1. Create an array of numbers and sort the numbers in ascending and descending order based on a choice. If the choice is 1 then the array should be sorted in ascending order and if the choice is 2, then the array should be sorted in descending order.
2. In mathematics, the **Fibonacci numbers** are the numbers in the following integer sequence:

0,1,1,2,3,5,8,13,21,34,..

By definition, the first two Fibonacci numbers are 0 and 1, and each subsequent number is the sum of the previous two.

In mathematical terms, the sequence *Fn* of Fibonacci numbers is defined by the recurrent relation:

Fn = Fn-1 + Fn-2; with initial values F0 = 0 and F1 = 1.

### **Objective:**

Understand how to write a recursive function.

### **Problem Statement:**

Write a JavaScript code with a function named fibonacci that takes some integer value as a parameter and returns the nth Fibonacci number, where we think of the first 1 as the first Fibonacci number. Thus, an invocation of fibonacci (6) should return 8, and in invocation of fibonacci (10) should return 55

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Nth Fibonnaci | 0 | 1 | 1 | 2 | 3 | 5 | 8 | 13 | 21 | 34 | 55 |

1. Percentage marks attained by a student in three exams are to be entered to a computer. An indication of Pass or Fail is given out after the three marks are entered.

The criteria for passing are as follows:

A student passes if all three examinations are passed.

Additionally a student may pass if only one subject is failed and the overall average is greater than or equal to 50.

The pass mark for an individual subject is 40

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| UTC | Sample Input | Sample Output |
| 01 | Marks in First Subject: 89  Marks in Second Subject: 55  Marks in third subject: 99 | PASS |
| 02 | Marks in First Subject: 32  Marks in Second Subject: 45  Marks in third subject: 90 | PASS |
| 03 | Marks in First Subject: 22  Marks in Second Subject: 65  Marks in third subject: 90 | PASS |
| 04 | Marks in First Subject: 22  Marks in Second Subject: 25  Marks in third subject: 20 | FAIL |

1. Write a JavaScript code to create an array where the midst position contains the smallest value followed by the next smallest value on the right of the midst position, followed by the next smallest value to the left of the midst position and the rest of numbers continue in this format
2. Create a 3\*3 matrix array (3 rows and 3 columns)
3. Insert values in those arrays (use sample values below)
4. Now create another array (single dimensional) where the values of that two dimensional array will be placed, but the way that has been explained earlier (refer the sample output below to understand better)

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| UTC | Sample Input | Sample Output |
| 01 | |  |  |  | | --- | --- | --- | | 4 | 2 | 13 | | 3 | 8 | 5 | | 9 | 6 | 17 | | {17,9,6,4,2,3,5,8,13} |
| 02 | |  |  |  | | --- | --- | --- | | 4 | 1 | 3 | | 3 | 8 | 5 | | 4 | 16 | 17 | | {17,8,4,3,1,3,4,5,16} |