Fullstack Web Development Tutorial Lesson 9

Today's lesson will cover

- **Destructuring**

- **JSON Methods**

JavaScript fundamentals

Destructuring

- *Destructuring assignment* is a special syntax that allows us to "unpack" arrays or objects into a bunch of variables
- Array destructuring:
    - "destructurizes" by copying items into variables. But the array itself is not modified.
    - ...newArrayName if want to get all values from certain point onwards
    - Default values if unavailable then it's undefined
- Object destructuring:
    - Works almost similar to array destructuring
    - ...rest pattern works too
    - Nested destructuring is possible too

JSON

- JSON stands for Javascript Object Notation

- "key" : "value" pair is must

- Strings need to be within "double-quotes"

- Function properties (methods) are skipped with JSON methods

- Trailing commas like object or arrays are prohibited

- Syntax

    -
    ```
    {
            "key" : "string value",
            "Number key within quote" : number value without quote,
            "key" : true // boolean value without quotes
            "key" : { object},
            "key" : [array elements or empty array],
            "Key" : { Nested JSON properties },
            "key" : null
    }
    ```

JSON Methods: JSON.stringify

- `JSON.stringify` to convert objects into JSON
- JSON is data-only language-independent specification, so some JavaScript-specific object properties are skipped by `JSON.stringify`.
    - Function properties (methods).
    - Symbolic properties.
    - Properties that store `undefined`
- Syntax
    - `JSON.stringify(value[, replacer, space])`
- *`replacer`* parameter can be either a function or an array.
- `space` parameter is used solely for logging and nice-output purposes.

JSON Methods: JSON.parse

- `JSON.parse` method parses a JSON string, constructing the JavaScript value or object described by the string

- Syntax

  - `JSON.parse(str, [reviver])`

- If a `reviver` is specified, the value computed by parsing is *transformed* before being returned.

Summary: Destructuring

- Destructuring assignment allows for instantly mapping an object or array onto many variables.

- The full object syntax:

  `let {`prop `: varName =` default`, ...`rest`} =` object

- This means that property `prop` should go into the variable `varName` and, if no such property exists, then the `default` value should be used.

  Object properties that have no mapping are copied to the `rest` object.

- The full array syntax:

  `let [`item1 `=` default`,` item2`, ...`rest`] =` array

- The first item goes to `item1`; the second goes into `item2`, all the rest makes the array `rest`.

- It's possible to extract data from nested arrays/objects, for that the left side must have the same structure as the right one.

Summary: JSON

- JSON is a data format that has its own independent standard and libraries for most programming languages.

- JSON supports plain objects, arrays, strings, numbers, booleans, and `null`.

- JavaScript provides methods JSON.stringify to serialize into JSON and JSON.parse to read from JSON.

- Both methods support transformer functions for smart reading/writing.

- If an object has `toJSON`, then it is called by `JSON.stringify`.

Self Study Assignments

To Dos

- For practical use case understanding of JSON, complete this tutorial: <u>Active learning: Working through a JSON example</u>

- Continue freecodecamp Javascript. Ideally finish before we resume after summer.

- Continue with FCC HTML, CSS lessons. Ideally finish all the lessons by end of this month.

- If you need help pushing your HTML CSS project on GIthub and using <u>Github pages</u> let me know right away.