

1. Html and script.js file and run a for loop on the data and print all the country names in the console.

Answer:- In the HTML and JS file.

2. Write a write up on Difference between copy by value and copy by reference.

Answer:- In Call by value method original value is not modified whereas, in Call by reference method, the original value is modified. In Call by value, a copy of the variable is passed whereas in Call by reference, a variable itself is passed. In Call by value, actual and formal arguments will be created in different memory locations whereas in Call by reference, actual and formal arguments will be created in the same memory location. Call by value is the default method in programming languages like C++, PHP, Visual Basic NET, and C# whereas Call by reference is supported only in the Java language. Call by Value, variables are passed using a straightforward method whereas Call by Reference, pointers are required to store the address of variables.

3. How to copy by value a composite data type (array+objects).

Answer:- There are three ways To Copy By Value Any Composite Data Type In JavaScript -Use the spread ( ... ) syntax. -Use the Object.assign() method. -Use the JSON.stringify() and JSON.parse() methods.

4. JSON Tasks

```
var cat = {name: 'Fluffy', activities: ['play', 'eat cat food'],
```

```
catFriends: [
```

```
{
```

```
name: 'bar', activities: ['be grumpy', 'eat bread omblet'],
```

```
weight: 8, furcolor: 'white'
```

```
},
```

```
{
```

```
name: 'foo',
```

```
activities: ['sleep', 'pre-sleep naps'],
```

```
weight: 3
```

```
}
```

```
]
```

```
}
```

```
if(cat.name==='Fluffy'){
```

```
cat.name='Fluffy';
```

```
cat["height"]='1.2 ft';
```

```

cat["weight"]=6;
}
console.log(cat.height,cat.weight);
console.log(cat.name);
console.log(cat.catFriends[0].activities,cat.catFriends[1].activities);
console.log(cat.catFriends[0].name,cat.catFriends[1].name);
console.log(cat.catFriends[0].weight+cat.catFriends[1].weight);
let c=cat.activities;
let c1=cat.catFriends[0].activities;
let c2=cat.catFriends[1].activities;
console.log(c.length+c1.length+c2.length);
cat.catFriends[0].activities.push('eat well','sleep well');
cat.catFriends[1].activities.push('eat well','sleep well');
console.log(cat.catFriends[0].activities);
console.log(cat.catFriends[1].activities);
cat.catFriends[0].furcolor='Blue';
console.log(cat.catFriends[0].furcolor);

```

```

"Fluffy"
["be grumpy", "eat bread omblet"] ["sleep", "pre-sleep naps"]
"bar" "foo"
11
6
["be grumpy", "eat bread omblet", "eat well", "sleep well"]
["sleep", "pre-sleep naps", "eat well", "sleep well"]
"Blue"

```

Problem 0 : Part B:

```

var myCar = {
  make: 'Bugatti', model: 'Bugatti La Voiture Noire', year: 2019,

```

```
accidents: [  
  {  
    date: '3/15/2019',  
    damage_points: '5000',  
    atFaultForAccident: true  
  },  
  {  
    date: '7/4/2022',  
    damage_points: '2200',  
    atFaultForAccident: true  
  },  
  {  
    date: '6/22/2021',  
    damage_points: '7900',  
    atFaultForAccident: true  
  }  
]  
  
for(let i in myCar.accidents){  
  if(myCar.accidents[i].atFaultForAccident === true){  
    myCar.accidents[i].atFaultForAccident = false;  
  }  
  console.log(myCar.accidents[i]);  
}  
  
for(let i in myCar.accidents){  
  console.log(myCar.accidents[i].date);  
}
```

Output:

```
Object {
  atFaultForAccident: false,
  damage_points: "5000",
  date: "3/15/2019"
}
Object {
  atFaultForAccident: false,
  damage_points: "2200",
  date: "7/4/2022"
}
Object {
  atFaultForAccident: false,
  damage_points: "7900",
  date: "6/22/2021"
}
"3/15/2019"
"7/4/2022"
"6/22/2021"
```



