**DBMS Lab**

**Assignment No. 14(JSON Objects)**

**Aim:** To create simple objects and array objects using JSON.

**Title:** Create various objects using JSON and implement the same to create array objects.

**Theory:**

**JSON (Java Script Object Notation)**

JSON stands for JavaScript Object Notation. This format was specified by Douglas Crockford. This was designed for human-readable data interchange. JSON has been extended from the JavaScript scripting language.

**Uses of JSON**

1. JSON is used when writing JavaScript based application which includes browser extension and websites.

2. JSON format is used for serializing & transmitting structured data over network connection.

3. JSON is primarily used to transmit data between server and web application.

4. Web Services and API.s use JSON format to provide public data.

5. JSON can be used with modern programming languages.

**Characteristics of JSON**

• It is easy to read and write JSON.

• JSON is lightweight text based interchange format

• JSON is language independent.

**Data Types Supported by JSON**

The various data types supported by JSON are shown in following table:



**Creation of Simple Objects using JSON**

JSON objects can be created with Java Script.

**To create an empty object:**

var JSONObj = {};

**To create a new object:**

var JSONObj = new Object ();

**Object**

It is an unordered set of name/value pairs. Object is enclosed in curly braces i.e. it starts with '{' and ends with '}'. Each name is followed by ':'( colon) and the name/value pairs are separated by , (comma).

The keys must be strings and should be different from each other. Objects should be used when the key names are arbitrary strings.

**Syntax:**

{key: value, .......}

Example showing Object:

{“id": "011A", "language": "JAVA", "price": 500, }

**Example:**

<html>

<head>

<title>Welcome to AIT to learn JSON </title>

<script language="javascript" >

var JSONObj = { "name" : " https://www.aitpune.com/", "Academic\_Year": 2018-19 };

document.write ("<h1>JSON with JavaScript example</h1>");

document.write ("<br>");

document.write ("<h3>Website Name="+JSONObj.name+"</h3>");

doc </script>

</head>

<body>

</body>

</html>ument.write("<h3>Academic Year="+JSONObj.year+"</h3>");

Note: **Write the above code in any editor and save with extension .html. Output can be viewed through any web browser by opening this html file in web browser.**

**Creation of an Array Object in JSON**

Array objects are the objects containing multiple objects in sequential fashion which are separated by comma (,). We can maintain various objects inside a single array object,

**Syntax**

{key :[{value1},{value2},…..]}

Example showing an Array Object:

{ "books": [ { "language":"Java" , "edition":"second" },

{ "language":"C++" , "lastName":"fifth" },

{ "language":"C" , "lastName":"third" } ] }

**Sample Example:**

<html>

<head>

<title>Creation of array object in javascript using JSON</title>

<script language="javascript" >

document.writeln("<h1>Example of JSON Array object</h1>");

var book = { "DBMS" : [

{ "Name" : "DBMS System", "Price" : 250 },

{ "Name" : "No SQL ", "price" : 400 }

],

"Mongo" : [

{ "Name" : "Mongo DB", "price" : 200 },

{ "Name" : "Mongo DB and Java", "price" : 300 }

]

}

var i = 0

document.writeln("<table border='4'><tr>");

for(i=0;i<book.DBMS.length;i++)

{

document.writeln("<td>");

document.writeln("<table border='2' width=100 >");

document.writeln("<tr><td><b>Name</b></td><td width=50>"

+ book.DBMS[i].Name+"</td></tr>");

document.writeln("<tr><td><b>Price</b></td><td width=50>"

+ book.DBMS[i].price +"</td></tr>");

document.writeln("</table>");

document.writeln("</td>");

}

for(i=0;i<book.Mongo.length;i++)

{

document.writeln("<td>");

document.writeln("<table border='2' width=100 >");

document.writeln("<tr><td><b>Name</b></td><td width=50>"

+ book.Mongo[i].Name+"</td></tr>");

document.writeln("<tr><td><b>Price</b></td><td width=50>"

+ book.Mongo[i].price+"</td></tr>");

document.writeln("</table>");

document.writeln("</td>");

}

document.writeln("</tr></table>");

</script>

</head>

<body>

</body>

</html>

**Conclusion:**

Create simple JSON objects and write the concluding remarks specifying the use of JSON.

**Viva Questions:**

1. Explain the use of JSON.

2. Explain encoding and decoding functions in JSON.

3. How to encode/decode JSON objects using PHP? Explain with suitable example?

4. How to encode/decode JSON objects using JAVA? Explain with suitable example?