Hands – On Lab Workshop

3.

AREA OF TRIANGLE

Write a function that takes the base and height of a triangle and return its area.

Example:

Areaoftriangle (3, ⟶ 4) 6

Areaoftriangle (7, ⟶ 8) 28

Notes

- Area of triangle is (base * height)/2
- Don't forget to return the result

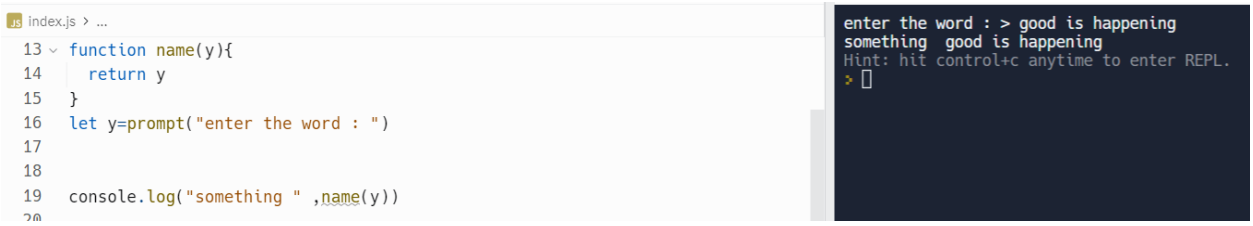
RETURN SOMETHING TO ME!

Write a function that returns the string "something" joined with a space " " and the given argument.

Examples

giveMeSomething("is better than nothing") ➞ "something is better than nothing"

giveMeSomething("Bob Jane") ➞ "something Bob Jane" giveMeSomething("something") ➞ "something something"



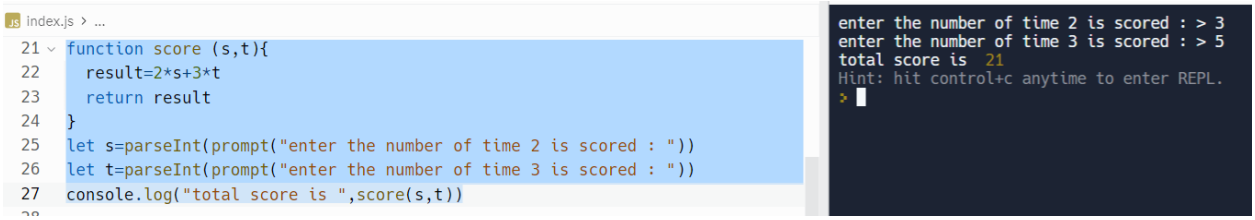
BASKETBALL POINTS

You are counting points for a basketball game, given the amount of 2 – pointer scored and 3 – pointer scored, find the final points for the team and return the value.

Example:

points ⟶ (3,5) 3*2 + 5*3 = 21

points ⟶ (1,1) 5



LESS THAN 100?

Given two numbers, return true if the sum of both numbers is less than 100.

Otherwise return false.

