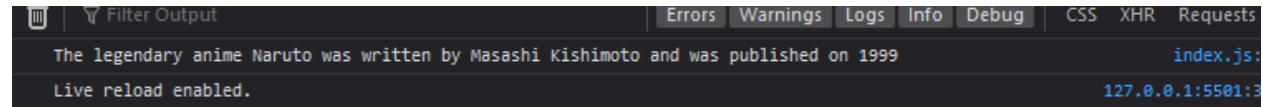


Week-2:

Task 1: Create an object named book with properties: title, author, and yearPublished. Add a method named getSummary that returns a string summarizing the book.

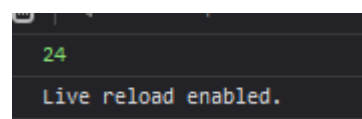
```
let book={
  title : "Naruto",
  author: "Masashi Kishimoto",
  year: 1999
};
function getSummary(){
  console.log('The legendary anime '+book.title+' was written by '+book.author+' and was published on '+book.year);
}
getSummary();
```



The screenshot shows the browser's developer console with the 'Logs' tab selected. It displays the output of the `getSummary` function: 'The legendary anime Naruto was written by Masashi Kishimoto and was published on 1999'. The console also shows 'Live reload enabled.' and the file path 'index.js:127.0.0.1:5501:3'.

Task 2: Modify the book object to include a method named age that calculates how old the book is based on its publication year.

```
let book={
  title : "Naruto",
  author: "Masashi Kishimoto",
  year: 1999,
  age: function(){
    let newage = 2023 - this.year;
    return newage;
  }
};
let res = book.age();
console.log(res);
```



The screenshot shows the browser's developer console with the 'Logs' tab selected. It displays the output of the `age` function: '24'. The console also shows 'Live reload enabled.'.

Task 3: Create an object calculator with methods add(), subtract(), multiply(), and divide(). Use the this keyword to refer to the object's properties within these methods.

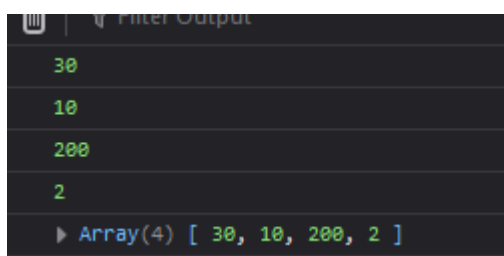
```
let calculator={
  n1:prompt("Enter num1:"),
  n2:prompt("Enter num2:"),
  add:function(){
    return Number(this.n1)+Number(this.n2);
  },
  sub:function(){
    return this.n1-this.n2;
  },
  mul:function(){
    return this.n1*this.n2;
  },
  div:function(){
    return this.n1/this.n2;
  }
};
console.log(calculator.add());
console.log(calculator.sub());
console.log(calculator.mul());
console.log(calculator.div());
```

```
▶ GET http://3
15
5
50
2
```

Task 4: Extend the calculator object to include a history array. Each time a calculation is made, store the operation and result in this array.

```
let calculator = {
  history:[],
  num1 : 20,
  num2 : 10,
  add:function(){
    const result = this.num1 + this.num2;
    this.history.push(result);
    return result;
  },
  sub:function(){
    const result = this.num1 - this.num2;
    this.history.push(result);
    return result;
  },
  multiply:function(){
    const result = this.num1 * this.num2;
    this.history.push(result);
    return result;
  },
  divide:function(){
    const result = this.num1 / this.num2;
    this.history.push(result);
    return result;
  }
}

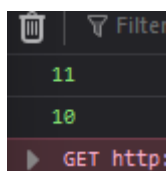
console.log(calculator.add());
console.log(calculator.sub());
console.log(calculator.multiply());
console.log(calculator.divide());
console.log(calculator.history);
```



The screenshot shows a console window with a 'Filter Output' header. Below it, the following values are displayed on separate lines: 30, 10, 200, and 2. At the bottom, there is a log entry for an array: 'Array(4) [30, 10, 200, 2]'.

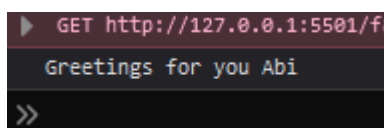
Task 5: Create an object representing a person. Add methods to increase and decrease their age property. Ensure the age doesn't go below 0.

```
1  let age=10;
2  function increase(){
3      if(age>0){
4          return function(){
5              age++;
6              console.log(age);
7          }
8      }
9  }
10 function decrease(){
11     if(age>0){
12         return function(){
13             age--;
14             console.log(age);
15         }
16     }
17 }
18 let increment=increase();
19 increment();
20 let decrement=decrease();
21 decrement();
```



Task 6: For the person object, add a method named greet that uses the this keyword to greet with the person's name.

```
let person={
  name:prompt("Enter the name:"),
  greet:function(){
    return this.name;
  }
}
console.log("Greetings for you "+person.greet());
```



