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:

A. Javascript is used to program the behavior of web pages. JavaScript (js) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document.
With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

B. It is important to validate the form submitted by the user because it can have inappropriate values. So, validation is a must to authenticate users.

JavaScript provides the facility to validate the form on the client side data processing will be faster than server-side validation. Most web developers prefer JavaScript form validation. Through JavaScript, we can validate name, password, email, date, mobile numbers and more fields.

Form validation can happen on the client side and the server side. Client side validation occurs using HTML5 attributes and client side JavaScript.

Here are some common validation cases:

- Making fields required using required
- Constraining the length of data:
- minlength, maxlength: for text data

Syntax: to create variables

Var x; // value can be changed

Let y;

Const z; // value cannot be changed after declaring

Comments: we have single line comments (//this is a comment) and

multi line comments (/*this is comment*/)

Data types: primitive data types – they are the pre defined data types in javascript.

Numbers, strings, Boolean, null,undefined, symbol, NaN

Non primitive data types – they are defined by the users

Objects , arrays

Loops: there are 3 types of loops :

- For loop

Syntax: for(initialisation; condition; incrementation)

- While loop

Syntax: while (condition)

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

Syntax: For(variable of iterable)

A. CODE & OUTPUT:

1. Fibonacci:

```
let x=0;
let y=1;
let z;
function fib(n){
   if (n>1)
   {
      z=x+y;
      x=y;
      y=z;
      console.log(z)
      fib(n-1)
   }
}
console.log(0);
console.log(1);
console.log(fib(8));
```

```
node /tmp/AKeeuXv2LR.js
0
1
1
2
3
5
8
13
21
```

2. **Factors:**

```
function factor(n){
   for (let i=1;i<=n;i++)
   {
      if (n%i==0)
      {
         console.log(i)
      }
   }
}
factor(15)
```

```
node /tmp/AKeeuXv2LR.js
1
3
5
15
```

3. **Objects**

```
const ves={
   name:'VESIT',
   address:'Chembur',
```

```
    phone: 8355943385,
    types:['Engineering', 'Architecture'],
    greet:function()
    {
       console.log("welcome to "+ this.name);
    },
    branch:
    {
       name:'AIDS',
       strength: 69
    }
}
console.log('type of object is: '+typeof ves)
console.log(ves.greet)
console.log(ves)
```

```
node /tmp/AKeeuXv2LR.js
type of object is: object
[Function: greet]
{ name: 'VESIT',
  address: 'Chembur',
  phone: 8355943385,
  types: [ 'Engineering', 'Architecture' ],
  greet: [Function: greet],
  branch: { name: 'AIDS', strength: 69 } }
```

B. VALIDATION FORM:

```
<!DOCTYPE html>
<html>

<head>
  <script>
    function validateForm(inputText) {
      let x = document.forms["myForm"]["fname"].value; if (x.length < 2) {
        alert("Enter a Valid Name");
        return false;
      }
```

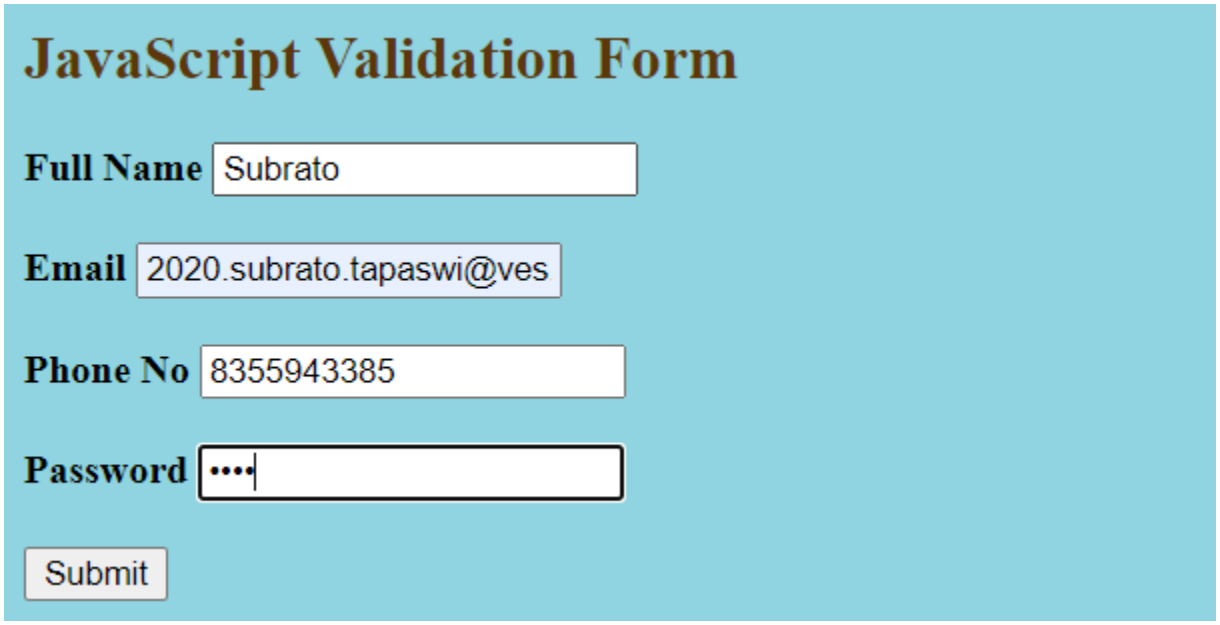
```
        let y = document.forms["myForm"]["email"].value; if (y == "") {
            alert(" Enter a Valid E-mail");
            return false;
        }
        let z = document.forms["myForm"]["phone"].value; if (z.length < 10) {
            alert("Enter a valid Phone Number");
            return 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" class="form"> <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>Email</b></label>
    <input type="text" placeholder="Enter Email" name="email" id="email"
required><br><br>
    <label for="phone no"><b>Phone No</b></label>
    <input type="number" 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 the password" pwd="password"
id="pwd" required><br><br>
    <input type="submit" value="Submit">
  </form>
```

```
    <body style="background-color:#8fd4e0;"></body>
    <style>
        h2 {
            color: #5c3709;
        }

        b {
            color: rgb(0, 0, 0)
        }
    </style>
</body>

</html>
```



CONCLUSION: Hence we have studied the basics of javascript such as data types, loops, var, let and form validation and implemented the above questions.