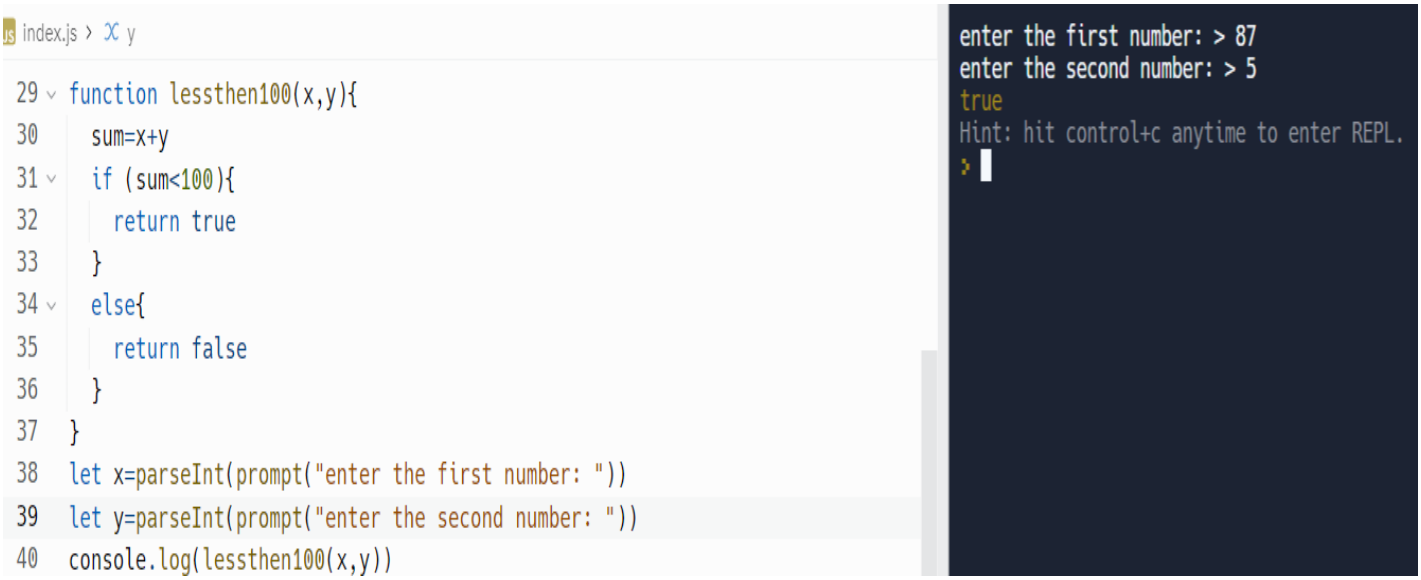
Examples

lessThan100(22, 15) ⟶ true

// 22 + 15 = 37 lessThan100(83,

34) ⟶ false // 83 + 34 = 117

lessThan100(3, 77) ⟶ true



ADD UPTO THE NUMBER FROM A SINGLE NUMBER

Create a function that takes a number as an argument. Add up all the numbers from 1 to the number you passed to the function. For example, if the input is 4 then your function should return 10 because 1+2+3+4 = 10

```
function add(y){
  s=0

  for(i=0;i<=y;i++){
  s+=i
  }
  return s
}
let y=parseInt(prompt("enter a number: "))
console.log(add(y))
```

```
enter a number: > 4
10
Hint: hit control+c ar
>
```

ANY PRIME NUMBER IN RANGE

Create a function that return true if there is at least one prime number in the given range(n1 to n2) inclusive, false otherwise.

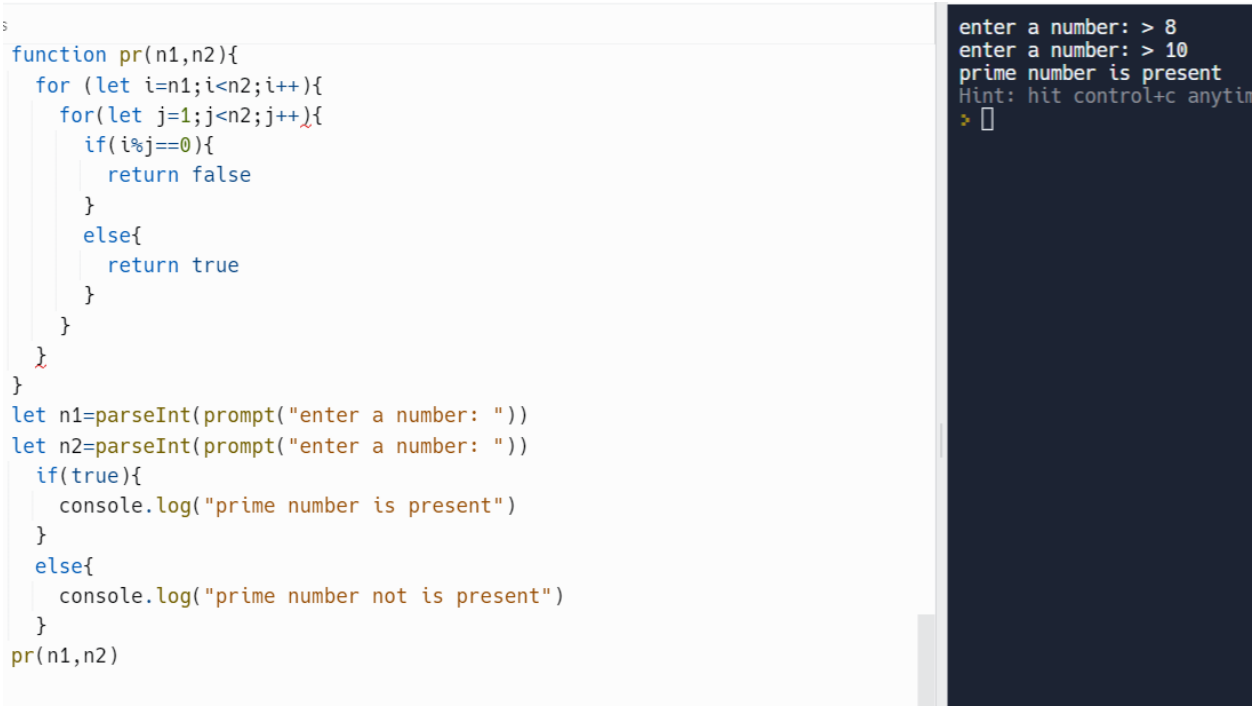
Example: primeInRange(10,15)