Task 7: Design a circle object with properties radius and a method to calculate its area using this.radius.

```
let circle={
  radius:prompt("Enter the radius"),
  area:function(){
    return Math.PI*this.radius*this.radius;
  }
}
console.log("Arrea of circle "+circle.area());
```

```
GET http://127.0.0.1:5501/ravicon.ico
Arrea of circle 78.53981633974483
```

Task 8: Extend the circle object with methods to calculate its diameter and circumference

```
let circle={
  radius:prompt("Enter the radius"),
  area:function(){
    return Math.PI*this.radius*this.radius;
  },
  diameter:function(){
    return 2*this.radius;
  },
  circumference:function(){
    return 2*Math.PI*this.radius;
  }
}
console.log("Area of circle "+circle.area());
console.log("Diameter of circle "+circle.diameter());
console.log("Circumference of circle "+circle.circumference());
```

```
GET http://127.0.0.1:5501/ravicon.ico
Area of circle 78.53981633974483
Diameter of circle 10
Circumference of circle 31.41592653589793
```

Task 9: Create an object account with properties: name, balance and methods: deposit, withdraw. Use the this keyword appropriately

```
let account={
  name:"Ichigo kurosaki",
  balance:20000,
  amount:Number(prompt("Enter the amount:")),
  deposit:function(){
    return this.balance+this.amount;
  },
  withdraw:function(){
    return this.balance-this.amount;
  }
}
console.log(account.deposit());
console.log(account.withdraw());
```

```
▶ GET http://12
24000
16000
>> \
```

Task 10: For the account object, ensure that the balance can't go negative using the this keyword.

```
let account={
  name:"Ichigo kurosaki",
  balance:Number(prompt("Enter the balance:")),
  amount:Number(prompt("Enter the amount:")),
  deposit:function(){
    if(this.balance>0){
      return this.balance+this.amount;
    }
  },
  withdraw:function(){
    if(this.balance>0){
      return this.balance-this.amount;
    }
  }
}
console.log(account.deposit());
console.log(account.withdraw());
```

```
21000
```

undefined

undefined

Task 11: Initialize an array of your favorite fruits. Add “Mango” to the end of the array using push()

```
let fruits=["Apple","Orange","Papaya"];
fruits.push("Mango");
console.log(fruits);
```

```
► Array(4) [ "Apple", "Orange", "Papaya", "Mango" ]
```

Task 12: Remove the last fruit from the array using pop().

```
let fruits=["Apple","Orange","Papaya"];
fruits.pop("Apple");
console.log(fruits);
```

```
► Array [ "Apple", "Orange" ]
```

Task 13: Add “Strawberry” to the beginning of the fruits array using unshift().

```
let fruits=["Apple","Orange","Papaya"];
fruits.unshift("Strwaberry");
console.log(fruits);
```

```
► Array(4) [ "Strwaberry", "Apple", "Orange", "Papaya" ]
```

Task 14: Remove the first fruit from the array using shift()

```
let fruits=["Apple","Orange","Papaya"];
fruits.shift("Apple");
console.log(fruits);
```

```
► Array [ "Orange", "Papaya" ]
```

Task 15: Create a function that accepts an array of numbers and uses push() to add the number 7 to it.

```
let n=5;
let arr=Array();
for(i=0;i<n;i++){
    arr[i]=prompt("Enter array numbers:");
}
addArr();
function addArr(){
    arr.push("7");
    return arr;
}
console.log(arr);
```

```
► Array(6) [ "1", "2", "3", "7", "4", "7" ]
```

Task 16: Write a function that accepts a string. Convert the string to an array of words and remove the last word using pop().

```
let arr=new Array();
function remStr(){
    let str=prompt("Enter the String");
    arr=str.split(" ");
}
remStr();
console.log(arr);
arr.pop();
console.log(arr);
```

```
► Array(6) [ "Hello", "Guys", "welcome", "to", "JS", "Lab" ]
► Array(5) [ "Hello", "Guys", "welcome", "to", "JS" ]
```


Task 17: Create an array of days of the week. Using `shift()` and `unshift()`, move Sunday to the end of the array.

```
let arr=["Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday"]
function arrx(){
  console.log(arr);
  arr.shift("Sunday");
  console.log(arr);
  arr=[];
  arr.unshift("Monday","Tuesday","Wednesday","Thursday","Friday","Saturday")
}
arrx();
console.log(arr);
```

```
Filter Output Errors Warnings Logs Info
> Array(7) [ "Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday" ]
> Array(6) [ "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday" ]
> Array(7) [ "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday" ]
```

Task 18: Given an array of letters, write a function that adds a letter 'Z' at the beginning and end of the array.

```
let arr=["A","B","C","D","E"];
function addLetter(){
  arr.unshift("Z");
  arr.push("Z");
  return arr;
}
addLetter();
console.log(arr);
```

```
Array(7) [ "Z", "A", "B", "C", "D", "E", "Z" ]
```

Task 19: Initialize an array with five movie names. Ask the user for another movie name and add it to the end of the array.

```
let arr=["After","John Wick","End Game","Interstellar","Oppenheimer"];
let str=prompt("Enter the movie name:");
arr.push(str);
console.log(arr);
```

```
y(6) [ "After", "John Wick", "End Game", "Interstellar", "Oppenheimer", "War" ]
```

