sAssignments

1. Accept a char input from the user and display it on the console.

Code of the program & screenshot of the output.

```
let a = prompt("enter a number");
console.log(a);
```

```
entered character is d
>
```

2. Accept two inputs from the user and output their sum.

Variable	**Data Type**
Number 1	Integer
Number 2	Float
Sum	Float

Code of the program & screenshot of the output.

```
<label for="">Number 1<input id="num1" type="text" /></label>
<label for=""> Number 2<input id="num2" type="text" /></label>
```

```
<button onclick="addNum()">Add</button>
<h3 id="output"></h3>

<script>
  function addNum() {
    let num1 = document.getElementById("num1").value;
    let num2 = document.getElementById("num2").value;
    let output = document.getElementById("output");
    let sum = Number(num1) + Number(num2);

    output.innerText = "sum = " + sum;
  }
```

Number 1 5 Number 2 10 Add

sum = 15

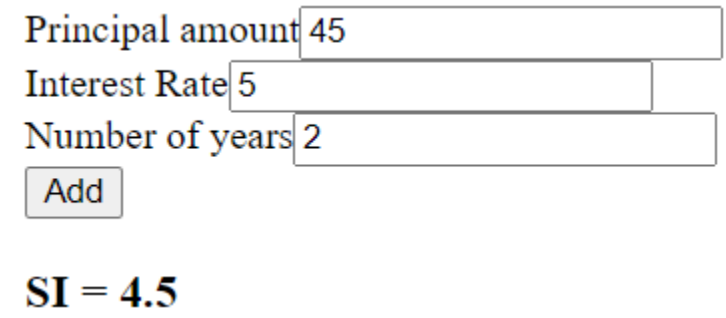
3. Write a program to find the simple interest.

   a. Program should accept 3 inputs from the user and calculate simple interest for the given inputs. Formula: SI=(P*R*n)/100)

Variable	**Data Type**
Principal amount (P)	Integer
Interest rate (R)	Float
Number of years (n)	Float
Simple Interest (SI)	Float

Code of the program & screenshot of the output.

```
 <label for="">Principal amount<input id="principal" type="text"
   /></label><br>
    <label for="">Interest Rate<input id="interest" type="text"
   /></label><br>
    <label for="">Number of years<input id="years" type="text"
   /></label><br>
    <button onclick="findSi()">Add</button>
    <h3 id="output"></h3>

function findSi() {
  let p = document.getElementById("principal").value;
  let r = document.getElementById("interest").value;
  let n = document.getElementById("years").value;
  let output = document.getElementById("output");

  let si = Number(p) * Number(r) * Number(n) / 100;

  output.innerText = "SI = "+ si;
}
```



4. Write a program to check whether a student has passed or failed in a subject after he or she enters their mark (pass mark for a subject is 50 out of 100).

   a. Program should accept an input from the user and output a message as "Passed" or "Failed"

Variable	Data type
mark	float

Code of the program & screenshot of the output.

```
function checkPass(mark) {
  if (mark >= 50) {
    console.log("pass");
  } else {
    console.log("fail");
  }
}

checkPass(55);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
pass
```

5. Write a program to show the grade obtained by a student after he/she enters their total mark percentage.

a. Program should accept an input from the user and display their grade as follows

Mark	**Grade**
> 90	A
80-89	B
70-79	C
60-69	D
50-59	E
< 50	Failed

Variable	**Data type**
Total mark	float

Code of the program & screenshot of the output.

```
function checkGrade(mark) {
  if (mark >= 90) {
    console.log("A");
  } else if (mark >= 80 && mark < 90) {
    console.log("B");
  } else if (mark >= 70 && mark < 80) {
    console.log("C");
  } else if (mark >= 60 && mark < 70) {
    console.log("D");
  } else if (mark >= 50 && mark < 60) {
    console.log("E");
  } else {
    console.log("failed");
  }
}

checkGrade(80);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
E
PS C:\Users\ashra\Desktop\week3> node .\index.js
B
```

