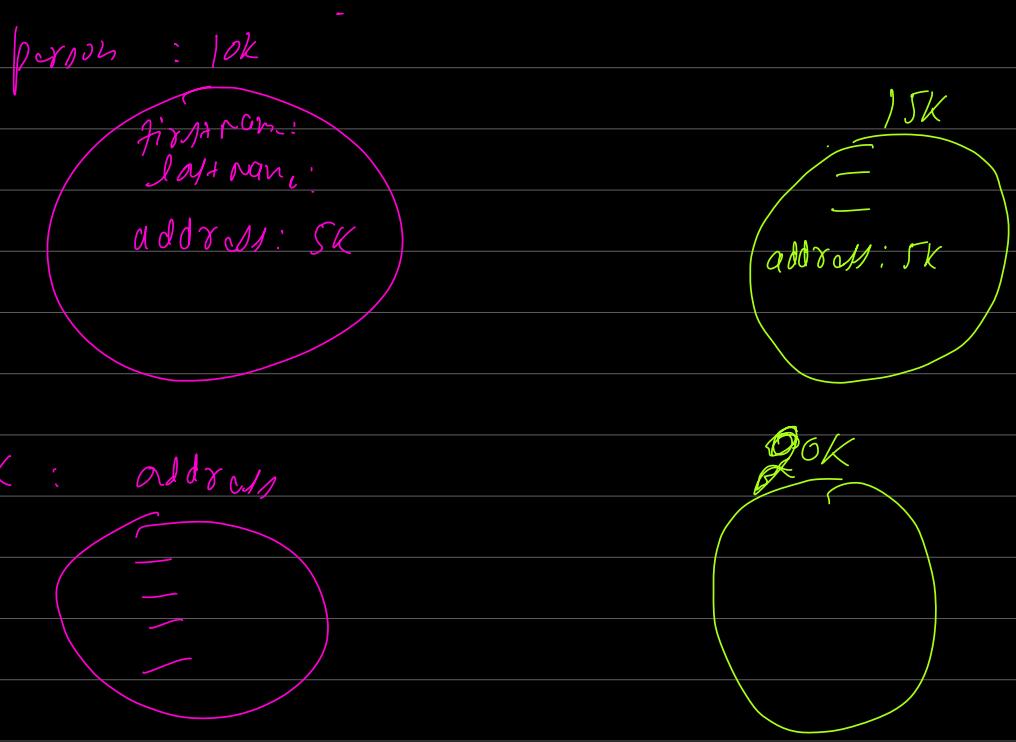
Agenda

1. deep copy and shallow copy
2. polyfill of deep copy
3. flatten an array.
4. array and its imp function.
   i. slice
   ii. Splice
   iii. concat
   iv. Split
   v. join
   vi Trim
5. function, IIFE and it's use case.
6. polyfill of HOF.



complete deep copy

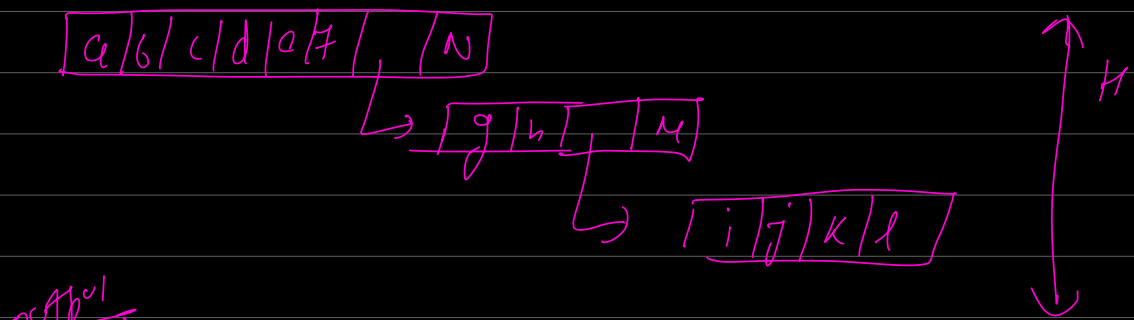
Object ⟶ (json string) ⟶ Object

```js
function superCloneEffective(input) {
    if(!Array.isArray(input) & typeof input !== 'object'){
        return input; // function or either primitive data types.
    }

    // Create a new container to clone values.
    let clone = Array.isArray(input) ? [] : {};

    // Copy all the keys and values.
    for(let key in input){
        const value = input[key];
        clone[key] = superCloneEffective(value);
    }

    // return the obj.
    return clone;
}
```

```js
let person = {
    firstName: 'John',
    lastName: 'Doe',
    address: {
        street: 'North 1st street',
        city: 'San Jose',
        state: 'CA',
        country: 'USA'
    },
    friends: ["Steve", "Nikola", "Ray", { name: "Jai", lastName: "Roy" }],
    sayHi: function(){
        console.log("Hi Class!");
    }
};
```

(Bottom up approach)

input



output

a b c d e f g h i j k l m n

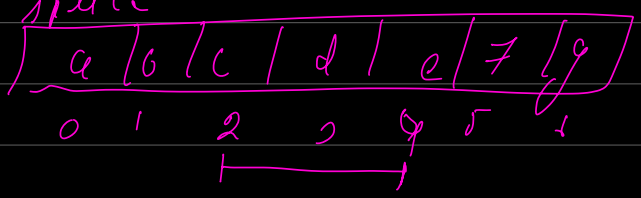
arr1: a b c d e f (N) arr2: g h i j (M)

push ( ) → O(M)

concat → O(N+M)

a b c d e f g h i j

Slice and Splice



Slice (2, 5) = Slice (2, 4+1)

Concat