——▶ true

// prime number is range : 11, 13 primeInRange(3,1)

——▶ true

// prime number is range : 3, 5



```
function pr(n1,n2){
  for (let i=n1;i<n2;i++){
    for(let j=1;j<n2;j++){
      if(i%j==0){
        return false
      }
      else{
        return true
      }
    }
  }
}
let n1=parseInt(prompt("enter a number: "))
let n2=parseInt(prompt("enter a number: "))
  if(true){
    console.log("prime number is present")
  }
  else{
    console.log("prime number not is present")
  }
pr(n1,n2)
```

```
enter a number: > 8
enter a number: > 10
prime number is present
Hint: hit control+c anytim
>
```

ODDISH VS. EVENISH

Create a function that determines whether a number is Oddish or Evenish. A number is Oddish if the sum of all of its digits is odd, and a number is Evenish if the sum of all of its digits is even. If a number is Oddish, return "Oddish". Otherwise, return "Evenish".

For example, oddishOrEvenish(121) should return "Evenish", since 1 + 2 + 1 = 4. oddishOrEvenish(41) should return "Oddish", since 4 + 1 = 5.

Examples

oddishOrEvenish(43) ➞ "Oddish"

// 4 + 3 = 7 //

7 % 2 = 1

oddishOrEvenish(373) ➞ "Oddish"

// 3 + 7 + 3 = 13 //

13 % 2 = 1

oddishOrEvenish(4433) ➞ "Evenish"

// 4 + 4 + 3 + 3 = 14

// 14 % 2 = 0

```
function hello(x){
  sum=0
  while (x>0){
    d=x%10
    sum+=d
    x=parseInt(x/10)
  }
console.log(sum)
  if (sum%2==0){
    return 'evenish'
  }
  else{
    return 'oddish'
  }
}
let x=parseInt(prompt("enter a number: "))
console.log(hello(x))
```

```
enter a number: > 987
24
evenish
Hint: hit control+c any
>
```

LEFT SHIFT BY POWERS OF TWO

The left shift operation is similar to multiplication by powers oftwo.

Sample calculation using the left shift operator (<<):

10 << 3 = 10 * 2^3 = 10 * 8 = 80

-32 << 2 = -32 * 2^2 = -32 * 4 = -128

5 << 2 = 5 * 2^2 = 5 * 4 = 20

Write a function that mimics (withoutthe use of <<)the left shift operator and returns the resultfrom the two given integers.

