Assignment Week 4 – JavaScript & Version Control

Soal Homework:

1. Buatlah 100 nilai random (1 sampai 50) pada 1 array
2. Pecahlah menjadi 2 array berdasarkan indexnya, yakni array pada index genap dan array pada index ganjil, gunakan method push() untuk menambahkan nilai baru pada array
3. Gunakan 2 array yang telah dibuat untuk mendapatkan :
   - Min
   - Max
   - Total
   - Rata rata
4. Bandingkan kedua buah array, contoh:
   - Min lebih besar array genap
   - Max lebih besar array ganjil
   - Total memiliki nilai sama antara array genap dan ganjil
   - Rata rata lebih besar array ganjil

Output dari aplikasi:

- Array dengan jumlah index 100
- Array genap dengan jumlah index 50
- Array ganjil dengan jumlah index 50
- Min, Max, Total, Rata rata pada setiap array (genap dan ganjil) - Perbandingan nilai min, max, total dan rata rata

Catatan :

- Dilarang menggunakan fungsi bawaan untuk min, max, total dan rata rata
- Buatlah menjadi beberapa fungsi agar kode dapat digunakan kembali
- Push ke REPO dan upload link REPO, tolong repo dalam status public

Javascript Code:

```
function randomArrayGen(min, max, arraysize){
    let randomArray = [];
    for (let i = 0; i < arraysize; i++) {
        randomArray.push(Math.floor(Math.random() * (max - min + 1)) + min);
    }
    return randomArray;
}

function calculateTotal(array){
    let total = 0;
    for (let i = 0; i < array.length; i++){
        total += array[i];
    }
    return total;
}
```

```
function calculateAverage(array){
    return calculateTotal(array) / array.length;
}

function findMax(array){
    let maxValue = 0;
    for (let i = 0; i < array.length; i++){
        maxValue = array[i] > maxValue ? array[i] : maxValue;
    }
    return maxValue;
}

function findMin(array){
    let minValue = 100;
    for (let i = 0; i < array.length; i++){
        minValue = array[i] < minValue ? array[i] : minValue;
    }
    return minValue;
}

function separator(array){
    let evenArray = [];
    let oddArray = [];
    for (let i = 0; i < array.length; i++) {
        if (i % 2 === 0){
            evenArray.push(array[i]);
        } else {
            oddArray.push(array[i]);
        }
    }
    return [evenArray, oddArray];
}

// Penggunaan

const generatedArray = randomArrayGen(1, 50, 100);
const [generatedEven, generatedOdd] = separator(generatedArray);

const evenMin = findMin(generatedEven);
const evenMax = findMax(generatedEven);
const evenTotal = calculateTotal(generatedEven);
const evenAverage = calculateAverage(generatedEven);

const oddMin = findMin(generatedOdd);
const oddMax = findMax(generatedOdd);
const oddTotal = calculateTotal(generatedOdd);
const oddAverage = calculateAverage(generatedOdd);
```

```
const minComparison = evenMin > oddMin ? "Min lebih besar array genap" : "Min
lebih besar array ganjil";
const maxComparison = evenMax > oddMax ? "Max lebih besar array genap" : "Max
lebih besar array ganjil";
const totalComparison = evenTotal === oddTotal ? "Total memiliki nilai sama
antara array genap dan ganjil" : "Total tidak sama antara array genap dan
ganjil";
const averageComparison = evenAverage > oddAverage ? "Rata-rata lebih besar
array genap" : "Rata-rata lebih besar array ganjil";

console.log("Array dengan jumlah index 100:", generatedArray);
console.log("Array genap:", generatedEven);
console.log("Array ganjil", generatedOdd);
console.log("Statistika Pembanding Array Genap:");
console.log("Nilai Minimum:", evenMin,"Nilai Maximum:", evenMax,"Nilai
Total:", evenTotal,"Nilai Rata-rata", evenAverage);
console.log("Statistika Pembanding Array Ganjil:");
console.log("Nilai Minimum:", oddMin,"Nilai Maximum:", oddMax,"Nilai Total:",
oddTotal,"Nilai Rata-rata", oddAverage);
console.log("Perbandingan nilai:");
console.log(minComparison);
console.log(maxComparison);
console.log(totalComparison);
console.log(averageComparison);
```

