<activity07/>

In-Class

You will submit only one file to Canvas with name:

`netId_Activity07_functions_objects.js`

The activity has 6 exercises using functions and objects. You will develop all exercises in the same Javascript file.

Programiz
JavaScript Online
Compiler

Reference:
https://www.programiz.com/javascript/online-compiler/

JS

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Exercise <1/>

Write a function `maxOfTwo(n1,n2)` that receives two params and it returns the maximum between the params.

INPUT :

```
let n1 = 11;
let n2 = 10;
console.log(`The max between ${n1} and ${n2} is :`, maxOfTwo(n1,n2));
```

OUTPUT :

```
11
```

Exercise <2/>

Write a function `maxOfArray(array)` that receives one array of numbers as a parameter, and it returns the maximum among all the numbers.

* Do not use `Math.max(…array)`

INPUT:

```
let array = [10,11,1024,125,9,201];
console.log(maxOfArray(array));
```

OUTPUT :

```
1024
```

Exercise <3/>

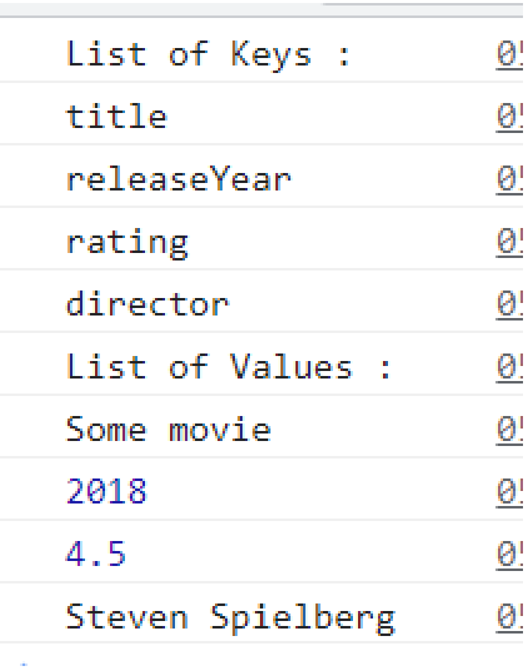
Given the next object, write a function `showProperties(movie)` to display the list of property names (keys) and then the list of property values (values):

INPUT:

```
// Object  :
const movie = {
  title : 'Some movie',
  releaseYear: 2018,
  rating: 4.5,
  director: 'Steven Spielberg'
};

showProperties(movie);
```

OUTPUT :



```
List of Keys :           0!
title                    0!
releaseYear              0!
rating                   0!
director                 0!
List of Values :         0!
Some movie               0!
2018                     0!
4.5                      0!
Steven Spielberg         0!
```

Hint : `for (let key in myMovie)` gives you the list of keys.

Exercise <4/>

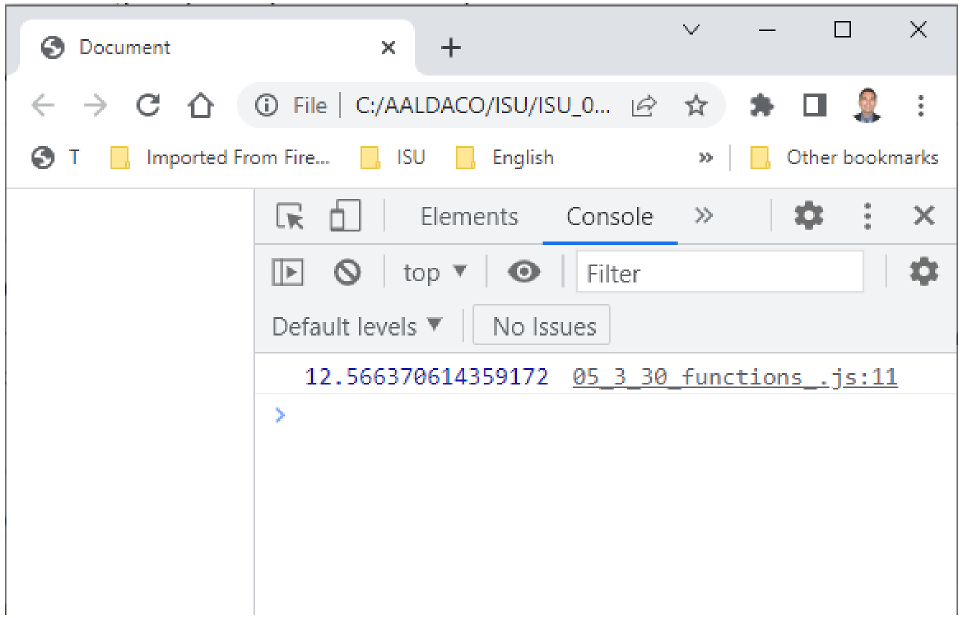
Create a **circle** object with key radius, and value 2.
Add a key area which is a function() that computes the area of the circle.