6. Using the 'switch case' write a program to accept an input number from the user and output the day as follows.

Input	**Output**
1	Sunday
2	Monday
3	Tuesday

4	Wednesday
5	Thursday
6	Friday
7	Saturday
Any other input	Invalid Entry

Code of the program & screenshot of the output.

```
function checkDay(day) {
  switch (day) {
    case 1:
      console.log("Sunday");
      break;
    case 2:
      console.log("Monday");
      break;
    case 3:
      console.log("Tuesday");
      break;
    case 4:
      console.log("Wednesday");
      break;
    case 5:
      console.log("Thursday");
      break;
    case 6:
      console.log("Friday");
      break;
    case 7:
      console.log("Saturday");
      break;
    default:
      console.log("Invalid Entry");
```

```
  }
}

checkDay(8);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
Saturday
PS C:\Users\ashra\Desktop\week3> node .\index.js
Invalid Entry
```

7. Write a program to print the multiplication table of given numbers.

   a. Accept an input from the user and display its multiplication table

      Eg:

      Output: Enter a number

      Input: 5

      Output:

      1 x 5 = 5

      2 x 5 = 10

      3 x 5 = 15

      4 x 5 = 20

      5 x 5 = 25

      6 x 5 = 30

      7 x 5 = 35

      8 x 5 = 40

      9 x 5 = 45

10 x 5 = 50

Code of the program & screenshot of the output.

```
function multiplication(num) {
  for (let i = 1; i <= 10; i++) {
    console.log(i + " * " + num + " = " + i * 5);
  }
}
multiplication(5);
```

```
1 * 5 = 5
2 * 5 = 10
3 * 5 = 15
4 * 5 = 20
5 * 5 = 25
6 * 5 = 30
7 * 5 = 35
8 * 5 = 40
9 * 5 = 45
10 * 5 = 50
```

8. Write a program to find the sum of all the odd numbers for a given limit

   a. Program should accept an input as limit from the user and display the sum of all the odd numbers within that limit

      For example if the input limit is 10 then the result is 1+3+5+7+9 = 25

      Output: Enter a limit

      Input: 10

      Output: Sum of odd numbers = 25

Code of the program & screenshot of the output.

```
function sumOdd(n) {
  let sum = 0;
  for (let i = 1; i <= n; i++) {
    if (i % 2 !== 0) {
      sum += i;
    }
  }
  console.log(sum);
}

sumOdd(10);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
25
```

9. Write a program to print the following pattern (**hint**: use nested loop)

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Code of the program & screenshot of the output.

```
for (let i = 1; i <= 5; i++) {
  let output = "";
  for (j = 1; j <= i; j++) {
    output += j + " ";
  }
  console.log(output);
}
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

10. Write a program to interchange the values of two arrays.

    a. Program should accept an array from the user, swap the values of two arrays and display it on the console

    Eg: **Output**: Enter the size of arrays

    Input: 5

    Output: Enter the values of Array 1

    Input: 10, 20, 30, 40, 50

    Output: Enter the values of Array 2

    Input: 15, 25, 35, 45, 55

    Output: Arrays after swapping:

    Array1: 15, 25, 35, 45, 55

    Array2: 10, 20, 30, 40, 50

Code of the program & screenshot of the output.

```
let arr1 = [];
let arr2 = [];

let size = prompt("enter the size");

for (let i = 0; i < size; i++) {
```

```
  arr1[i] = prompt("enter the " + i + " element of array1");
}
for (let i = 0; i < size; i++) {
  arr2[i] = prompt("enter the " + i + " element of array2");
}

console.log("original array 1 = " + arr1);
console.log("original array 2 = " + arr2);

let temp;
for (let i = 0; i < size; i++) {
  temp = arr1[i];
  arr1[i] = arr2[i];
  arr2[i] = temp;
}

console.log("swapped array 1 = " + arr1);
console.log("swapped array 2 = " + arr2);
```

```
array 1 = 1,2,3,4,5
array 2 = 9,8,7,6,5
array 1 = 9,8,7,6,5
array 2 = 1,2,3,4,5
```

11. Write a program to find the number of even numbers in an array

    a. Program should accept an array and display the number of even numbers contained in that array

       Eg: **Output**: Enter the size of an array

       Input: 5

       Output: Enter the values of array

       Input: 11, 20, 34, 50, 33

Output: Number of even numbers in the given array is 3

Code of the program & screenshot of the output.