Tampilan Terminal:

```
JS randomArrayAssignments.js > ...
 27 }

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

PS C:\Users\artif\Videos\Rakamin Resources\Week 4 - Assignments> node .\randomArrayAssignments.js
Array dengan jumlah index 100: [
  14,  7,  9, 19, 46, 27, 37, 38,  4, 31, 24, 41,
  36, 28, 14, 17, 10, 14, 43, 27,  6, 12, 11, 49,
  40, 44,  6, 32, 28, 30, 32, 49, 48, 11, 45, 37,
   3, 30, 36,  7, 34, 35,  7, 43, 30,  4, 46,  9,
  39, 16, 31, 36, 41, 50,  3,  5, 47, 30, 41, 23,
   8,  4, 27, 37, 48, 13, 23, 32, 48, 44, 31, 32,
  42,  5, 47,  1, 33, 41, 36, 14, 11, 10,  5, 24,
   3, 22, 33, 47, 45, 13, 12, 33, 26, 14, 16, 43,
  40, 22, 47,  8
]
Array genap: [
  14,  9, 46, 37,  4, 24, 36, 14, 10, 43,  6,
  11, 40,  6, 28, 32, 48, 45,  3, 36, 34,  7,
  30, 46, 39, 31, 41,  3, 47, 41,  8, 27, 48,
  23, 48, 31, 42, 47, 33, 36, 11,  5,  3, 33,
  45, 12, 26, 16, 40, 47
]
Array ganjil [
   7, 19, 27, 38, 31, 41, 28, 17, 14, 27, 12,
  49, 44, 32, 30, 49, 11, 37, 30,  7, 35, 43,
   4,  9, 16, 36, 50,  5, 30, 23,  4, 37, 13,
  32, 44, 32,  5,  1, 41, 14, 10, 24, 22, 47,
  13, 33, 14, 43, 22,  8
]
Statistika Pembanding Array Genap:
Nilai Minimum: 3 Nilai Maximum: 48 Nilai Total: 1392 Nilai Rata-rata 27.84
Statistika Pembanding Array Ganjil:
Nilai Minimum: 1 Nilai Maximum: 50 Nilai Total: 1260 Nilai Rata-rata 25.2
Perbandingan nilai:
Min lebih besar array genap
Max lebih besar array ganjil
Total tidak sama antara array genap dan ganjil
Rata-rata lebih besar array genap
PS C:\Users\artif\Videos\Rakamin Resources\Week 4 - Assignments>
```

+ Kode HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Random Array Generator</title>
    <link rel="preconnect" href="https://fonts.googleapis.com">
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
    <link
href="https://fonts.googleapis.com/css2?family=Inter:wght@400;600;700&display=
swap" rel="stylesheet">

    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
4bw+/aepP/YC94hEpVNVgiZdgIC5+VKNBQNGCHeKRQN+PtmoHDEXuppvnDJzQIu9"
crossorigin="anonymous">
    <link rel="stylesheet" href="style.css">
```

```
</head>
<body>
    <div class="container-fluid text-center mt-5">
    <h1>Random Array Generator</h1>
    <button id="generateBtn" class="btn btn-warning"
onclick="generate()">Generate</button>
    </div>

    <div id="contentContainer" class="container-fluid">
    </div>
</body>
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.8/dist/umd/popper.min.js
" integrity="sha384-
I7E8VVD/ismYTF4hNIPjVp/Zjvgyol6VFvRkX/vR+Vc4jQkC+hVqc2pM8ODewa9r"
crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.1/dist/js/bootstrap.min.js"
integrity="sha384-
Rx+T1VzGupg4BHQYs2gCW9It+akI2MM/mndMCy36UVfodzcJcF0GGLxZIzObiEfa"
crossorigin="anonymous"></script>
<script src="script.js"></script>
</html>
```

+ Translasi Javascript untuk HTML:

```
function randomArrayGen(min, max, arraysize){
    let randomArray = [];
    for (let i = 0; i < arraysize; i++) {
        randomArray.push(Math.floor(Math.random() * (max - min + 1)) + min);
    }
    return randomArray;
}

function calculateTotal(array){
    let total = 0;
    for (let i = 0; i < array.length; i++){
        total += array[i];
    }
    return total;
}

function calculateAverage(array){
    return calculateTotal(array) / array.length;
}

function separator(array){
    let evenArray = [];
```

```
    let oddArray = [];
    for (let i = 0; i < array.length; i++) {
        if (i % 2 === 0){
            evenArray.push(array[i]);
        } else {
            oddArray.push(array[i]);
        }
    }
    return [evenArray, oddArray];
}

