Data Engineering

Lab 8 Assignment : JSON

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Question 1

Solve the following:

1. Convert the following JavaScript array to JSON.
   var names = ["james", "jake"];

```
var names = ["james", "jake"]

var jsonArray = JSON.stringify(names)

console.log(jsonArray)
console.log(names)

// WE can also do

const jsonStrings = JSON.stringify(Object.assign({}, names))

console.log(jsonStrings)
```

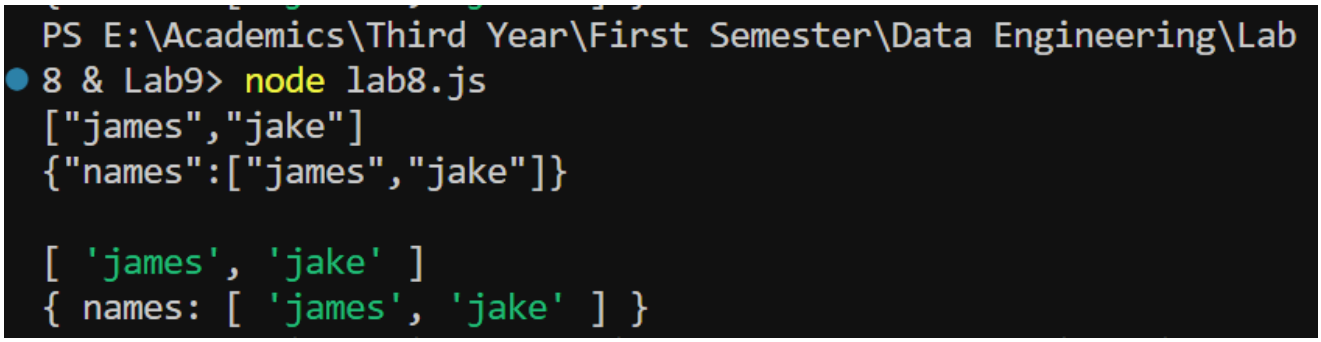
Output

```
PS E:\Academics\Third Year\First Semester\Data Engineering\Lab 8 & Lab9> node lab8.js
["james","jake"]
[ 'james', 'jake' ]
{"0":"james","1":"jake"}
```

```
var names = ["james", "jake"]



var jsonNamesArray = JSON.stringify(names);
```

```
var jsonNamesObject = JSON.stringify({names: names})



console.log(jsonNamesArray);

console.log(jsonNamesObject);



console.log();

// if we need to use the data as a javascript array or object again we can parse the JSON string back to the respective data structure using `JSON.parse()`



var parsedNamesArray = JSON.parse(jsonNamesArray);

var parsedNamesObject = JSON.parse(jsonNamesObject);



console.log(parsedNamesArray);

console.log(parsedNamesObject);
```

Output



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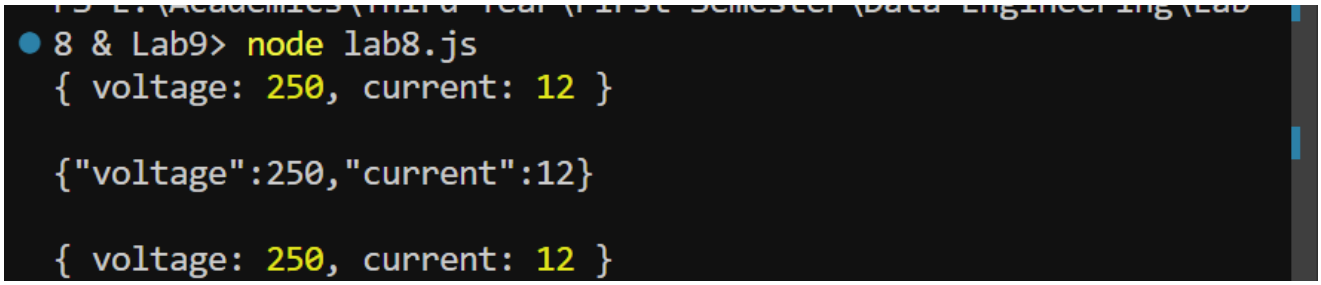
1. Convert the following JavaScript object to JSON
   var power = {voltage: 250, current: 12}

```
var power = { voltage: 250, current: 12 };

var jsonPower = JSON.stringify(power);
```

```
console.log(power)
console.log()

console.log(jsonPower);
console.log()

var parsedPower = JSON.parse(jsonPower);
console.log(parsedPower);
```

Output



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1. The following JSON string consists of'[{“sensor”: “sensor1”, “temperature”: 22, “humidity”: 80}]’ Is it An array
    1. An object
    2. An Array inside an object
    3. An object inside an array