```
let arr = [];

let size = prompt("enter size");

for (let i = 0; i < size; i++) {
  arr[i] = prompt("enter the " + i + " element of array1");
}
console.log("original array"+arr);

let count = 0;
for(i=0;i<size;i++){
    if(arr[i] %2 === 0){
        count++;
    }
}

console.log("Number of even numbers in the given array is
   "+count);
```

```
original array1,2,3,4,5,6
Number of even numbers in the given array is 3
```

12. Write a program to sort an array in descending order

    a. Program should accept and array, sort the array values in descending order and display it

       Eg: **Output**: Enter the size of an array

       Input: 5

       Output: Enter the values of array

Input: 20, 10, 50, 30, 40

Output: Sorted array:

50, 40, 30, 20, 10

Code of the program & screenshot of the output.

```
let arr = [];

let size = prompt("enter size");

for (let i = 0; i < size; i++) {
  arr[i] = prompt("enter the " + i + " element of array1");
}
console.log("original array " + arr);

arr.sort((a, b) => b - a);

console.log("sorted array " + arr);
```

```
original array 3,5,2,4,1
sorted array 5,4,3,2,1
```

13. Write a program to identify whether a string is a palindrome or not

    a. A string is a palindrome if it reads the same backward or forward eg: MALAYALAM

       Program should accept a string and display whether the string is a palindrome or not

       Eg: **Output**: Enter a string

       Input: MALAYALAM

       Output: Entered string is a palindrome

Eg 2: **Output**: Enter a string

Input: HELLO

Output: Entered string is not a palindrome

Code of the program & screenshot of the output.

```
let str = prompt("enter the string");

let j = str.length - 1;

let flag = 0;
for (i = 0; i < j; i++) {
  if (str[i] !== str[j]) {
    flag = 1;
    break;
  }
  j--;
}
if (flag === 1) {
  console.log("entered string is not palindrome");
} else {
  console.log("Entered String is palindrome");
}
```

```
entered string is malayalam
Entered String is palindrome
```

14. Write a program to add to two dimensional arrays

    a. Program should accept two 2D arrays and display its sum

    Eg: **Output**: Enter the size of arrays

    Input: 3

    Output: Enter the values of array 1

Input:

1 2 3

4 5 6

7 8 9

Output: Enter the values of array 2

Input:

10 20 30

40 50 60

70 80 90

Output: Sum of 2 arrays is:

11 22 33

44 55 66

77 88 99

Code of the program & screenshot of the output.

```
let arr1 = [];
let arr2 = [];
let arr3 = [];

let size = Number(prompt("enter the size "));

for (let i = 0; i < size; i++) {
  arr1[i] = [];
  for (let j = 0; j < size; j++) {
    arr1[i][j] = Number(prompt("enter arr1 element "));
  }
}
```

```
for (let i = 0; i < size; i++) {
  arr2[i] = [];
  for (let j = 0; j < size; j++) {
    arr2[i][j] = Number(prompt("enter arr2 element "));
  }
}

for (let i = 0; i < size; i++) {
  arr3[i] = [];
  for (let j = 0; j < size; j++) {
    arr3[i][j] = arr1[i][j] + arr2[i][j];
  }
}
console.log(arr1);
console.log(arr2);
console.log(arr3);
```

```
▼ (3) [Array(3), Array(3), Array(3)] i
  ▶ 0: (3) [1, 2, 3]
  ▶ 1: (3) [4, 5, 6]
  ▶ 2: (3) [7, 8, 9]
    length: 3
  ▶ [[Prototype]]: Array(0)
▼ (3) [Array(3), Array(3), Array(3)] i
  ▶ 0: (3) [9, 8, 7]
  ▶ 1: (3) [6, 5, 4]
  ▶ 2: (3) [3, 2, 1]
    length: 3
  ▶ [[Prototype]]: Array(0)
▼ (3) [Array(3), Array(3), Array(3)] i
  ▶ 0: (3) [10, 10, 10]
  ▶ 1: (3) [10, 10, 10]
  ▶ 2: (3) [10, 10, 10]
    length: 3
  ▶ [[Prototype]]: Array(0)
```

15. Write a program to accept an array and display it on the console using functions

a. Program should contain 3 functions including main() function

main()

1. Declare an array
2. Call function getArray()
3. Call function displayArray()

getArray()

1. Get values to the array

displayArray()

1. Display the array values

Code of the program & screenshot of the output.