// Penggunaan onClick
function generate(){
    let generatedArray = randomArrayGen(1, 50, 100);
    let [generatedEven, generatedOdd] = separator(generatedArray);

    let evenMin = Math.min(...generatedEven);
    let evenMax = Math.max(...generatedEven);
    let evenTotal = calculateTotal(generatedEven);
    let evenAverage = calculateAverage(generatedEven);

    let oddMin = Math.min(...generatedOdd);
    let oddMax = Math.max(...generatedOdd);
    let oddTotal = calculateTotal(generatedOdd);
    let oddAverage = calculateAverage(generatedOdd);

    let minComparison = evenMin > oddMin ? "Min lebih besar array genap" :
"Min lebih besar array ganjil";
    let maxComparison = evenMax > oddMax ? "Max lebih besar array genap" :
"Max lebih besar array ganjil";
    let totalComparison = evenTotal === oddTotal ? "Total memiliki nilai sama
antara array genap dan ganjil" : "Total tidak sama antara array genap dan
ganjil";
    let averageComparison = evenAverage > oddAverage ? "Rata-rata lebih besar
array genap" : "Rata-rata lebih besar array ganjil";

    const contentDom = document.getElementById('contentContainer')
    contentDom.innerHTML= ""
    contentDom.innerHTML=
        `
        <div id="outer" class="container mt-5 text-center">
            <div class="row">
                <div class="card m-2 col bg-warning p-2">
                <h3>Array dengan jumlah index 100: </h3>
                <p class="text-wrap">${generatedArray.join(", ")}</p>
                </div>
            </div>
            <div class="row">
```

```
                <div class="card m-2 col bg-success text-white p-2">
                    <h3>Array genap:</h3>
                    <p>${generatedEven.join(", ")}</p>
                    <h3>Statistika Pembanding: </h3>
                    <p>Nilai Minimum: <strong>${evenMin}</strong></p>
                    <p>Nilai Maximum: <strong>${evenMax}</strong></p>
                    <p>Nilai Total: <strong>${evenTotal}</strong></p>
                    <p>Nilai Rata - Rata: <strong>${evenAverage}</strong></p>
                </div>
                <div class="card m-2 col bg-danger text-white p-2">
                    <h3>Array ganjil: </h3>
                    <p>${generatedOdd.join(", ")}</p>
                    <h3>Statistika Pembanding: </h3>
                    <p>Nilai Minimum: <strong>${oddMin}</strong></p>
                    <p>Nilai Maximum: <strong>${oddMax}</strong></p>
                    <p>Nilai Total: <strong>${oddTotal}</strong></p>
                    <p>Nilai Rata - Rata: <strong>${oddAverage}</strong></p>
                </div>
            </div>
            <div class="row">
                <div class="card m-2 col bg-warning p-2">
                    <p>${minComparison}</p>
                </div>
                <div class="card m-2 col bg-warning p-2">
                    <p>${maxComparison}</p>
                </div>
                <div class="card m-2 col bg-warning p-2">
                    <p>${totalComparison}</p>
                </div>
                <div class="card m-2 col bg-warning p-2">
                    <p>${averageComparison}</p>
                </div>
            </div>
        </div>
        `
    const regenerateDom = document.getElementById('generateBtn')
    regenerateDom.innerHTML = "Re-Generate"
    regenerateDom.id="regenerateBtn"
    regenerateDom.setAttribute('onclick','regenerate()')
    }