Problem no.1 :

```
var obj = {name : 'RajiniKanth', age : 33, hasPets : false};
```

```
function printAllValues(obj) {
```

```
  let a=[];
```

```
  a.push(obj.name);
```

```
  a.push(obj.age);
```

```
  a.push(obj.hasPets);
```

```
  return a;
```

```
}
```

```
console.log(printAllValues(obj));output:
```

```
["RajiniKanth", 33, false]
```

Problem no.2 :

Parsing an JSON object's Keys:

```
var object= {name : 'prithivi', age : 23, car : false,edu:true};
```

```
function printAllValues(obj) {  
  let ans=[];  
  
  ans=Object.keys(object);  
  return ans;  
}  
console.log(printAllValues(object));
```

output:

```
["name", "age", "car", "edu"]
```

Problem no.3:

Parsing an JSON object and convert it to a list: Write a function called “convertObjectToList” which converts an object literal into an array of arrays.

Input (Object):

```
var object = {name: “ISRO”, age: 35, role: “Scientist”};
```

Output:

```
[["name", "ISRO"], ["age", 35], ["role", "Scientist"]]
```

```
var obj = {name: 'ISRO', age: 35, role: 'Scientist'};
```

```
function convertListToObject(obj) {
```

```
// obj.split(',');
```

```
let a=[];
```

```
let b=[];
```

```
for(let i in obj){
```

```
//a.push();
```

```
a.push([i,obj[i]]);
```

```
}
```

```
console.log(a);}
```

```
convertListToObject(obj);
```

Output:

```
[ [ 'name', 'ISRO' ], [ 'age', 35 ], [ 'role', 'Scientist' ] ]
```

Problem no.4:

Parsing a list and transform the first and last elements of it:

Input (Array)

```
var array = ["GUVI", "I", "am", "Geek"];
```

```
var object = {
```

```
  GUVI : "Geek"
```

```
}
```

```
var arr = ['GUVI', 'I', 'am', 'a geek'];
```

```
function transformFirstAndLast(arr) {
```

```
  let len=arr.length;
```

```
  let obj={};
```

```
  obj[arr[0]]=arr[len-1];
```

```
  console.log(obj);
```

```
}
```

```
transformFirstAndLast(arr);
```

Output:

```
{ GUVI: 'a geek' }
```

PROBLEM no.7:

Parsing two JSON objects and Compare:

```
var expected = {foo: 5, bar: 6};
```

```
var actual = {foo: 6, bar: 6};
```

```
function assertObjectsEqual(actual, expected){
```

```
  if(JSON.stringify(actual) === JSON.stringify(expected)){
```

```
console.log("Passed");
}
else{
console.log("Failed");
}
}assertObjectsEqual(actual, expected);
```

Output:

Passed

Problem no.8:

```
var securityQuestions = [
{
question: 'What was your first pet's name?',
expectedAnswer: 'FlufferNutter'
},
{
question: 'What was the model year of your first car?',
expectedAnswer: '1985'
},
{
question: 'What city were you born in?',
expectedAnswer: 'NYC'
}
]
var realquestion='What was the model year of your first car?';
var answer='1985';
function chksecurityQuestions(securityQuestions,question,ans) {
var output=false;
for(var i=0;i<securityQuestions.length;i++){
```

```

if(securityQuestions[i].question===question){
if(securityQuestions[i].expectedAnswer===ans)
output = true;
}
}
return output;
}
var stats=chksecurityQuestions(securityQuestions,realquestion,answer);
console.log(stats);

```

Output:

True

Problem no.9: Parsing JSON objects and Compare: Write a function to return the list of characters below 20 age

```

var students = [
{
name: 'Siddharth Abhimanyu', age: 21}, { name: 'Malar', age: 25},
{name: 'Maari',age: 18},{name: 'Bhallala Deva',age: 17},
{name: 'Baahubali',age: 16},{name: 'AAK chandran',age: 23}, {name:'Gabbar Singh',age: 33},{name:
'Mogambo',age: 53},
{name: 'Munnabhai',age: 40},{name: 'Sher Khan',age: 20},
{name: 'Chulbul Pandey',age: 19},{name: 'Anthony',age: 28},
{name: 'Devdas',age: 56}
];
function returnMinors(arr)
{
let b=[];
for(let i=0;i<students.length;i++){