Examples

shiftToLeft(5, 2) ➞ 20

shiftToLeft(10, 3) ➞ 80

shiftToLeft(-32, 2) ➞ -128

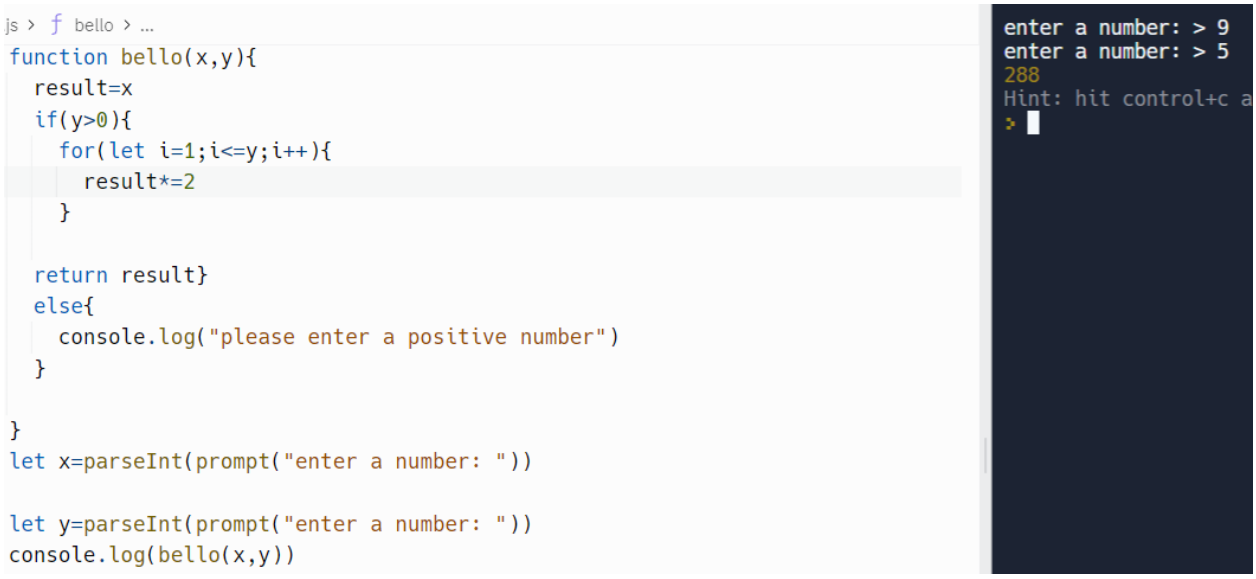
shiftToLeft(-6, 5) ➞ -192

shiftToLeft(12, 4) ➞ 192

shiftToLeft(46, 6) ➞ 2944 Notes

- There will be no negative values for the second parameter y.

- This challenge is more like recreating the left shift operation,thus,the use ofthe operator directly is prohibited.
- Alternatively, you can solve this challenge via recursion.



```
function bello(x,y){
  result=x
  if(y>0){
    for(let i=1;i<=y;i++){
      result*=2
    }

  return result}
  else{
    console.log("please enter a positive number")
  }

}
let x=parseInt(prompt("enter a number: "))

let y=parseInt(prompt("enter a number: "))
console.log(bello(x,y))
```

```
enter a number: > 9
enter a number: > 5
288
Hint: hit control+c a
>
```

CONVERT A NUMBER TO BASE-2

Create a function that returns a base-2 (binary) representation of a base-10 (decimal) string number. To convertis simple: ((2) means base-2 and (10) means base-10) 010101001(2) = 1 + 8 + 32 + 128.

Going from rightto left,the value ofthe most right bitis 1, now from that every bitto the left will be x2. The values of an 8 bit binary number are (256, 128, 64, 32, 16, 8, 4, 2, 1).

Examples

binary(1) ➞ "1"
// 1*1 = 1 binary(5)

➞ "101" // 1*1 + 1*4

= 5 binary(10) ➞

"1010"

// 1*2 + 1*8 = 10

Notes

- Numbers will always be below 1024 (notincluding 1024).

- The && operator could be useful.
- The strings will always go to the length at which the mostleft bit's value gets bigger than the number in decimal.
- If a binary conversion for 0 is attempted, return "0".

GUESSING GAME

Generate a random number (do research) and store it in a variable. Write a program to take input from the user and tell them whether their guessed number is correct, greater or lesser than the original number. (100 – number of guesses) is the score of user. The program is expected to terminate once the number is guessed. Number should be between 1 – 100.