    //penggunaan setelah klik pertama
    function regenerate(){
        const generateDom = document.getElementById('regenerateBtn')
        generateDom.id="generateBtn" //Agar tidak muncul Error, mengganti ID
'regenerate' kembali menjadi 'generate'
        const outerDom = document.getElementById("outer")
        outerDom.classList.add("exit")
```

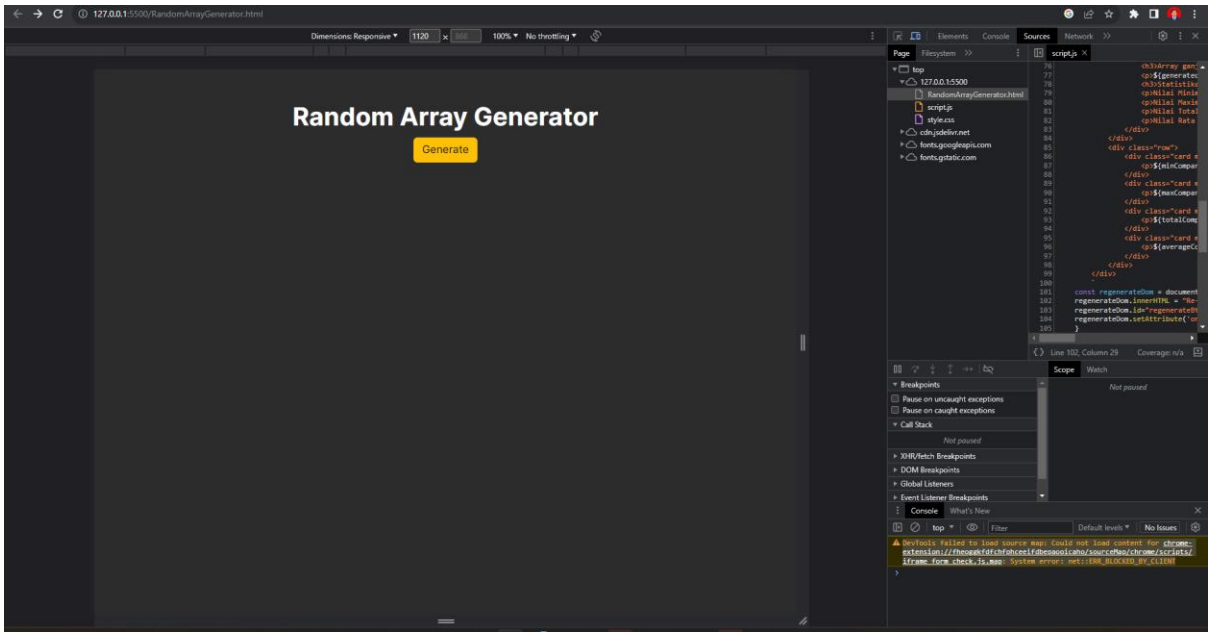
```
        setTimeout(generate,1000)

    }
```

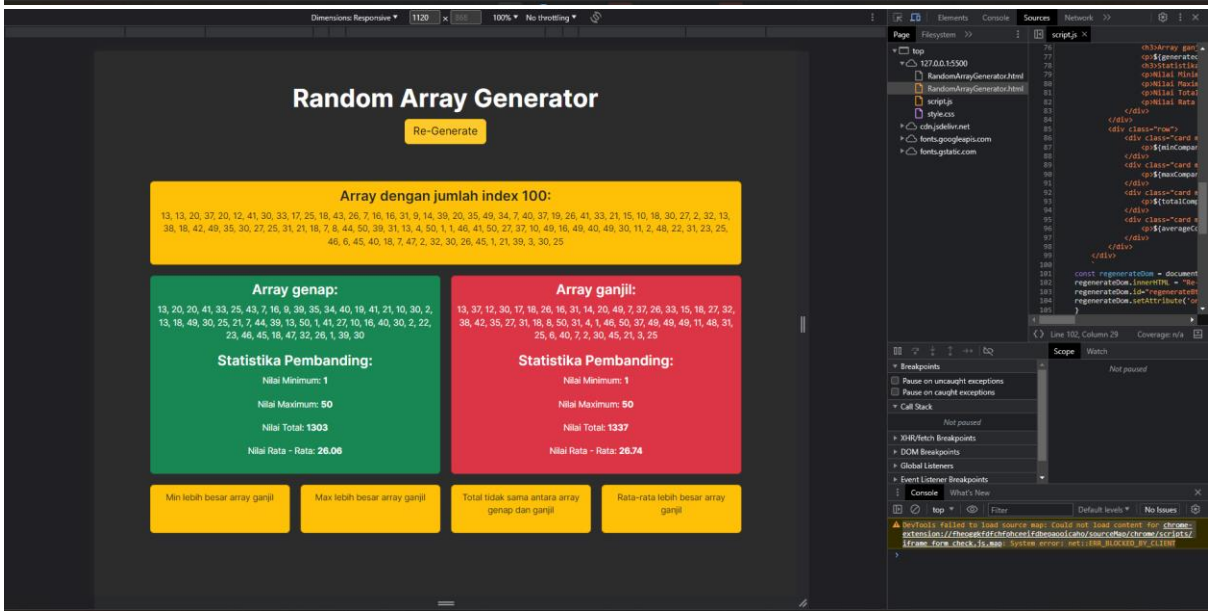
+ Kode CSS:

