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Experiment 3a

Aim :- a)To use javascript and code the following : Fibonacci series, factors and objects.
b)Use javascript to validate the form which includes name validation , email validation, phone number validation , password validation.

THEORY: Javascript is used to program the behaviour of web pages.JavaScript is the programming language of the Web.JavaScript is the world's most popular programming language

To create Variables:

- var x; (value can be changed)
- let y;
- const z; (value cannot be changed after declaring)

Comments:

- Single line comments (//this is a comment)
- Multi line comments (/*this is a comment*/)

Data types:

primitive data types - They are the predefined data types in javascript.

1. Numbers
2. Strings
3. Boolean
4. Null
5. Undefined
6. Symbol
7. NaN

Non primitive data types: They are defined by the users

1. Objects
2. Arrays

Loops:

There are 3 types of loops :

1. For loop

Syntax: for(initialisation; condition; incrementation)

2. While loop

Syntax: while (condition)

3. For of loop- loops through the values of an iterable object.

   Syntax:
   For(variable of iterable)

Form validation :

HTML form validation can be done by JavaScript.

If a form field (First Name, E-mail, Password) is empty, this function alerts a message, and returns false, to prevent the form from being submitted.

Data validation is the process of ensuring that user input is clean, correct, and useful.

Q1. Fibonacci Series using recursion

Code :-

```
var fibonacci_series = function (n)
{
  if (n===1)
  {
    return [0, 1];
  }
  else
  {
    var s = fibonacci_series(n - 1);
    s.push(s[s.length - 1] + s[s.length - 2]);
    return s;
  }
};
 console.log(fibonacci_series(8));
```

Output :-

```
[Running] node "c:\Users\mannp\fibonacci3a.js"
[
  0, 1,  1,  2, 3,
  5, 8, 13, 21
]

[Done] exited with code=0 in 0.188 seconds
```

Q2. To find the factors of a number

Code :-

```
const prompt = require("prompt-sync")();
const num = prompt('Enter a positive number: ');
console.log(`The factors of ${num} is:`);
for(let i = 1; i <= num; i++) {
    if(num % i == 0) {
        console.log(i);
    }
}
```

Output :-

```
PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE                    powershell

Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\mannp> node factors.js
Enter a positive number: 5
The factors of 5 is:
1
5
```

Q3. Create an object use arrays, methods and nested objects also use this keyword
Code:-

```
const ves = {
    name: 'VESIT',
    address: 'chembur',
    phone: 4563728282,
    types: ['engineering','architecture','pharmacy'],
    greet:function ()
    {
    console.log("welcome to"+ " " + this.name);
    },
    branch:
    {
    name: 'AIDS',
    strength: 70
    }
}
    console.log('Type of object is: ' + typeof ves)
    console.log(ves.greet)
    console.log(ves)
```

Output :-

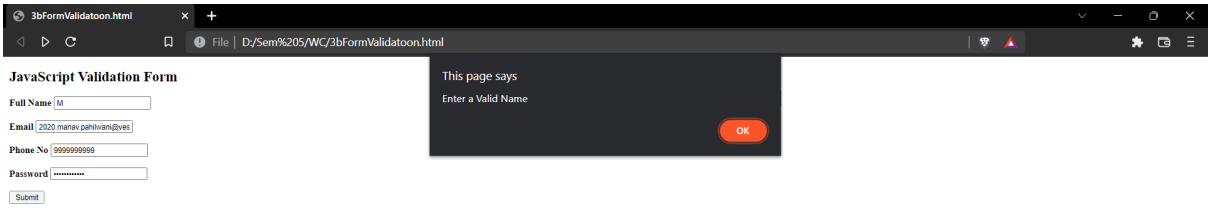
```
[Running] node "c:\Users\mannp\object.js"
Type of object is: object
[Function: greet]
{
  name: 'VESIT',
  address: 'chembur',
  phone: 4563728282,
  types: [ 'engineering', 'architecture', 'pharmacy' ],
  greet: [Function: greet],
  branch: { name: 'AIDS', strength: 70 }
}

[Done] exited with code=0 in 0.274 seconds
```

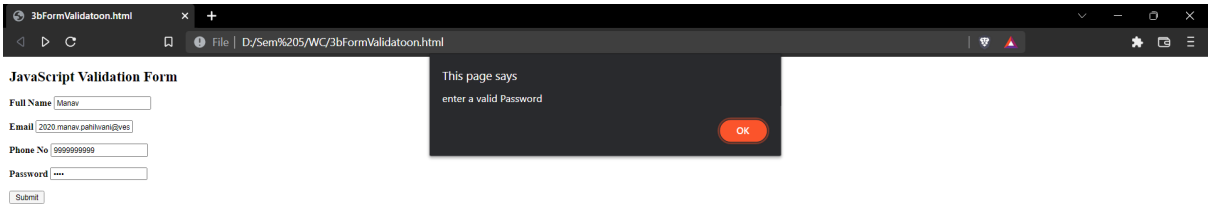
3B Code :-

```
<!DOCTYPE html>
<form class = "exp3b">
<html>

<head>
<link rel='stylesheet' href='3b.css' type='text/css' />
    <title>3b Form Validation</title>
    <script>
        function validateForm(inputText)
        {
            let x = document.forms["myForm"]["fname"].value;
            if (x.length < 2)
            {
                alert("Enter a Valid Name");
                return false;
            }

            let y = document.forms["myForm"]["email"].value;
             if (y=="")
            {
                alert("Enter a Valid E-mail");
                return false;
            }
            let z = document.forms["myForm"]["phone"].value;
```

```
            if (z.length != 10)
            {
                alert("Enter a Valid Phone Number");
                return false;
            }
            let p = document.forms["myForm"]["pwd"].value;
            if (p.length < 6)
            {
                alert("Enter a Valid Password");
                return false;
            }
        }
    </script>
</head>

<body>
    <h2>JavaScript Validation Form</h2>

    <form name="myForm" action="/action_page.php" onsubmit="return
validateForm()" method="post">
        <label for="name"><b>Full Name</b></label>
        <input type="text" placeholder="Enter full name" name="Fname"
id="fname" required><br><br>

        <label for="email"><b>E-mail</b></label>
        <input type="text" placeholder="Enter Email" name="email"
id="email" required><br><br>

        <label for="phone no"><b>Contact Number</b></label>
        <input type="text" pattern="^[0-9]*$" maxlength = "10"
placeholder="Enter Contact Number" name="phone number" id="phone"
required><br><br>

        <label for="password"><b>Password</b></label>
        <input type="password" placeholder="Enter your Password"
pwd="password" id="pwd" required><br><br>

        <input type="submit" value="Submit">
    </form>
</body>
</html>
</form>
```

Output :-





Conclusion :-

Thus we have successfully implemented 3 programs and also learnt about the syntax to create variables, about the data types, loops.