```
function main() {
  let arr = [];
  let size = prompt("enter the size");
  const a = getArr(arr, size);
  displayArr(arr);
}
function displayArr(arr) {
  console.log("input array ",arr);
}
function getArr(arr, size) {
  for (let i = 0; i < size; i++) {
    arr[i] = Number(prompt("enter element " + i));
  }
}

main();
```

```
▶ (5) [1, 2, 3, 4, 5]
```

16. Write a program to check whether a given number is prime or not

    a. Program should accept an input from the user and display whether the number is prime or not

       Eg: **Output**: Enter a number

       Input: 7

       Output: Entered number is a Prime number

Code of the program & screenshot of the output.

```
function checkPrime(num) {
  let flag = 0;
  for (let i = 2; i < num; i++) {
    if (num % i == 0) {
      flag = 1;
      break;
    }
  }

  if (flag === 0) {
    console.log(num, " is prime");
  } else {
    console.log(num, " is not prime");
  }
}
checkPrime(5);
```

```
4  is not prime
PS C:\Users\ashra\Desktop\week3> node .\index.js
5  is prime
PS C:\Users\ashra\Desktop\week3>
```

17. Write a menu driven program to do the basic mathematical operations such as addition, subtraction, multiplication and division (**hint**: use if else ladder or switch)

a. Program should have 4 functions named addition(), subtraction(), multiplication() and division()
b. Should create a class object and call the appropriate function as user prefers in the main function

Code of the program & screenshot of the output.

```
class Operation {
  addition(a, b) {
    console.log(a + b);
  }

  subtraction(a, b) {
    console.log(a - b);
  }

  multiplication(a, b) {
    console.log(a * b);
  }

  division(a, b) {
    console.log(a / b);
  }
}

console.log(
  "option\n 1. Addition\n 2.Subtraction\n 3.Multiplication\n
   4.Division"
);

let val = Number(prompt("choose an option "));
let num1 = Number(prompt("enter number 1 "));
let num2 = Number(prompt("enter number 2 "));
```

```
const o = new Operation();

switch (val) {
  case 1:
    o.addition(num1, num2);
    break;
  case 2:
    o.subtraction(num1, num2);
    break;
  case 3:
    o.multiplication(num1, num2);
    break;
  case 4:
    o.division(num1, num2);
    break;
  default:
    console.log("invalid option");
}
```

```
option
 1. Addition
 2.Subtraction
 3.Multiplication
 4.Division
coose an option 1
enter number 1 8
enter number 2 5
13
```

18. Grades are computed using a weighted average. Suppose that the written test counts 70%, lab exams 20% and assignments 10%.

If Arun has a score of

Written test = 81

Lab exams = 68

Assignments = 92

Arun's overall grade = (81x70)/100 + (68x20)/100 + (92x10)/100 = 79.5

Write a program to find the grade of a student during his academic year.

a. Program should accept the scores for written test, lab exams and assignments
b. Output the grade of a student (using weighted average)

Eg:

Enter the marks scored by the students

Written test = 55

Lab exams = 73

Assignments = 87

Grade of the student is 61.8

Code of the program & screenshot of the output.

```
let written = Number(prompt("written test = "));
let lab = Number(prompt("lab exams = "));
let assignment = Number(prompt("assignment "));

let grade = (written * 70) / 100 + (lab * 20) / 100 + (assignment
   * 10) / 100;

console.log("grade of the students " + grade);
```

```
written test = 81
lab exams = 68
assignment 92
grade of the students 79.5
```

19. Income tax is calculated as per the following table

Annual Income	**Tax percentage**
Up to 2.5 Lakhs	No Tax
Above 2.5 Lakhs to 5 Lakhs	5%
Above 5 Lakhs to 10 Lakhs	20%
Above 10 Lakhs to 50 Lakhs	30%

Write a program to find out the income tax amount of a person.

a. Program should accept annual income of a person
   Output the amount of tax he has to pay

   Eg 1:
   Enter the annual income
   495000
   Income tax amount = 24750.00

   Eg 2:
   Enter the annual income
   500000
   Income tax amount = 25000.00

Code of the program & screenshot of the output.

