**Experiment – 04**

**Aim:**  **Write node.js program to create, access, modify JSON Object.**

[JSON](https://www.geeksforgeeks.org/javascript-json/) or JavaScript Object Notation is a light weight, text-based data interchange format.

* JSON is like XML, it is one of the way of exchanging information between applications.
* This format of data is widely used by web applications/APIs to communicate with each other.

**Reading a JSON file:**

**Method 1:**

**Using require method:** The simplest method to read a JSON file is to require it in a node.js file using require() method.

**Syntax:**

const data = require('path/to/file/filename');

**Example:**

Create a **user.json** file in the same directory where **index.js** file present. Add following data to the json file.

**Programs:**

[user.json]

[

{

"name": "Manohar", "age": 30,

"language": ["MEAN", "Express", "NodeJS"]

},

{

"name": "Jaswanth", "age": 40,

"language": ["Angular", "MEAN", "AngularJS"]

},

{

"name": "Nagendra", "age": 50,

"language": ["JavaScript", "PHP", "Python"]

},

{

"name": "Sai", "age": 47,

"language": ["PHP", "Go", "JavaScript"]

}

]

**[index.js]**

const users = require("./user");

console.log(users);

>>>run the file using the command: node index.js

**Output:**

PS D:\MEAN\_532> node index.js

[

{

name: 'Manohar',

age: 30,

language: [ 'MEAN', 'Express', 'NodeJS' ]

},

{

name: 'Jaswanth',

age: 40,

language: [ 'Angular', 'MEAN', 'AngularJS' ]

},

{

name: 'Nagendra',

age: 50,

language: [ 'JavaScript', 'PHP', 'Python' ]

},

{

name: 'Sai',

age: 47,

language: [ 'PHP', 'Go', 'JavaScript' ]

}

]

**Method 2:**

**Using the fs module:**

We can also use node.js fs module to read a file. The fs module returns a file content in string format so we need to convert it into JSON format by using JSON.parse() in-built method.

**[index.js]**

const fs = require("fs");

// Read users.json file

fs.readFile("user.json", function(err, data)

{

// Check for errors

if (err) throw err;

// Converting to JSON

const users = JSON.parse(data);

console.log(users); // Print users

});

**Output:**

PS D:\MEAN\_532> node index.js

[

{

name: 'Manohar',

age: 30,

language: [ 'MEAN', 'Express', 'NodeJS' ]

},

{

name: 'Jaswanth',

age: 40,

language: [ 'Angular', 'MEAN', 'AngularJS' ]

},

{

name: 'Nagendra',

age: 50,

language: [ 'JavaScript', 'PHP', 'Python' ]

},

{

name: 'Sai',

age: 47,

language: [ 'PHP', 'Go', 'JavaScript' ]

}

]

**Writing to a JSON file:**

We can write data into a JSON file by using the node.js **fs** module. We can use **writeFile** method to write data into a file.

**Syntax:**

fs.writeFile("filename", data, callback);

**Program:**

const fs = require("fs");

// STEP 1: Reading JSON file const users = require("./users");

// Defining new user

 let us = {

name: "New User", age: 30,

language: ["PHP", "Go", "JavaScript"]

};

// STEP 2: Adding new data to users object

users52.push(us);

// STEP 3: Writing to a file

fs.writeFile("user.json", JSON.stringify(user), err => {

// Checking for errors

if (err) throw err;

console.log("Done writing"); // Success

});

**Output:**

PS D:\MEAN\_532> node write.js

Done writing

>>>Now check your **user.json** file it will looks something like below:

[{"name":"Manohar","age":30,"language":["MEAN","Express","NodeJS"]},{"name":"Jaswanth","age":40,"language":["Angular","MEAN","AngularJS"]},{"name":"Nagendra","age":50,"language":["JavaScript","PHP","Python"]},{"name":"Sai","age":47,"language":["PHP","Go","JavaScript"]},{"name":"New User","age":30,"language":["PHP","Go","JavaScript"]}]