Task 20: Remove the third item from the movie array

```
let arr=["After","John Wick","End Game","Interstellar","Oppenheimer"];
let str=prompt("Enter the movie name:");
arr.push(str);
console.log(arr);
let num=arr.splice(2,1);
console.log(arr);
```

```
GET http://127.0.0.1:5501/favicon.ico
▶ Array(6) [ "After", "John Wick", "End Game", "Interstellar", "Oppenheimer", "War" ]
▶ Array(5) [ "After", "John Wick", "Interstellar", "Oppenheimer", "War" ]
```

Task 21: Create an array of numbers. Use map() to create a new array with each number squared.

```
let arr=[1,2,3,4,5,6];
let toSquare=ar=>ar*ar;
let newarr=arr.map(toSquare);
console.log(arr);
console.log(newarr);
```

```
▶ Array(6) [ 1, 2, 3, 4, 5, 6 ]
▶ Array(6) [ 1, 4, 9, 16, 25, 36 ]
```

Task 22: Use filter() on an array of numbers to get a new array with only even numbers.

```
let arr=[2,4,5,6,7,10,11];
let even=arr.filter(n=>n%2==0);
console.log(arr);
console.log(even);
```

```
▶ Array(7) [ 2, 4, 5, 6, 7, 10, 11 ]
▶ Array(4) [ 2, 4, 6, 10 ]
```

Task 23: Create an array of product prices. Use reduce() to find the total price.

```
let arr=[20,15,30,50,10];
let sum=arr.reduce((accumulator,currentValue)=>accumulator+currentValue,0);
console.log(arr);
console.log(sum);
```

```
Filter Output
▶ Array(5) [ 20, 15, 30, 50, 10 ]
125
GET http://127.0.0.1:5501/favicon.ico
```

Task 24: For an array of strings, use `map()` to create a new array that contains the length of each string.

```
let arr=["Hello","World","JS","lab"];
let toLength=ar=>ar.length;
let val=arr.map(toLength);
console.log(arr);
console.log(val);
```

```
▶ Array(4) [ "Hello", "World", "JS", "lab" ]
▶ Array(4) [ 5, 5, 2, 3 ]
```

Task 25: Use `splice()` to remove the third item of an array and replace it with the string "replaced!"

```
let arr=["Hello","World","JS","lab"];
console.log(arr);
arr.splice(2,1,"replaced!");
console.log(arr);
```

```
▶ Array(4) [ "Hello", "World", "JS", "lab" ]
▶ Array(4) [ "Hello", "World", "replaced!", "lab" ]
```

Task 26: For an array of integers, use `slice()` to get a new array containing the 2nd, 3rd, and 4th elements.

```
Filter Output
▶ Array(7) [ 1, 2, 3, 4, 5, 6, 7 ]
▶ Array(3) [ 2, 3, 4 ]
```

```
let arr=[1,2,3,4,5,6,7];
console.log(arr);
const num1=arr.slice(1,4);
console.log(num1);
```

Task 27: Create an array of names. Use `filter()` to produce a new array that contains names starting with the letter 'A'

```
let arr=["Alex","Wick","Alice","Bhat","Zeck","John","Andrew"];
let newarr=arr.filter(n=>n.startsWith("A"));
console.log(arr);
console.log(newarr);
```

```
Array(7) [ "Alex", "Wick", "Alice", "Bhat", "Zeck", "John", "Andrew" ]
Array(3) [ "Alex", "Alice", "Andrew" ]
```

Task 28: For an array of scores (out of 100), use `map()` to grade each score (e.g., 90-100 = 'A', 80-89 = 'B').

```
let score=[100,80,77,64,99];
let grade=function(score){
  if(score>=90){
    return 'A';
  }else if(score<90&&score>=80){
    return 'B';
  }
  else if(score<80&&score>=70){
    return 'C';
  }else{
    return 'D';
  }
}
let val=score.map(grade);
console.log(score);
console.log(val);
```

```
► Array(5) [ 100, 80, 77, 64, 99 ]
► Array(5) [ "A", "B", "C", "D", "A" ]
```

Task 29: Given an array of ages, use `reduce()` to find the average age.

```
let age=[40,30,32,42,26,14];
let avg=age.reduce((accumulator,currentValue)=>accumulator+currentValue,0);
console.log(age);
console.log(avg/6);
```

```
► Array(6) [ 40, 30, 32, 42, 26, 14 ]
30.666666666666668
```

Task 30: Use `splice()` to insert two new fruits after the second fruit in an array of fruits

```
let fruits=["Apple","Mango","Papaya"];
console.log(fruits);
fruits.splice(1,0,"Kiwi","Lime");
console.log(fruits);
```

```
Array(3) [ "Apple", "Mango", "Papaya" ]
```

```
Array(5) [ "Apple", "Kiwi", "Lime", "Mango", "Papaya" ]
```