```
let income = Number(prompt("enter annual income = "));
let tax;
if (income > 1000000) {
  tax = (income * 30) / 100;
  console.log("income tax amount = " + tax);
```

```
} else if (income > 500000 && income <= 1000000) {
  tax = (income * 20) / 100;
  console.log("income tax amount = " + tax);
} else if (income > 250000 && income <= 500000) {
  tax = (income * 5) / 100;
  console.log("income tax amount = " + tax);
} else {
  console.log("No tax ");
}
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
enter annual income = 500000
income tax amount = 25000
PS C:\Users\ashra\Desktop\week3> node .\index.js
enter annual income = 495000
income tax amount = 24750
PS C:\Users\ashra\Desktop\week3> node .\index.js
enter annual income = 4555
No tax
```

20. Write a program to print the following pattern using for loop

1

2 3

4 5 6

7 8 9 10

Code of the program & screenshot of the output.

```
let num = 1;
for (let i = 1; i < 5; i++) {
  let out = "";
  for (let j = 1; j <= i; j++) {
    out += num + " ";
```

```
    num++;
  }
  console.log(out);
}
```

```
1
2 3
4 5 6
7 8 9 10
```

21. Write a program to multiply the adjacent values of an array and store it in an another array

a. Program should accept an array
b. Multiply the adjacent values
c. Store the result into another array

Eg:

Enter the array limit

5

Enter the values of array

1 2 3 4 5

Output

2 6 12 20

Code of the program & screenshot of the output.

```
let arr = [2,4,6,8,10];
let arr2 = [];
for (let i = 0; i < arr.length-1; i++) {
    let multiple = arr[i] * arr[i + 1];
    arr2.push(multiple);
```

```
}

console.log(arr2);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
[ 8, 24, 48, 80 ]
```

22. Write a program to add the values of two 2D arrays

    a. Program should contains 3 functions including the main function

    main()

    1. Call function getArray()
    2. Call function addArray()
    3. Call function displayArray()

    getArray()

    1. Get values to the array

    getArray()

    1. Add array 1 and array 2

    displayArray()

    1. Display the array values

    Eg:

    Enter the size of array

    2

    Enter the values of array 1

1 2

3 4

Enter the values of array 2

5 6

7 8

Output:

Sum of array 1 and array 2:

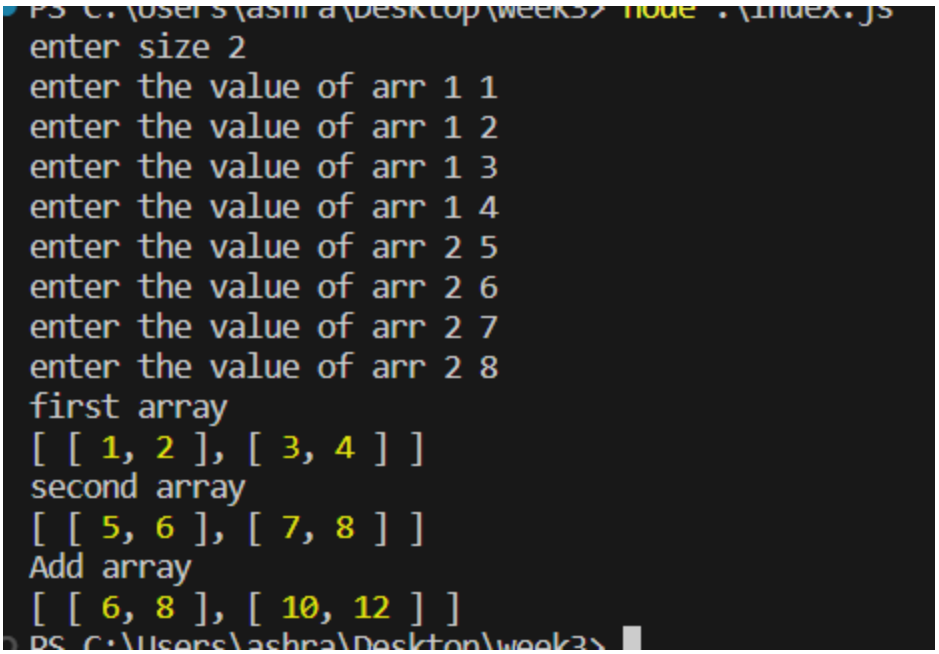
6 8

10 12

Code of the program & screenshot of the output

