```
Task 1

<script>
    function fact(num){
    if(num==0){
        return 1;
    }
    else{
        return num*fact(num-1);
    }
}

console.log(fact(6));
console.log(fact(0))

</script>
```

```
C (i) File | D:/717823I322/task1aj.html
```

```
<!DOCTYPE html>
<html lang="en">
    <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
   <script>
        function fib(n){
        if(n<=1){
            return n;
        else {
            return fib(n-1)+fib(n-2);
        document.writeln(fib(4),"<br>");
        document.writeln(fib(0),"<br>");
    </script>
</body>
</html>
```

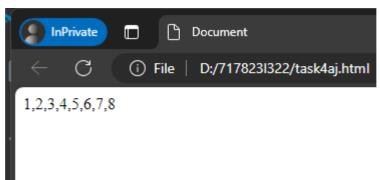
```
C File | D:/717823I322/task1aj.html

720
1
```

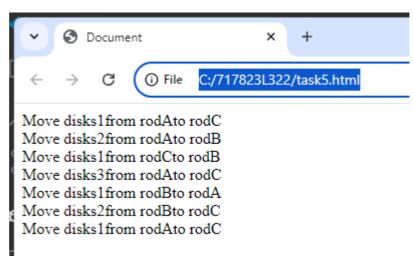
```
<!DOCTYPE html>
<html lang="en">
    <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
   <script>
        function countWays(n) {
   if (n === 0) return 1;
   if (n < 0) return 0;
    return countWays(n - 1) + countWays(n - 2) + countWays(n - 3);
const n = 4;
console.log(countWays(n));
    </script>
</body>
```

PROBLEMS OUTPUT DEBUG CONSOLE ***

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
   <script>
        function flattenarr(inputarr){
            let outputarr=[];
            recursion(0,inputarr,outputarr);
            return outputarr;
        function recursion(index,inputarr,outputarr){
            if(index>=inputarr.length){
                return;
            if(Array.isArray(inputarr[index])){
                recursion(0,inputarr[index],outputarr);
            }
            else{
            outputarr.push(inputarr[index]);
         recursion(index+1,inputarr,outputarr);
        flatarray=flattenarr([1,2,[3,4,[5,6],7,8]]);
        document.writeln(flatarray);
   </script>
</body>
</html>
```



```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
        function TowerOfHanoi(n,src,des,temp){
            if(n==0){
                return;
            TowerOfHanoi(n-1,src,temp,des);
            document.writeln("Move disks"+n+"from rod"+src+"to rod"+des+"<br/>);
            TowerOfHanoi(n-1,temp,des,src);
        TowerOfHanoi(3,"A","C","B");
   </script>
</body>
```



```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
<body>
   <script>
   function sum(...args) {
       return args.reduce((accum, num) => accum+ num, 0);
     console.log(sum(1, 2, 3));
     console.log(sum(10, 50));
     console.log(sum(5));
     console.log(sum());
   </script>
</body>
</html>
```

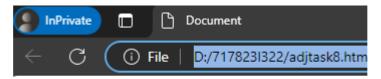
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINA

6
60
5
0
```

```
</body>
</html>
```

```
PROBLEMS OUTPUT <u>DEBUG CONSOLE</u> TERMINAL P
```

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
<body>
   <script>
   function deepclone(student){
        return JSON.parse(JSON.stringify(student));
   const student={
       name:"kamali",
       college:"kce",
       address:{
            place:"coimbatore",
           pincode: "641032"
        },
        department:"ECE"
   };
    const cloned=deepclone(student);
    cloned.name="Indhirani";
    cloned.college="IIT madras";
    console.log("original object",student);
    console.log("cloned object",cloned);
    </script>
</body>
</html>
```



original object[object Object] cloned object[object Object]

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
   function merged(obj1,obj2){
        return {...obj1,...obj2};
    const object1={
        name:"kamali",
        age:"18",
    };
    const object2={
        college:"kce",
        rollno:"322",
   };
   const mergedobj=merged(object1,object2);
   console.log(mergedobj);
</script>
</body>
</html>
```

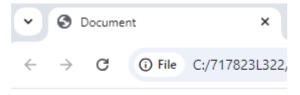
```
PROBLEMS OUTPUT <u>DEBUG CONSOLE</u> TERMINAL PORTS Filter (e.g. > {name: 'kamali', age: '18', college: 'kce', rollno: '322'}
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, !exclude, \escape)

the serialized object is {"name":"kamali","age":"18","birthDate":"2006-05-13T00:00:00.000Z"}

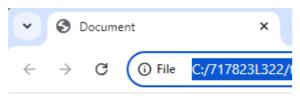
> the parsed object {name: 'kamali', age: '18', birthDate: '2006-05-13T00:00:00.000Z'}
```