Example:

Random number generated by computer: 54

User input: 34

// lesser than original number

User input: 67

// greater than original number

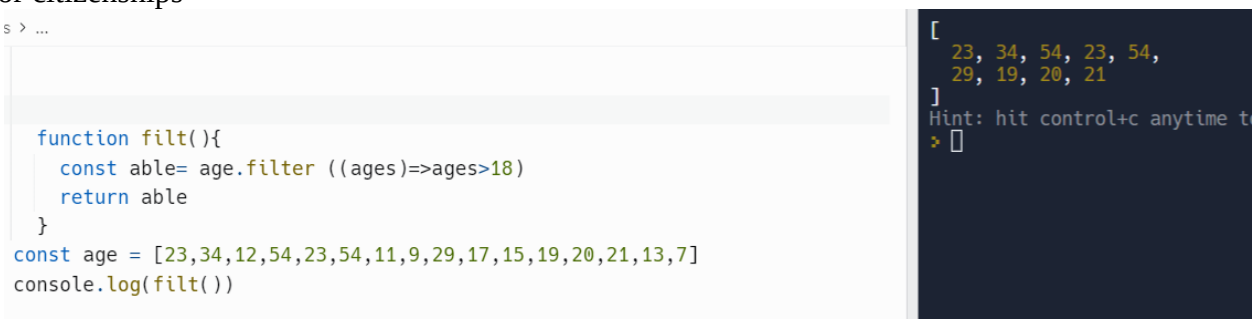
User input: 54

// congratulations!!! The number you guessed matched the original number. Your score is 97!

HIGHER ORDER ARRAY METHODS

Const age = [23,34,12,54,23,54,11,9,29,17,15,19,20,21,13,7]

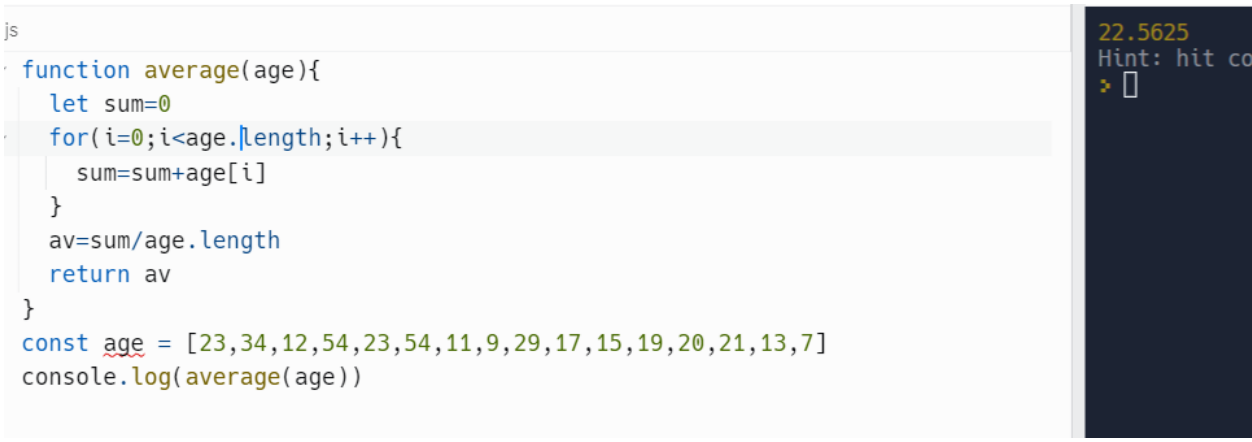
a. Filter the array of age who can apply for citizenships



```
function filt(){
  const able= age.filter ((ages)=>ages>18)
  return able
 }
const age = [23,34,12,54,23,54,11,9,29,17,15,19,20,21,13,7]
console.log(filt())
```

```
[
  23, 34, 54, 23, 54,
  29, 19, 20, 21
]
Hint: hit control+c anytime t
```

b. Find the average age of a given



```
function average(age){
  let sum=0
  for(i=0;i<age.length;i++){
    sum=sum+age[i]
  }
  av=sum/age.length
  return av
}
const age = [23,34,12,54,23,54,11,9,29,17,15,19,20,21,13,7]
console.log(average(age))
```

```
22.5625
Hint: hit co
```

array Const companies = [

{ name: "ABC", category: "Finance", start: 1981, end: 2004 },

{ name: "XYZ", category: "Retail", start: 1991, end: 20012 },
{ name: "DGF", category: "Finance", start: 1976, end: 2008 },