```
function main() {
  let arr1 = [];
  let arr2 = [];
  let arr3 = [];
  let size = Number(prompt("enter size "));

  getArr(arr1, arr2, size);
  addArr(arr1, arr2, arr3, size);
  displayArr(arr1, arr2,arr3);
}
main();

function getArr(arr1, arr2, size) {
  for (let i = 0; i < size; i++) {
    arr1[i] = [];
    for (let j = 0; j < size; j++) {
      let val = Number(prompt("enter the value of arr 1 "));
      arr1[i].push(val);
    }
  }
```

```
  for (let i = 0; i < size; i++) {
    arr2[i] = [];
    for (let j = 0; j < size; j++) {
      let val = Number(prompt("enter the value of arr 2 "));
      arr2[i].push(val);
    }
  }
}

function addArr(arr1, arr2, arr3, size) {
  for (let i = 0; i < size; i++) {
    arr3[i] = [];
    for (let j = 0; j < size; j++) {
      let sum = arr1[i][j] + arr2[i][j];
      arr3[i].push(sum);
    }
  }
}

function displayArr(arr1, arr2,arr3) {
  console.log("first array");
  console.log(arr1);
  console.log("second array");
  console.log(arr2);
  console.log("Add array");
  console.log(arr3);
}
```



23. Write an object oriented program to store and display the values of a 2D array

a. Program should contains 3 functions including the main function

main()

1. Declare an array
2. Call function getArray()
3. Call function displayArray()

getArray()

1. Get values to the array

displayArray()

1. Display the array values

Eg:

Enter the size of array

3

Enter the array values

1 2 3

4 5 6

7 8 9

Array elements are:

1 2 3

4 5 6

7 8 9

Code of the program & screenshot of the output

```
class Operation {
  main() {
    let arr = [];
    let size = Number(prompt("enter size "));
    this.getArr(arr, size);
    this.dispArr(arr);
  }

  getArr(arr, size) {
    for (let i = 0; i < size; i++) {
      arr[i] = [];
      for (let j = 0; j < size; j++) {
        let val = Number(prompt("enter the value of arr 1 "));
        arr[i].push(val);
      }
    }
  }
```

```
  dispArr(arr) {
    console.log(arr);
  }
}

const o = new Operation();
o.main();
```

```
enter size 2
enter the value of arr 1 1
enter the value of arr 1 2
enter the value of arr 1 3
enter the value of arr 1 4
[ [ 1, 2 ], [ 3, 4 ] ]
PS C:\Users\ashra\Desktop\week3>
```

24. Write a menu driven program to calculate the area of a given object.

a. Program should contain two classes
   i. Class 1: MyClass
   ii. Class 2: Area
b. Class MyClass should inherit class Area and should contain the following functions
   i. main()
   ii. circle()
   iii. square()
   iv. rectangle()
   v. triangle()
c. Class Area should contain the following functions to calculate the area of different objects
   i. circle()
   ii. square()
   iii. rectangle()

iv. triangle()

```
Class MyClass extends Area{
        public static void main(string args[]){
        }
        circle() {
        }
        square() {
        }
        rectangle() {
        }
        triangle() {
        }
}
Class Area{
        circle(){
        }
        square(){
        }
        rectangle() {
```