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
        function function1(n){
            return function function2(){
                document.writeln("value:"+n);
            };
        let a=function1(5);
        a();
   </script>
</body>
</html>
```



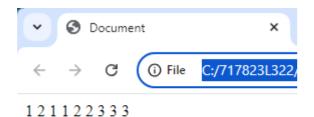
value:5

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
        function counter()
            let count=0;
            return function(){
                count++;
                document.writeln(count);
            };
        let mycount=counter();
        mycount();
        mycount();
        mycount();
    </script>
</body>
</html>
```



123

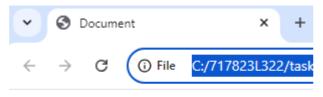
```
<title>Document</title>
<body>
   <script>
       function counter(){
            let count=0;
            return function(){
                count++;
                document.writeln(count);
        let mycount1=counter();
        let mycount2=counter();
       let mycount3=counter();
       mycount1();
       mycount1();
       mycount2();
       mycount3();
       mycount3();
       mycount2();
       mycount1();
       mycount2();
       mycount3();
   </script>
</body>
</html>
```



```
}
}
let mycount=counter();
document.writeln(mycount());
document.writeln(mycount());
document.writeln(mycount());
document.writeln(mycount());

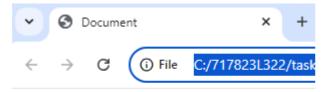
</pod>

<
```



1234

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
   <script>
        function multiplierFactory(multiplier){
            return function(num){
                return num*multiplier;
        let double=multiplierFactory(2);
        let triple=multiplierFactory(3);
        document.writeln(double(5));
        document.writeln(double(10));
        document.writeln(triple(3));
        document.writeln(triple(7));
        </script>
</body>
</html>
```



10 20 9 21

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
<body>
    <script>
   function greetAfterSeconds(seconds, greeting) {
        return new Promise((resolve) => {
          setTimeout(() => {
            resolve(greeting);
          }, seconds * 1000);
        });
      greetAfterSeconds(3, "Hello, world!").then((message) => {
        console.log(message);
      });
    </script>
</body>
</html>
 PROBLEMS
           OUTPUT
                                   TERMINAL
                    DEBUG CONSOLE
                                             PORTS
   Hello, world!
```

```
.then((response) => {
      if (!response.ok) {
        throw new Error(`HTTP error! status: ${response.status}`);
      return response.json();
    });
function processData(data) {
  return new Promise((resolve) => {
    const processedData = data.map((item) => ({
      id: item.id,
      name: item.name.toUpperCase(),
      email: item.email,
    }));
    resolve(processedData);
  });
const apiUrl = "https://jsonplaceholder.typicode.com/users";
fetchData(apiUrl)
  .then((data) => {
    console.log("Fetched Data:", data);
    return processData(data);
  })
  .then((processedData) => {
    console.log("Processed Data:", processedData);
  })
  .catch((error) => {
    console.error("Error:", error);
  });
    </script>
</body>
</html>
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

> Fetched Data: (10) [{...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}
```

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
       function randomPromise() {
 return new Promise((resolve, reject) => {
   const randomNumber = Math.random();
   if (randomNumber > 0.5) {
     resolve('Success: The random number is greater than 0.5');
     reject('Failure: The random number is less than or equal to 0.5');
 });
randomPromise()
  .then((message) => {
   console.log(message);
 })
 .catch((error) => {
   console.log(error);
 });
   </script>
</body>
</html>
```