{ name: "LFT", category: "Retail", start: 1971, end: 1979 },

{ name: "MND", category: "Retail", start: 1995, end: 2010 },

{ name: "HCK", category: "Technology", start: 1987, end: 2011 },

{ name: "BMC", category: "Technology", start: 1989, end: 2009 },

{ name: "TIC", category: "Retail", start: 1993, end: 2005 },

{ name: "NAC", category: "Technology", start: 1991, end: 2010 },

{ name: "ITC", category: "Finance", start: 1998, end: 2016 }

];

a. Filter the retail companies

```
function arr(){
   let able= companies.filter((company)=>{
     return company.category==="Retail"
   })
  console.log(able)
}
companies = [
  { name: "ABC", category: "Finance", start: 1981, end: 2004 },
  { name: "XYZ", category: "Retail", start: 1991, end: 20012 },
  { name: "DGF", category: "Finance", start: 1976, end: 2008 },
  { name: "LFT", category: "Retail", start: 1971, end: 1979 },
  { name: "MND", category: "Retail", start: 1995, end: 2010 },
  { name: "HCK", category: "Technology", start: 1987, end: 2011 },
  { name: "BMC", category: "Technology", start: 1989, end: 2009 },
  { name: "TIC", category: "Retail", start: 1993, end: 2005 },
  { name: "NAC", category: "Technology", start: 1991, end: 2010 },
  { name: "ITC", category: "Finance", start: 1998, end: 2016 } ];
arr()
```

```
[
  { name: 'XYZ', category: 'Retail', start: 1991, end: 20012 },
  { name: 'LFT', category: 'Retail', start: 1971, end: 1979 },
  { name: 'MND', category: 'Retail', start: 1995, end: 2010 },
  { name: 'TIC', category: 'Retail', start: 1993, end: 2005 }
]
Hint: hit control+c anytime to enter REPL.
>
```

b. Get the 80s companies from the array

```
function arr(){
   const able= companies.filter(company => company.start>=1980
&&company.start<=1989);


  console.log(able)
}
companies = [
  { name: "ABC", category: "Finance", start: 1981, end: 2004 },
  { name: "XYZ", category: "Retail", start: 1991, end: 20012 },
  { name: "DGF", category: "Finance", start: 1976, end: 2008 },
  { name: "LFT", category: "Retail", start: 1971, end: 1979 },
  { name: "MND", category: "Retail", start: 1995, end: 2010 },
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  { name: "NAC", category: "Technology", start: 1991, end: 2010 },
  { name: "ITC", category: "Finance", start: 1998, end: 2016 } ];
arr()
```

```
[
  { name: 'ABC', category: 'Finance', start: 1981, end: 2004 },
  { name: 'HCK', category: 'Technology', start: 1987, end: 2011 },
  { name: 'BMC', category: 'Technology', start: 1989, end: 2009 }
]
Hint: hit control+c anytime to enter REPL.
>
```

c. Get the companies that lasted for 10 or more years

```
function arr(){
   const able= companies.filter((company) => {
     return company.end- company.start >=10;
   })

  console.log(able)
}
companies = [
  { name: "ABC", category: "Finance", start: 1981, end: 2004 },
  { name: "XYZ", category: "Retail", start: 1991, end: 20012 },
  { name: "DGF", category: "Finance", start: 1976, end: 2008 },
  { name: "LFT", category: "Retail", start: 1971, end: 1979 },
  { name: "MND", category: "Retail", start: 1995, end: 2010 },
  { name: "HCK", category: "Technology", start: 1987, end: 2011 },
  { name: "BMC", category: "Technology", start: 1989, end: 2009 },
  { name: "TIC", category: "Retail", start: 1993, end: 2005 },
  { name: "NAC", category: "Technology", start: 1991, end: 2010 },
  { name: "ITC", category: "Finance", start: 1998, end: 2016 } ];
arr()
```

```
[
  { name: 'ABC', category: 'Finance', start: 1981, end: 2004 },
  { name: 'XYZ', category: 'Retail', start: 1991, end: 20012 },
  { name: 'DGF', category: 'Finance', start: 1976, end: 2008 },
  { name: 'MND', category: 'Retail', start: 1995, end: 2010 },
  { name: 'HCK', category: 'Technology', start: 1987, end: 2011 },
  { name: 'BMC', category: 'Technology', start: 1989, end: 2009 },
  { name: 'TIC', category: 'Retail', start: 1993, end: 2005 },
  { name: 'NAC', category: 'Technology', start: 1991, end: 2010 },
  { name: 'ITC', category: 'Finance', start: 1998, end: 2016 }
]
Hint: hit control+c anytime to enter REPL.
>
```