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مؤسسة حضرموت
Hadhramout Foundation
Human Development تنمية بشرية

WEB BOOT CAMP

Client-Side Programming – JavaScript – Part V

ضمن برنامج تطوير قدرات الشباب

What is JSON?

- JSON stands for JavaScript Object Notation
- JSON is a lightweight data-interchange format
- JSON is plain text written in JavaScript object notation
- JSON is used to send data between computers
- JSON is language independent

Why Use JSON?

- The JSON format is syntactically similar to the code for creating JavaScript objects. Because of this, a JavaScript program can easily convert JSON data into JavaScript objects.
- Since the format is text only, JSON data can easily be sent between computers, and used by any programming language.
- You can work with data as JavaScript objects, with no complicated parsing and translations.

JSON Syntax

- The JSON syntax is a subset of the JavaScript syntax.
- JSON syntax is derived from JavaScript object notation syntax:
 - Data is in name/value pairs
 - Data is separated by commas
 - Curly braces hold objects
 - Square brackets hold arrays

JSON Syntax

- JSON data is written as name/value pairs.
- A name/value pair consists of a field name (in double quotes), followed by a colon, followed by a value:

```
"name" : "John"
```

JSON Data Types

- In JSON, values must be one of the following data types:
 - a string
 - a number
 - an object (JSON object)
 - an array
 - a boolean
 - null

JSON Data Types

JSON Strings

- Strings in JSON must be written in double quotes.

```
{ "name": "John" }
```

JSON Data Types

JSON Numbers

- Numbers in JSON must be an integer or a floating point.

```
{ "age" : 30 }
```


JSON Data Types

JSON Objects

- Values in JSON can be objects.

```
{  
  "employee": {  
    "name": "John",  
    "age": 30,  
    "city": "New York"  
  }  
}
```

JSON Data Types

JSON Arrays

- Values in JSON can be arrays.

```
{  
  "employees": [ "John", "Anna", "Peter" ]  
}
```

JSON Data Types

JSON Booleans

- Values in JSON can be true/false.

```
{ "sale": true }
```

JSON Data Types

JSON null

- Values in JSON can be **null**.

```
{ "middlename": null }
```

JSON Conversion

- A common use of JSON is to exchange data to/from a web server.
- When receiving data from a web server, the data is always a string.
- Parse the data with **JSON.parse()**, and the data becomes a JavaScript object.
- Use the JavaScript function **JSON.parse()** to convert text into a JavaScript object:

```
const obj = JSON.parse('{ "name": "John", "age": 30, "city": "New York" }');
```