```
PROBLEMS OUTPUT <u>DEBUG CONSOLE</u> TERMINAL PORTS

Failure: The random number is less than or equal to 0.5
```

```
<!DOCTYPE html>
<html lang="en">
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
function fetchData(apiUrl) {
  return fetch(apiUrl)
    .then((response) => {
      if (!response.ok) {
        throw new Error(`HTTP error! status: ${response.status}`);
      return response.json();
    });
const apiUrls = [
  'https://jsonplaceholder.typicode.com/users',
  'https://jsonplaceholder.typicode.com/posts',
  'https://jsonplaceholder.typicode.com/comments'
];
Promise.all(apiUrls.map(url => fetchData(url)))
  .then((results) => {
    const [users, posts, comments] = results;
    console.log("Users:", users);
    console.log("Posts:", posts);
    console.log("Comments:", comments);
  })
  .catch((error) => {
    console.error("Error:", error);
  });
    </script>
</body>
</html>
```

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
function fetchData(apiUrl) {
 return new Promise((resolve, reject) => {
    setTimeout(() => {
      if (Math.random() > 0.1) {
        resolve(`Data from ${apiUrl}`);
        reject(`Failed to fetch from ${apiUrl}`);
    }, 1000);
 });
function processData(data) {
 return new Promise((resolve) => {
    setTimeout(() => {
      resolve(data.toUpperCase());
   }, 1000);
  });
function saveData(data) {
 return new Promise((resolve) => {
   setTimeout(() => {
      resolve(`Data saved: ${data}`);
    }, 1000);
 });
fetchData('https://api.example.com/resource1')
  .then((data) => {
   console.log('Fetched:', data);
```

```
return processData(data);
})
.then((processedData) => {
   console.log('Processed:', processedData);
   return saveData(processedData);
})
.then((savedData) => {
   console.log(savedData);
})
.catch((error) => {
   console.error('Error:', error);
});
   </script>
</body>
</html>
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Fetched: Data from https://api.example.com/resource1

Processed: DATA FROM HTTPS://API.EXAMPLE.COM/RESOURCE1

Data saved: DATA FROM HTTPS://API.EXAMPLE.COM/RESOURCE1
```

```
<!DOCTYPE html>
<html lang="en">
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tasks</title>
</head>
<body>
    <script>
        async function function1() {
        return new Promise((resolve, reject) => {
        setTimeout(() => resolve("Hello,Indhi"), 1000);
    });
async function function2() {
   try {
        let ans = await function1();
        console.log(ans);
    } catch (error) {
       console.error(error);
    }
function2();
    </script>
</body>
```

</html>

```
PROBLEMS OUTPUT <u>DEBUG CONSOLE</u> TERMINAL PORTS
Hello, KAMALI
```

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tasks</title>
</head>
<body>
<script>
async function fetchData(apiUrl) {
try {
    const response = await fetch(apiUrl);
    const data = await response.json();
    console.log(data);
} catch (error) {
console.log("Error fetching data:", error);
fetchData("https://jsonplaceholder.typicode.com/posts");
</script>
</body>
</html>
```

```
console.log(data);
} catch (error) {
    console.error("Error fetching data:", error.message);
}

fetchMultiple([
    "https://jsonplaceholder.typicode.com/posts",
    "https://jsonplaceholder.typicode.com/users"