```



```
if(students[i].age<20){  
  b.push(students[i].name);  
}  
}  
  
console.log(b);  
}  
  
returnMinors(students);
```

Output:

[ 'Maari', 'Bhallala Deva', 'Baahubali', 'Chulbul Pandey' ]

5. Try the rest countries api. Extract and print the total population of all the countries in the console. use the html template. <https://restcountries.eu/rest/v2/all>

Answer:-

Afghanistan 27657145

Åland Islands 28875

Albania 2886026

Algeria 40400000

American Samoa 57100

Andorra 78014

Angola 25868000

Anguilla 13452

Antarctica 1000

Antigua and Barbuda 86295

Argentina 43590400

Armenia 2994400

Aruba 107394

Australia 24117360

Austria 8725931  
Azerbaijan 9730500  
Bahamas 378040  
Bahrain 1404900  
Bangladesh 161006790  
Barbados 285000  
Belarus 9498700  
Belgium 11319511  
Belize 370300  
Benin 10653654  
Bermuda 61954  
Bhutan 775620  
Bolivia (Plurinational State of) 10985059  
Bonaire, Sint Eustatius and Saba 17408  
Bosnia and Herzegovina 3531159  
Botswana 2141206  
Bouvet Island 0  
Brazil 206135893  
British Indian Ocean Territory 3000  
United States Minor Outlying Islands 300  
Virgin Islands (British) 28514  
Virgin Islands (U.S.) 114743  
Brunei Darussalam 411900  
Bulgaria 7153784  
Burkina Faso 19034397  
Burundi 10114505  
Cambodia 15626444  
Cameroon 22709892  
Canada 36155487

Cabo Verde 531239  
Cayman Islands 58238  
Central African Republic 4998000  
Chad 14497000  
Chile 18191900  
China 1377422166  
Christmas Island 2072  
Cocos (Keeling) Islands 550  
Colombia 48759958  
Comoros 806153  
Congo 4741000  
Congo (Democratic Republic of the) 85026000  
Cook Islands 18100  
Costa Rica 4890379  
Croatia 4190669  
Cuba 11239004  
Curaçao 154843  
Cyprus 847000  
Czech Republic 10558524  
Denmark 5717014  
Djibouti 900000  
Dominica 71293  
Dominican Republic 10075045  
Ecuador 16545799  
Egypt 91290000  
El Salvador 6520675  
Equatorial Guinea 1222442  
Eritrea 5352000  
Estonia 1315944

Ethiopia 92206005  
Falkland Islands (Malvinas) 2563  
Faroe Islands 49376  
Fiji 867000  
Finland 5491817  
France 66710000  
French Guiana 254541  
French Polynesia 271800  
French Southern Territories 140  
Gabon 1802278  
Gambia 1882450  
Georgia 3720400  
Germany 81770900  
Ghana 27670174  
Gibraltar 33140  
Greece 10858018  
Greenland 55847  
Grenada 103328  
Guadeloupe 400132  
Guam 184200  
Guatemala 16176133  
Guernsey 62999  
Guinea 12947000  
Guinea-Bissau 1547777  
Guyana 746900  
Haiti 11078033  
Heard Island and McDonald Islands 0  
Holy See 451  
Honduras 8576532

