



# Topic 9: JavaScript

JavaScript Object Notation (JSON)



# Lecture Contents

- Key-Value Pair
- What is JSON?
- Basic JSON Objects



# Key: Value Pair

- Key is a constant that defines the data set
- Value is the variable that belongs to the set
- Examples:  
    gender: male, color: green,  
    price: 100,
- In the examples above
  - a colon (:) is used as the *key-value separator*
  - a comma (,) is used as the *value delimiter*.



# What is JSON?

- JSON, pronounced /dʒeɪsən/, stands for *JavaScript Object Notation*
- Light-weight data-interchange format
- Began as a way to interchange data on the web
  - JavaScript was the programming language of the web, so JSON is syntactically similar to JavaScript
- Plain text
- Now considered language-independent
  - Parsers have been written for basically all other programming languages
  - JavaScript parser `JSON.parse()` and writer `JSON.stringify()`



# Basic JSON Objects

- In JavaScript and JSON, an ***object literal*** is enclosed in curly braces and contain key-value pairs:

```
{  
  "key1": "value1",  
  "key2": "value2",  
}
```

- Each key and it's corresponding value is separated by a colon ( : )
- Each key-value pair is separated by a comma ( , )



# Basic JSON Objects

- In JavaScript, a **key** may be a: *string*, *number*, or *identifier*, for example:

```
{ "age": 30,           // key is a string
  name: "John",       // key is identifier
  5: "Doe",           // key is a number
}
```

- In JSON, every **key** must be a *string*:

```
{ "age": 30,
  "name": "John",
  "5": "Doe",
}
```



# Basic JSON Objects

- In JSON, a ***value*** may be any valid JSON data type:
  - ***string***
  - ***number***
  - ***boolean***
  - ***object***
  - ***array***
  - ***null***



# Basic JSON Objects

- Identify the JSON types in this JSON object literal:

```
{ "name": "John",  
  "age": 30,  
  "male": true,  
  "contact": { "address": "None",  
               "phone": "123454678901"  
            },  
  "siblings": [ "Jason", "Jenny" ],  
  "spouse": null  
}
```





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