]);
</script>
</body>
</html>
```

```
PROBLEMS OUTPUT <u>DEBUG CONSOLE</u> TERMINA

> (2) [Array(100), Array(10)]
```

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
</head>
<body>
   <script>
        async function waitForAllOperations() {
        const asyncOperation1 = new Promise(resolve => setTimeout(() =>
resolve("Operation 1 complete"), 1000));
        const asyncOperation2 = new Promise(resolve => setTimeout(() =>
resolve("Operation 2 complete"), 2000));
        const asyncOperation3 = new Promise(resolve => setTimeout(() =>
resolve("Operation 3 complete"), 1500));
        try {
           const results = await Promise.all([asyncOperation1, asyncOperation2,
asyncOperation3]);
           console.log("All operations completed:", results);
        } catch (error) {
        console.error("An error occurred during operations:", error);
waitForAllOperations();
   </script>
</body>
</html>
```

```
PROBLEMS OUTPUT DEBUG CONSOLE
                                  TERMINA
 > (2) [Array(100), Array(10)]
// myModule.js
export function greet(name) {
   return `Hello, ${name}!`;
  export class Person {
   constructor(name, age) {
     this.name = name;
     this.age = age;
   greet() {
      return `Hi, I'm ${this.name} and I'm ${this.age} years old.`;
  export const appVersion = "1.0.0";
// main.js
import { greet, Person, appVersion } from './myModule.js';
console.log(greet("Gokila"));
const person = new Person("Bob", 30);
console.log(person.greet());
console.log(`App Version: ${appVersion}`);
 Hello, Gokila!
 Hi, I'm Bob and I'm 30 years old.
 App Version: 1.0.0
```

```
Task 28
// mathFunctions.js

export function add(a, b) {
   return a + b;
}
```

```
export function subtract(a, b) {
  return a - b;
}
export function multiply(a, b) {
  return a * b;
}
```

```
// main.js
import { add, subtract, multiply } from './mathFunctions.js';

const sum = add(5, 3);
const difference = subtract(9, 4);
const product = multiply(4, 6);

console.log(`Sum: ${sum}`);
console.log(`Difference: ${difference}`);
console.log(`Product: ${product}`);
```

```
C:\Program Files\nodejs\node.exe .\n
(node:15376) [MODULE_TYPELESS_PACKAGE
ed and it doesn't parse as CommonJS
Reparsing as ES module because modul
To eliminate this warning, add "type
(Use `node --trace-warnings ...` to
Sum: 8
Difference: 5
Product: 24
```

```
Task 29
// mathFunctions.js

export function add(a, b) {
   return a + b;
}

export function subtract(a, b) {
   return a - b;
}

export function multiply(a, b) {
   return a * b;
}

export function divide(a, b) {
   if (b === 0) {
      throw new Error("Cannot divide by zero");
}
```

```
}
return a / b;
}
```

```
// main.js
import { add, multiply } from './mathFunctions.js';

const sum = add(10, 5);
const product = multiply(4, 3);

console.log(`Sum: ${sum}`);
console.log(`Product: ${product}`);
```

```
C:\Program Files\nodejs\node.
(node:14716) [MODULE_TYPELESS
ed and it doesn't parse as Co
Reparsing as ES module because
To eliminate this warning, ac
(Use `node --trace-warnings .
Sum: 15
Product: 12
```

```
Task 30
// mathOperations.js

export default function calculate(a, b, operation) {
    switch (operation) {
        case 'add':
            return a + b;
        case 'subtract':
            return a - b;
        case 'multiply':
            return a * b;
        case 'divide':
            if (b === 0) {
                 throw new Error('Cannot divide by zero');
            }
            return a / b;
            default:
                throw new Error('Unknown operation');
        }
}
```

```
export function square(a) {
  return a * a;
}

export function cube(a) {
  return a * a * a;
}
```

```
// main.js

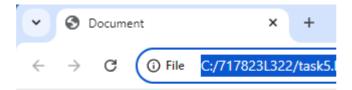
import calculate from './mathOperations.js';
import { square, cube } from './mathOperations.js';

console.log(calculate(10, 5, 'add'));
console.log(square(4));
console.log(cube(3));
```

```
C:\Program Files\nodejs\node.exe .

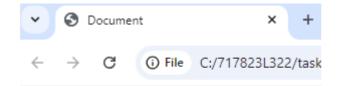
(node:14492) [MODULE_TYPELESS_PACK ed and it doesn't parse as Common! Reparsing as ES module because mode to eliminate this warning, add "ty (Use `node --trace-warnings ...` to 15

16
27
```



Welcome to the world!

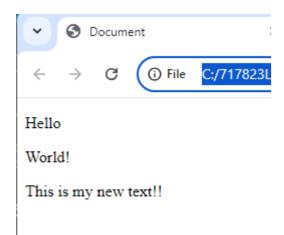
```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8" />
   <meta name="viewport" content="width=device-width,initial-scale=1.0" />
   <title>Document</title>
 </head>
 <body>
     <h1 id="myElement">Hello,World!</h1>
     <button onclick="changeColor()">Change Color</button>
   </div>
   <script>
     function changeColor() {
       let ele= document.getElementById("myElement");
       ele.style.color="blue";
   </script>
 </body>
```



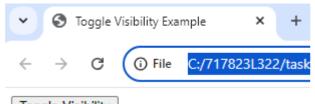
Hello, World!

Change Color

```
<!DOCTYPE html>
<html lang="en">
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
<body>
  <div id="new">
     Hello
     World!
  </div>
  <script>
     var tag = document.createElement("p");
     var text = document.createTextNode("This is my new text!!");
     tag.appendChild(text);
     var element = document.getElementById("new");
     element.appendChild(tag);
  </script>
</body>
```



```
//js file
function toggleVisibility(elementId) {
    const element = document.getElementById(elementId);
    if (!element) {
        console.error(`Element with ID "${elementId}" not found.`);
        return;
    }
    if (element.style.display === "none") {
        element.style.display = "block";
    } else {
        element.style.display = "none";
    }
}
```



Toggle Visibility
Hello, I am visible!

```
function handleAttribute(elementId, attributeName, newValue) {
    const element = document.getElementById(elementId);
    if (!element) {
        console.error(`Element with ID "${elementId}" not found.`);
        return;
    }
    const currentValue = element.getAttribute(attributeName);
    console.log(`Current value of "${attributeName}": ${currentValue}`);
    if (newValue) {
        element.setAttribute(attributeName, newValue);
        console.log(`Updated "${attributeName}" to: ${newValue}`);
    }
}
</script>
</html>
```

