- ## How do you copy by value a composite data type?

Objects, arrays and functions are composite data type.

In copy by value, When the variable data is assigned to another variable, both the variables refer to different memory locations. Here deep copying is performed, i.e if the value is altered in one variable it doesn't affect the value stored in another variable as both the data are stored in different memory locations. All primitive and special data types are copied by value.

We can copy by value a composite data type by these methods

1. Use the spread (...) syntax
2. Use the Object.assign() method
3. Use the JSON.stringify() and JSON.parse() methods

Example :

```
const person = {

    firstName: 'John',

    lastName: 'Doe'

};

// using spread ...

let p1 = {

    ...person

};

// using  Object.assign() method

let p2 = Object.assign({}, person);

// using JSON

let p3 = JSON.parse(JSON.stringify(person));
```

- **Why there is a difference in behavior for copying contents in primitive and non primitive type?**

The difference between **primitive** and **non-primitive** data types are as follows:

- Primitive types are predefined in Javascript. Non-primitive types are created by the programmer and is not defined by Javascript.
- Non Primitive types can be used to call methods to perform certain operations, while primitive types cannot.
- A primitive type always has a value, whereas non-primitive types can be null.
- The size of a primitive type depends on the data type, while non-primitive types have all the same size.

Arrays: Arrays in Javascript are homogeneous data structures implemented in Javascript as objects. Arrays store one or more values of a specific data type and provide indexed access to store the same. A specific element in an array is accessed by its index.

Hence copying a non-primitive datatype like Arrays are different from primitive data types

- **Use typeof in all the datatypes and check the result**
  - typeof(1) number
  - typeof(1.1) number
  - typeof("1.1") string
  - typeof(true) boolean
  - typeof(null) object
  - typeof(undefined) undefined
  - typeof([]) object
  - typeof({}) object

- **Write a blog about objects and its internal representation in Javascript**

  https://mahesh8276.medium.com/objects-and-its-internal-representation-in-javascript-10b35dc01d6a

- **Execute and see at least 15 cli commands. like mkdir, ls etc**.

1. CHDIR Displays the name of or changes the current directory.
2. CHKDSK Checks a disk and displays a status report.
3. CHKNTFS Displays or modifies the checking of disk at boot time.
4. CLS Clears the screen.
5. CMD Starts a new instance of the Windows command interpreter.
6. COLOR Sets the default console foreground and background colors.
7. COMP Compares the contents of two files or sets of files.
8. COMPACT Displays or alters the compression of files on NTFS partitions.
9. CONVERT Converts FAT volumes to NTFS. You cannot convert the current drive.
10. COPY Copies one or more files to another location.

11. DATE Displays or sets the date.
12. DEL Deletes one or more files.
13. DIR Displays a list of files and subdirectories in a directory.
14. DISKPART Displays or configures Disk Partition properties.
15. DOSKEY Edits command lines, recalls Windows commands, and creates macros.

- **What is the difference between window, screen, and document in Javascript**

WINDOW:

Window is an top level heirarchy in javascript and window consist of number of objects in it as properties and DOCUMENT and SCREEN are one of the objects in Window among all. Window represent the complete things about browsers window.All global JavaScript objects, functions, and variables automatically become members of the window object.Global variables are properties of the window object.Global functions are methods of the window object.

There are lot of properties in window object lets see one example, we can determine the size of the browser window by using below property.

window.innerHeight ->gives height of browser in pixels.

so Hierarchy is as below

DOCUMENT:

DOCUMENT is the actual content of the page i.e the html page you are loading is converted to the DOM object [Document object Model].

When a web page is loaded, the browser creates a Document Object Model of the page.

The HTML DOM will be created as TREE MODEL as below

DOM TREE MODEL

Image for post

Java script connects with the HTML and CSS using the DOM OBJECT.Java Script can manipulate all the elements using DOM object. There are several properties in DOCUMENT. Lets see one example below.

document.getElementById(“header”);// gives the value of header

As document is property of window the above code is same as

window.document.getElementById(“header”);// gives the value of header.

SCREEN:

SCREEN is an property of WINDOW where we can see the content about the users screen.It can be used to display screen width, height etc.

Properties

screen.width

screen.height

screen.availWidth

screen.availHeight

- **Try the rest countries api**

Extract and print the flag url of all the countries in console. use the html template.