```
        }

        triangle() {

        }

}
```

Eg 1:

Enter your choice

1. Circle
2. Square
3. Rectangle
4. Triangle

2

Enter the length

2

Output

Area of the square is: 4

Eg 2:

Enter your choice

1. Circle
2. Square

3. Rectangle
4. Triangle

1

Enter the radius

3

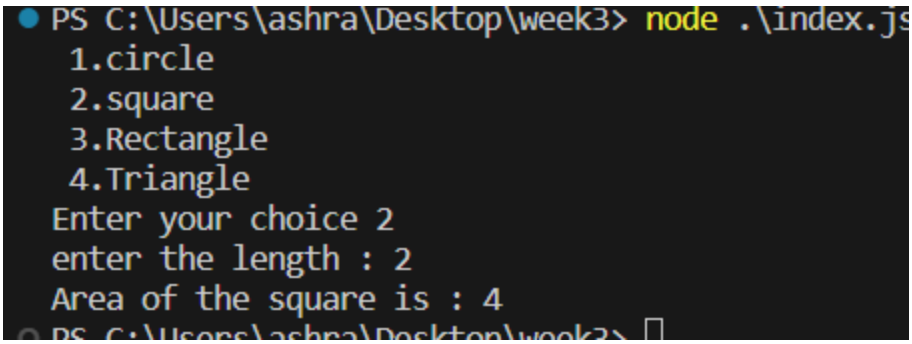
Output

Area of the circle is: 28.263

Code of the program & screenshot of the output

```
class Area {
  circle() {
    let r = Number(prompt("enter radius : "));
    let area = Math.PI * r * r;
    console.log("Area of the circle is : " + area);
  }

  square() {
    let l = Number(prompt("enter the length : "));
    let area = l * l;
    console.log("Area of the square is : " + area);
  }

  rectangle() {
    let l = Number(prompt("enter the length : "));
    let b = Number(prompt("enter the breadth : "));
    let area = l * b;
    console.log("Area of the square is : " + area);
  }

  triangle() {
    let h = Number(prompt("enter the height : "));
    let b = Number(prompt("enter the base : "));
```

```
    let area = (h * b) / 2;
    console.log("Area of the square is : " + area);
  }
}

class MyClass extends Area {
  main() {
    console.log(" 1.circle \n 2.square\n 3.Rectangle \n
   4.Triangle");
    let choice = Number(prompt("Enter your choice "));

    switch (choice) {
      case 1:
        this.circle();
        break;
      case 2:
        this.square();
        break;
      case 3:
        this.rectangle();
        break;
      case 4:
        this.triangle();
        break;
      default:
        console.log("choice invalid");
    }
  }
}

const obj = new MyClass();

obj.main();
```



25. Write a Javascript program to display the status (I.e. display book name, author name & reading status) of books. You are given an object library in the code's template. It contains a list of books with the above mentioned properties.Your task is to display the following:

- If the book is unread:
  You still need to read '<book_name>' by <author_name>.
- If the book is read:
  Already read '<book_name>' by <author_name>.

```
var library = [
  {
    title: 'Bill Gates',
    author: 'The Road Ahead',
    readingStatus: true
  },
  {
    title: 'Steve Jobs',
```

```
    author: 'Walter Isaacson',
    readingStatus: true
  },
  {
    title: 'Mockingjay: The Final Book of The Hunger Games',
    author: 'Suzanne Collins',
    readingStatus: false
  }
];
```

Code of the program & screenshot of the output.

```
var library = [
  {
    title: "Bill Gates",
    author: "The Road Ahead",
    readingStatus: true,
  },
  {
    title: "Steve Jobs",
    author: "Walter Isaacson",
    readingStatus: true,
  },
  {
    title: "Mockingjay: The Final Book of The Hunger Games",
    author: "Suzanne Collins",
    readingStatus: false,
  },
];

for (let i = 0; i < library.length; i++) {
```

```
  if (library[i].readingStatus) {
    console.log(
      `You still need to read ${library[i].title} by
   ${library[i].author}`
    );
  } else {
    console.log(`Already read ${library[i].title} by
   ${library[i].author}`);
  }
}
```

```
You still need to read Bill Gates by The Road Ahead
You still need to read Steve Jobs by Walter Isaacson
Already read Mockingjay: The Final Book of The Hunger Games by Suzanne Collins
```

26. Given a variable named my_string, *try* reversing the string using my_string.split().reverse().join() and then print the reversed string to the console. If the *try* clause has an error, print the error message to the console. Finally, print the *typeof* of the my_string variable to the console.

Output format:

The statement to print in the *try*block is:

Reversed string is : ${my_string}

The statement to print in the *catch*block is:

Error : ${err.message}

The statement to print in the *finally* block is:

Type of my_string is : ${typeof my_string}

Eg:

a) Sample Input 0

"1234"

Sample Output 0

Reversed string is : 4321

Type of my_string is : string

b) Sample Input 1

Number(1234)

Sample Output 1

Error : my_string.split is not a function

Type of my_string is : number

Code of the program & screenshot of the output.

