

# JSON: The Basics

# Introduction

- JSON stands for JavaScript Object Notation.
- JSON is a lightweight text-based open standard data-interchange format.
- In 2005, Yahoo started using JSON in its web services.
- In later 2006, Google started offering JSON in its Gdata web protocol.
- Today, JSON is one of the most widely used data-interchange format in web services.

# JSON: Basic Constructs

- There are four basic and built-in data types in JSON.
  - ✓ String
  - ✓ Number
  - ✓ Boolean
  - ✓ Null
- String is any alphanumeric in “ ”. E.g. “name”, “x1”
- Number is any real, integer, positive, negative number. Like 1, 1.2, -1, -3.2 etc.
- Boolean is true and false keywords.
- Null is null keyword.

# JSON: Basic Constructs

- There are two structured data types—
  - ✓ Object
  - ✓ Array
- Objects are wrapped within '{' and '}'.
- Objects are a list of name-value pairs (separated by ,).
- Names and their values are separated by a colon (:).
- Arrays are enclosed by '[' and ']'.
- Arrays are list of values (separated by ,).
- Both objects and arrays can be nested.

# Structures of JSON : Object

**Syntax:**

```
{  
    string : value,  
    .....  
}
```

**Example**

```
{  
    "firstName": "Kabir",  
    "lastName" : "Choudhary",  
    "age"       : 22,  
    "email"     : "kabir@gmail.com"  
}
```

# Structures of JSON : Array

**Syntax:**

```
[  
    value,  
    .....  
]
```

**Example**

```
[ "Kabir" , 22 , true , 8.9 ]
```

# Structures of JSON : Value

**Syntax:**

string | number | true | false | null | object | array

# Structures of JSON

The entire content of the JSON data is enclosed within an object.

```
{  
    string : value,  
    .....  
}
```



# JSON Example

name	value
temp	32
city	Jaipur

```
{  
  "parameters":  
    [  
      {  
        "name": "temp",  
        "value": 32  
      },  
      {  
        "name": "city",  
        "value": "Jaipur"  
      }  
    ]  
}
```

# XML Example

name	value
temp	32
city	Jaipur

```
<parameters>
  <param>
    <name> temp    </name>
    <value> 32     </value>
  </param>
  <param>
    <name> city    </name>
    <value> Jaipur </value>
  </param>
</parameters>
```

# XML vs JSON

XML	JSON
XML has file extension is .xml	JSON has a file extension of .json
Markup Language	Data Interchange Format
Document Oriented	Data Oriented
Provide display properties	Does not provide display properties
Supports complex data types like images and charts	Supports built in data types
It is more secure	Less secure
Complex	Simple to learn
Requires complex tools to process	Scripting and Programming language can process using simple APIs