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

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

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

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

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!

```
function gameEngine(){
let randNum = Math.floor(Math.random()*100);
guess = 0;
while (guess < 3){
guessNum = parseInt(prompt("Enter your guess"));
if (guessNum == randNum){
console.log("You have won the game");
return
}
else if(guessNum < randNum){
console.log("The number is lesser: ")
}
else if(guessNum > randNum){
console.log("The number is more: ")
}
if (guess != 2){
console.log(`Try again `);
}
guess++
}
console.log(`You have lost the number is ${randNum}`);
}
gameEngine
```

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
b. Find the average age of a given 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 },

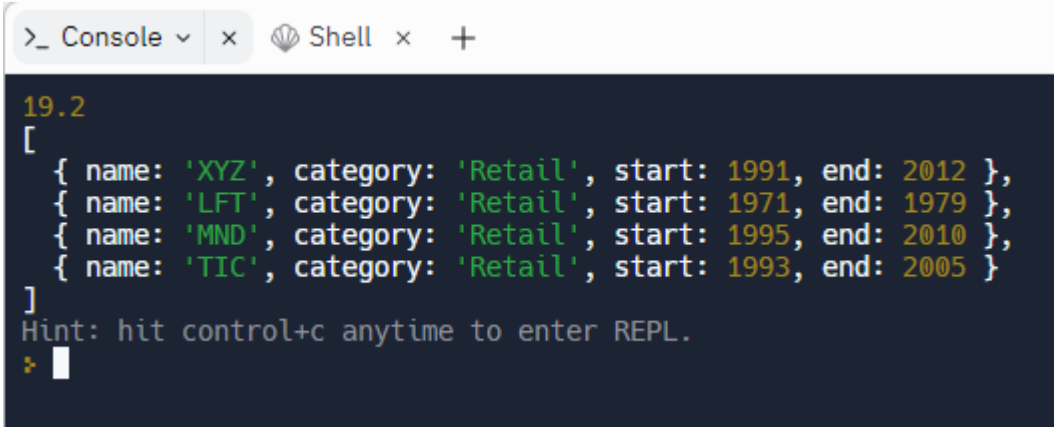
{ name: "ITC", category: "Finance", start: 1998, end: 2016 }

];

a. Filter the retail companies
b. Get the 80s companies from the array
c. Get the companies that lasted for 10 or more years

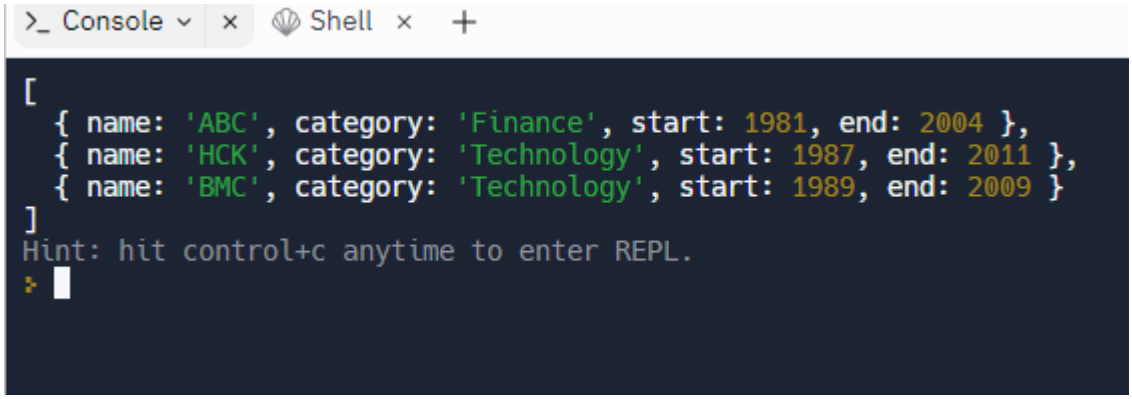
```
const companies = [
{ name: "ABC", category: "Finance", start: 1981, end: 2004 },
{ name: "XYZ", category: "Retail", start: 1991, end: 2012 },
{ name: "DGF", category: "Finance", start: 1976, end: 2008 },
{ name: "LFT", category: "Retail", start: 1971, end: 1979 },
{ name: "MND", category: "Retail", 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 }
]
let totalAge = 0
companies.forEach((element)=>{
totalAge += element.end - element.start
})
let averageAge = totalAge/companies.length
console.log(averageAge)

let retailCompanies = companies.filter((value)=> value.category === "Retail")
console.log(retailCompanies)
```



```
const companies = [
{ name: "ABC", category: "Finance", start: 1981, end: 2004 },
{ name: "XYZ", category: "Retail", start: 1991, end: 2012 },
{ 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 }
]


let eighties = companies.filter((value)=> value.start >= 1980 && value.start < 1990)
console.log(eighties)
```



```
const companies = [
{ name: "ABC", category: "Finance", start: 1981, end: 2004 },
{ name: "XYZ", category: "Retail", start: 1991, end: 2012 },
{ 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 }
]


let tenyears = companies.filter((value) => value.end - value.start >= 10);
console.log(tenyears)
```