```
html body{
    font-family: 'Inter', sans-serif;
    background-color: rgb(44, 44, 44);
    color: #ffffff;
}

.container{
    background-color: rgb(44, 44, 44);
}

h1{
    font-weight: 700;
}

.card p{
    font-size: 0.8rem;
}

.card h3{
    font-size: 1.3rem;
    font-weight: 600;
}

.card{
    animation: fade-in 1s;
}

.exit{
    animation: fade-out 1s;
    opacity: 0;
}

/*Keyframes*/
@keyframes fade-in{
    0%{
        opacity: 0;
        transform: translateY(30px) scale(0.9);
    }
    100% {
        opacity: 100%;
        transform: translateY(0px) scale(1);
    }
```

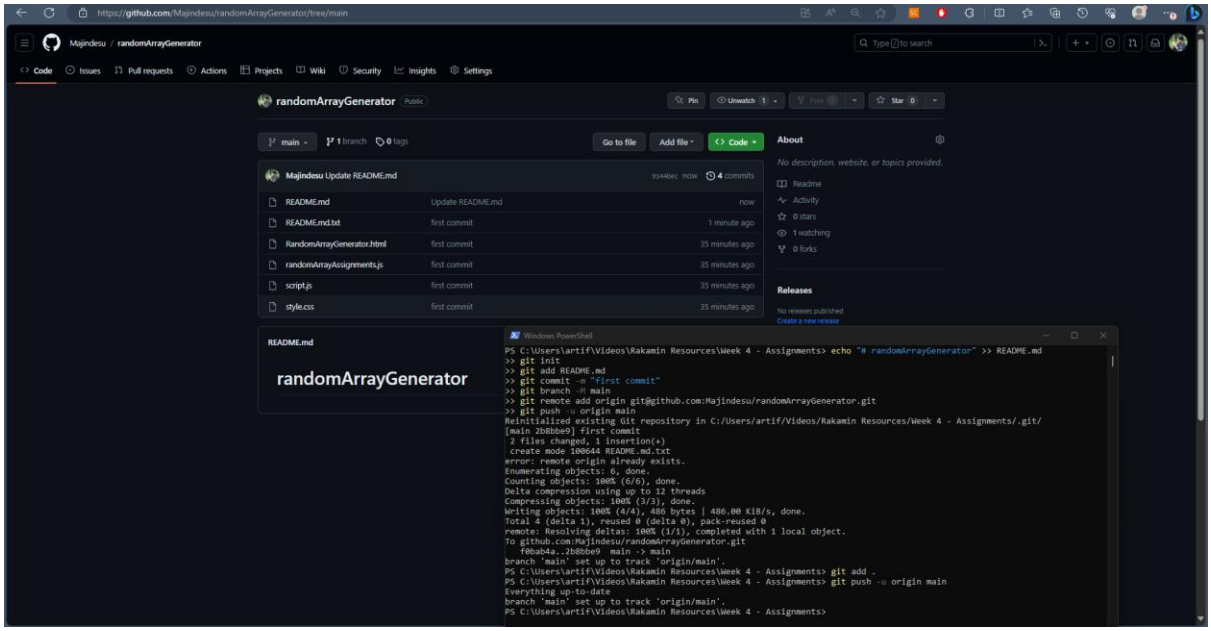
```
}

@keyframes fade-out{
    100%{
        opacity: 0;
        transform: translateY(30px) scale(0.9);
    }
    0% {
        opacity: 100%;
        transform: translateY(0px) scale(1);
    }
}
```

+ Tampilan HTML:





Successful Git Push:



Link: Majindesu/randomArrayGenerator (github.com)