Hong Kong 7324300  
Hungary 9823000  
Iceland 334300  
India 1295210000  
Indonesia 258705000  
Côte d'Ivoire 22671331  
Iran (Islamic Republic of) 79369900  
Iraq 37883543  
Ireland 6378000  
Isle of Man 84497  
Israel 8527400  
Italy 60665551  
Jamaica 2723246  
Japan 126960000  
Jersey 100800  
Jordan 9531712  
Kazakhstan 17753200  
Kenya 47251000  
Kiribati 113400  
Kuwait 4183658  
Kyrgyzstan 6047800  
Lao People's Democratic Republic 6492400  
Latvia 1961600  
Lebanon 5988000  
Lesotho 1894194  
Liberia 4615000  
Libya 6385000  
Liechtenstein 37623  
Lithuania 2872294

Luxembourg 576200  
Macao 649100  
Macedonia (the former Yugoslav Republic of) 2058539  
Madagascar 22434363  
Malawi 16832910  
Malaysia 31405416  
Maldives 344023  
Mali 18135000  
Malta 425384  
Marshall Islands 54880  
Martinique 378243  
Mauritania 3718678  
Mauritius 1262879  
Mayotte 226915  
Mexico 122273473  
Micronesia (Federated States of) 102800  
Moldova (Republic of) 3553100  
Monaco 38400  
Mongolia 3093100  
Montenegro 621810  
Montserrat 4922  
Morocco 33337529  
Mozambique 26423700  
Myanmar 51419420  
Namibia 2324388  
Nauru 10084  
Nepal 28431500  
Netherlands 17019800  
New Caledonia 268767

New Zealand 4697854  
Nicaragua 6262703  
Niger 20715000  
Nigeria 186988000  
Niue 1470  
Norfolk Island 2302  
Korea (Democratic People's Republic of) 25281000  
Northern Mariana Islands 56940  
Norway 5223256  
Oman 4420133  
Pakistan 194125062  
Palau 17950  
Palestine, State of 4682467  
Panama 3814672  
Papua New Guinea 8083700  
Paraguay 6854536  
Peru 31488700  
Philippines 103279800  
Pitcairn 56  
Poland 38437239  
Portugal 10374822  
Puerto Rico 3474182  
Qatar 2587564  
Republic of Kosovo 1733842  
Réunion 840974  
Romania 19861408  
Russian Federation 146599183  
Rwanda 11553188  
Saint Barthélemy 9417

Saint Helena, Ascension and Tristan da Cunha 4255

Saint Kitts and Nevis 46204

Saint Lucia 186000

Saint Martin (French part) 36979

Saint Pierre and Miquelon 6069

Saint Vincent and the Grenadines 109991

Samoa 194899

San Marino 33005

Sao Tome and Principe 187356

Saudi Arabia 32248200

Senegal 14799859

Serbia 7076372

Seychelles 91400

Sierra Leone 7075641

Singapore 5535000

Sint Maarten (Dutch part) 38247

Slovakia 5426252

Slovenia 2064188

Solomon Islands 642000

Somalia 11079000

South Africa 55653654

South Georgia and the South Sandwich Islands 30

Korea (Republic of) 50801405

South Sudan 12131000

Spain 46438422

Sri Lanka 20966000

Sudan 39598700

Suriname 541638

Svalbard and Jan Mayen 2562



Swaziland 1132657  
Sweden 9894888  
Switzerland 8341600  
Syrian Arab Republic 18564000  
Taiwan 23503349  
Tajikistan 8593600  
Tanzania, United Republic of 55155000  
Thailand 65327652  
Timor-Leste 1167242  
Togo 7143000  
Tokelau 1411  
Tonga 103252  
Trinidad and Tobago 1349667  
Tunisia 11154400  
Turkey 78741053  
Turkmenistan 4751120  
Turks and Caicos Islands 31458  
Tuvalu 10640  
Uganda 33860700  
Ukraine 42692393  
United Arab Emirates 9856000  
United Kingdom of Great Britain and Northern Ireland 65110000  
United States of America 323947000  
Uruguay 3480222  
Uzbekistan 31576400  
Vanuatu 277500  
Venezuela (Bolivarian Republic of) 31028700  
Viet Nam 92700000  
Wallis and Futuna 11750

Western Sahara 510713

Yemen 27478000

Zambia 15933883

Zimbabwe 14240168