```
function myString(str) {
  try {
    let newStr = str.split("").reverse().join("");
    console.log("Reversed String ",newStr);
  } catch (error) {
    console.log(error.message);
  } finally {
    let type = typeof str;
    console.log("Type of string ",type);
  }
}

myString("hello");
```

```
Reversed String :  olleh
Type of string :  string
```

27. Given a variable named my_height, you must throw errors under the following conditions:

- notANumberError- When my_heightis NaN
- HugeHeightError – When my_heightis greater than
- TinyHeight Error - When my_heightis less than

Eg:

a) Sample Input 0

seven

Sample Output 0

notANumberError

b) Sample Input 1

77

Sample Output 1

hugeHeightError

c) Sample Input 2

0

Sample Output 2

tinyHeightError

d) Sample Input 3

8

Sample Output 3

8

Code of the program & screenshot of the output.

```
function height(my_height) {
  try {
    if (isNaN(my_height)) {
      throw new Error("notANumberError");
    } else if (my_height > 9) {
```

```
      throw new Error("HugeHeightError");
    } else if (my_height < 4) {
      throw new Error("TinyHeightError");
    }else{
        console.log(my_height);
    }
  } catch (err) {
    console.log(err);
  }
}

height(8);
```

```
Error: HugeHeightError
    at height (C:\Users\ashra\Desktop\week3\index.js:11:13)
    at Object.<anonymous> (C:\Users\ashra\Desktop\week3\index.js:22:1)
    at Module._compile (node:internal/modules/cjs/loader:1155:14)
    at Object.Module._extensions..js (node:internal/modules/cjs/loader:1209:10)
    at Module.load (node:internal/modules/cjs/loader:1033:32)
    at Function.Module._load (node:internal/modules/cjs/loader:868:12)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12
    at node:internal/main/run_main_module:22:47
PS C:\Users\ashra\Desktop\week3> node .\index.js
8
```

28. Create a constructor function that satisfies the following conditions:

    a. The name of the constructor function should be *Car*.

    b. It should take three parameters: *name, mileage* and *max_speed*.

    c. Store these parameter values in their respective *this*keywords: *this.name, this.mileage* and *this.max_speed*.

Code of the program & screenshot of the output.

```
function Car(name, mileage, max_speed) {
  this.name = name;
  this.mileage = mileage;
  this.max_speed = max_speed;
```

```
}

const i10 = new Car("i10", 10, 200);

console.log(i10.name);
console.log(i10.mileage);
console.log(i10.max_speed);
```

```
PS C:\Users\ashra\Desktop\week3> node .\index.js
i10
10
200
```

29. Write a myFilter function that takes 2 parameters: myArray and callback. Here, myArray is an array of numbers and callback is a function that takes the elements of myArray as its parameter and returns a boolean true if the sum of the number is even or false if the sum of the number is odd.

The myFilter function should return the sum of the array.

a) Sample Input

12345

b) Sample Output

15

Code of the program & screenshot of the output.

```
let myArray = [1, 2, 3, 4, 5, 1];

function checkPositive(arr) {
  let sum = arr.reduce((acc, curr) => acc + curr);
  if (sum % 2 === 0) {
    return [sum, true];
  }
  return [sum, false];
```

```
}

function myFilter(myArray, callback) {
  let res = callback(myArray);
  if (res[1]) {
    console.log("sum : ", res[0]);
    console.log("sum is even");
  } else {
    console.log("sum : ", res[0]);
    console.log("sum is odd");
  }
}

myFilter(myArray, checkPositive);
```

```
sum :  15
sum is odd
PS C:\Users\ashra\Desktop\week3> node .\index.js
sum :  16
sum is even
```