Chart peak": 10
},
{
"Track": "John, I'm Only Dancing",
"Year": 1972,
"Chart peak": 12
},
{
"Track": "The Jean Genie",
"Year": 1972,
"Chart peak": 2
}
]

```

```

[]JSON 1 (<'true') 2
[1,true,2]
[]JSON 1 (<1 'true') 2
[1,true,2]

```

```

t1←[]CSV 'C:\Users\richard\Documents\Conferences\2021-11 User Meeting\Bowie.csv'
t1

```

Track	Year	Chart peak
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2

```

t2←[]CSV 'C:\Users\richard\Documents\Conferences\2021-11 User Meeting\Bowie.csv' '' 4 1
t2

```

Starman	1972	10	Track	Year	Chart peak
John, I'm Only Dancing	1972	12			
The Jean Genie	1972	2			

```

t3←( []CSV []Invert' 2)'C:\Users\richard\Documents\Conferences\2021-11 User Meeting\Bowie.csv' '' 4 1
t3

```

Starman	John, I'm Only Dancing	The Jean Genie	1972	1972	1972	10	12	2	Track	Year	Chart peak
---------	------------------------	----------------	------	------	------	----	----	---	-------	------	------------

```

( []JSON []Compact'0) <2 t1
[

```

```

{
  "Track": "Starman",
  "Year": "1972",
  "Chart peak": "10"
},
{
  "Track": "John, I'm Only Dancing",
  "Year": "1972",
  "Chart peak": "12"
},
{
  "Track": "The Jean Genie",
  "Year": "1972",
  "Chart peak": "2"
}
]
  (JSONCompact'0) <3 t2
[
  {
    "Track": "Starman",
    "Year": 1972,
    "Chart peak": 10
  },
  {
    "Track": "John, I'm Only Dancing",
    "Year": 1972,
    "Chart peak": 12
  },
  {
    "Track": "The Jean Genie",
    "Year": 1972,
    "Chart peak": 2
  }
]
  (JSONCompact'0) <4 t3
[
  {
    "Track": "Starman",
    "Year": 1972,
    "Chart peak": 10
  },
  {
    "Track": "John, I'm Only Dancing",
    "Year": 1972,
    "Chart peak": 12
  },
  {
    "Track": "The Jean Genie",
    "Year": 1972,
    "Chart peak": 2
  }
]
  (JSONCompact'0) 1 (<4 t3) 2
[
  1,
  [
    {
      "Track": "Starman",
      "Year": 1972,
      "Chart peak": 10
    },
    {
      "Track": "John, I'm Only Dancing",
      "Year": 1972,
      "Chart peak": 12
    },
    {
      "Track": "The Jean Genie",
      "Year": 1972,
      "Chart peak": 2
    }
  ]
],
2
]

```

```

t1[2;3]
10
t1[2;3]<=<2 t1
(JSON'Compact' 0)1 (c2 t1) 2
[
  1,
  [
    {
      "Track": "Starman",
      "Year": "1972",
      "Chart peak": [
        {
          "Track": "Starman",
          "Year": "1972",
          "Chart peak": "10"
        },
        {
          "Track": "John, I'm Only Dancing",
          "Year": "1972",
          "Chart peak": "12"
        },
        {
          "Track": "The Jean Genie",
          "Year": "1972",
          "Chart peak": "2"
        }
      ]
    },
    {
      "Track": "John, I'm Only Dancing",
      "Year": "1972",
      "Chart peak": "12"
    },
    {
      "Track": "The Jean Genie",
      "Year": "1972",
      "Chart peak": "2"
    }
  ],
  2
]

```

```

t1=<CSV 'C:\Users\richard\Documents\Conferences\2021-11 User Meeting\Bowie2.csv'
t1

```

Track	Year	Chart peak
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2
Drive-In Saturday	1973	3
Life on Mars?	1973	3
Sorrow	1973	3
Rebel Rebel	1974	5
Rock 'n' Roll Suicide	1974	22
Diamond Dogs	1974	21
Knock on Wood (Live)	1974	10
Young Americans	1975	18
Fame	1975	17
Golden Years	1975	8
TVC 15	1976	33
Sound and Vision	1977	3
Heroes	1977	24
Beauty and the Beast	1978	39
Breaking Glass (Live)	1978	54
Boys Keep Swinging	1979	7
D.J.	1979	29
John, I'm Only Dancing (Again)	1979	12



```

([JSON]'Compact' 0)=2 t1 (3 6 9) (1 3)
[
{
  "Track": "The Jean Genie",
  "Chart peak": "2"
},
{
  "Track": "Sorrow",
  "Chart peak": "3"
},
{
  "Track": "Diamond Dogs",
  "Chart peak": "21"
}
]

'CL'WC'Clipboard'
'CL'WS'Text'((JSON'Compact' 0)=2 t1)

```

The screenshot shows the website json2table.com. The left pane displays a JSON array of music tracks, and the right pane displays a table with columns for Track, Year, and Chart peak.

Track	Year	Chart peak
Starman	1972	10
John, I'm Only Dancing	1972	12
The Jean Genie	1972	2
Drive-In Saturday	1973	3
Life on Mars?	1973	3
Sorrow	1973	3
Rebel Rebel	1974	5
Rock 'n' Roll Suicide	1974	22
Diamond Dogs	1974	21
Knock on Wood (Live)	1974	10
Young Americans	1975	18
Fame	1975	17
Golden Years	1975	8
TVC 15	1976	33
Sound and Vision	1977	3
Heroes	1977	24
Beauty and the Beast	1978	39
Breaking Glass (Live)	1978	54
Boys Keep Swinging	1979	7
D.J.	1979	29
John, I'm Only Dancing (Again)	1979	12

# □ JSON table support

- ◆ Generalisation of `c code data ...`
- ◆ One-way only (JSON export)
- ◆ Codes 2, 3, 4 used for APL tabular data
- ◆ Generated as JSON array of namespaces
  - ◆ Easily
  - ◆ Without creating namespaces under the covers



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**Questions**