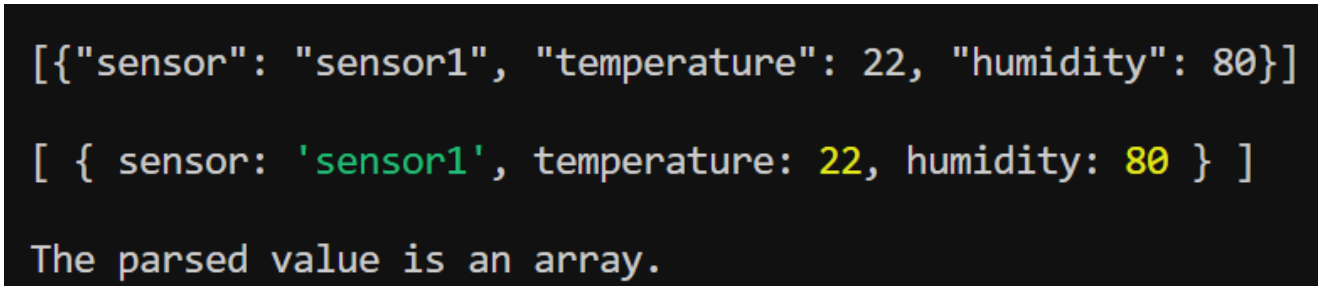
The given JSON String ' [{ "sensor": "sensor1", "temperature": 22, "humidity": 80 }] ' is an array. In this case, the outermost structure is square brackets `[]`, which indicates an array in JSON Notation. Inside the array, there is one object with properties `sensor`, `temperature` and `humidity`.

Hence it is an array.
We can also confirm that by writing a code.

```
var jsonString = '[{"sensor": "sensor1", "temperature": 22, "humidity": 80}]';


console.log(jsonString)

console.log()


// Parsing the JSON string to get the actual JavaScript `value`

var jsonValue = JSON.parse(jsonString);
console.log(jsonValue)

console.log()
```

```
// Checking the type of the parsed value

if (Array.isArray(jsonValue)) {

  console.log('The parsed value is an array.');

} else {

  console.log('The parsed value is not an array.');

}
```

Output



2. The JSON string consists of : '[{“sensor”: “sensor1″,” temperature”: 24, “humidity”: 69},{“sensor”: sensor2, “temperature”: 22, “humidity”: 65}]' Is it?:
    1. Valid
    2. Invalid

The JSON string is `InValid`.

Code

```
var givenjsonString = '[{"sensor": "sensor1","temperature": 24, "humidity": 69},{ "sensor": sensor2, "temperature": 22, "humidity": 65}]';



try {

  // Attempt to parse the JSON string

  var parsedValue = JSON.parse(givenjsonString);



  // Check if the parsed value is an array

  if (Array.isArray(parsedValue)) {
```

```
    console.log('The JSON string is valid and represents an array.');
  } else {
    console.log('The JSON string is valid but does not represent an array.');
  }
} catch (error) {
  console.error('The JSON string is invalid.');
  console.error(error.message);
}
console.log()
```

Output

```
The JSON string is invalid.
Unexpected token s in JSON at position 69
```

We can make it valid by fixing `sensor2` to `"sensor2"`

```
[{"sensor": "sensor1", "temperature": 24, "humidity": 69},
 {"sensor": "sensor2", "temperature": 22, "humidity": 65}]
```

Output after fixing

```
The JSON string is valid and represents an array.
```

Question 2

To encode a LinkedIn profile page (text + profile pic) into a JSON file using Python, you'll need to perform web scraping to extract the required information from the page and then create a JSON file to store that data. Here's an assignment question related to this task:

Creating a Python program that scrapes information from a LinkedIn profile page and encodes it into a JSON file. Your program should extract the following information:
Profile Picture URL: The URL of the LinkedIn profile picture.

`Name` : The name of the LinkedIn user.

`Connections` : The number of connections the user has.

`Summary` : The summary or about section of the user's `profile` .
Education: A list of the user's educational background, including institution names, degrees, and graduation dates.

`Skills` : A list of skills mentioned on the profile.
After extracting this information, create a JSON file and structure it to represent the LinkedIn profile page data.

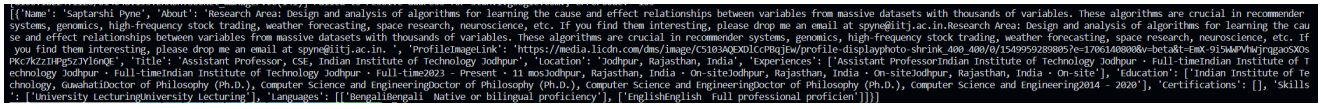
Your program should be designed to take the URL of a LinkedIn profile page as input and output a JSON file with the extracted data.

Bonus Points: Implement error handling for cases where the profile page structure changes or if the page is private. Also, consider encoding the extracted data in a well-structured JSON format.

Files

- `linked.py` : Code that takes Username and Password details from the file `creds.py` and picks up the Linked In profile address from the `mydata.csv` file.
- The extracted data is printed in the terminal as well as written to a file named `data.json`

Screenshot of the output at terminal :



Screenshot of the output `data.json` file :

Thank You :D