The area of a circle given its radius is : `Math.PI * this.radius * this.radius;`

INPUT:

```
console.log(circle.area());
```

OUTPUT :



```
12.566370614359172   05_3_30_functions_.js:11
>
```

Hint : `Math.PI is equal to 3.141592`

Exercise <5/>

Modify the Exercise 4, create **circle2** object to include **getter** and **setter** for the key radius.

INPUT:

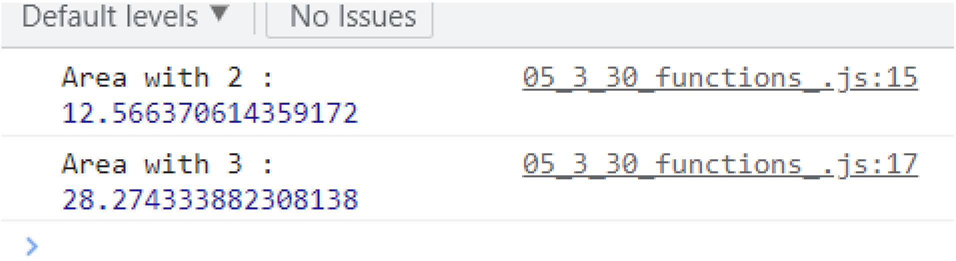
getter

Observe there is a parenthesis.
Why ?

setter

```
console.log(`Area with ${circle2.radiusValue} :`,circle2.area());
circle2.radiusValue = 3;
console.log(`Area with ${circle2.radiusValue} :`,circle2.area());
```

OUTPUT :



```
Area with 2 :                  05_3_30_functions_.js:15
12.566370614359172
Area with 3 :                  05_3_30_functions_.js:17
28.274333882308138
>
```

Observe there is not parenthesis.
Why ?

Hint: use get radiusValue(){ … }
set radiusValue(value) {…}

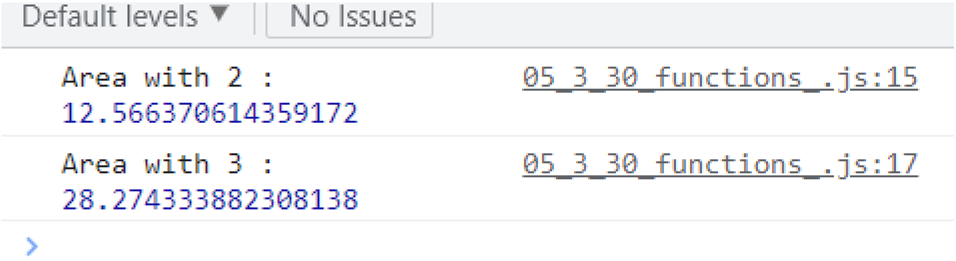
Exercise <6/>

Modify the Exercise 5, create **circle3** object to use functions instead of the **getter** and **setter** to return and set the value of radius respectively.

INPUT:

```
console.log(`Area with ${circle3.getRadiusValue()} :`,circle3.area());
circle3.setRadiusValue(3);
console.log(`Area with ${circle3.getRadiusValue()} :`,circle3.area());
```

OUTPUT :



```
Area with 2 :              05_3_30_functions_.js:15
12.566370614359172
Area with 3 :              05_3_30_functions_.js:17
28.274333882308138
>
```

Observe there is parenthesis. Why?

Hint: use getRadiusValue : function(){ … }
setRadiusValue : function(value) {…}

Optional problems if there is time

Exercise <7/>

Given the object representing a student’s grades, write a function “CalculateAverageGrade(grades)” that calculates and returns the average grade of the student..

INPUT:

```
const grades = {
  math: 85,
  science: 90,
  history: 75,
  literature: 88
};

console.log(calculateAverageGrade(grades));
```

OUTPUT :

```
Average Grade: 84.5
```

Exercise <8/>

This is DIFICULT !

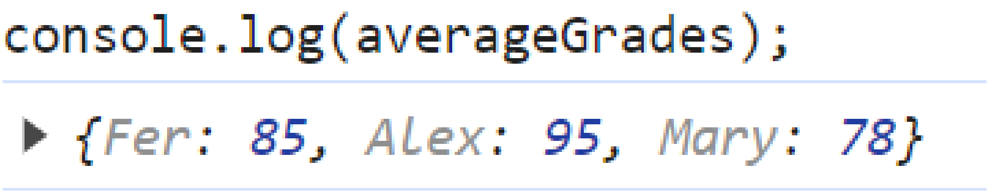
Given the array containing different objects representing students' grades, write a function “CalculateAverageGrade(array)” that calculates and returns an object with the average grade for all the students.

INPUT:

```
const students = [
  {
    Fer: {
      math: 85,
      science: 90,
      history: 75,
      literature: 88
    }
  },
  {
    Alex: {
      math: 99,
      science: 97,
      history: 94,
      literature: 90
    }
  },
  {
    Mary: {
      math: 79,
      science: 72,
      history: 81,
      literature: 79
    }
  }
];

console.log(calculateAverageGrade(grades));
```

OUTPUT :



```
console.log(averageGrades);
▶ {Fer: 85, Alex: 95, Mary: 78}
```