

# JavaScript Assignment

## 1. What is JSON?

→ JSON stands for "JavaScript Object Notation." It is a lightweight and widely used data interchange format that is easy for humans to read and write, and easy for machines to parse and generate. JSON is often used to transmit data between a server and a web application, as well as between different parts of a software system.

JSON is based on a subset of the JavaScript Programming Language, and it consists of key-value pairs, where each key is a string and each value can be a string, number, boolean, null, object, or an array.

EXAPMPLE:

```
[{  
  "id":1  
  "name:"abc"  
},  
{  
  "id":2  
  "name:"xyz"  
}]
```

## 2. What is promises?

→ Promises are a fundamental concept in asynchronous programming, particularly in JavaScript. They provide a way to handle asynchronous operations more elegantly and avoid the callback hell (also known as callback pyramid) that can occur when dealing with multiple asynchronous tasks.

In essence, a promise represents a value that may not be available yet, but will be resolved or rejected in the future when an asynchronous operation is completed, such as an HTTP request, file reading, or database query. Promises provide a structured way to handle the result or error of these operations without nesting multiple levels of callbacks.

A promise has three possible states:

1. **Pending:** The initial state when the promise is created and the asynchronous operation has not completed yet.
2. **Fulfilled/Resolved:** The state when the asynchronous operation is successfully completed. At this point, the promise's value is available and can be accessed using **.then()**.
3. **Rejected:** The state when the asynchronous operation encounters an error. The promise's error reason is available and can be accessed using **.catch()**.