# JavaScript Homework #2

## A. Basic

**1.** Write a JavaScript program to display the current day and time in the following format. *Sample Output :* Today is : Friday.   
Current time is : 4 PM : 50 : 22

**2.** Write a JavaScript program to print the contents of the current window.

**3.** Write a JavaScript program to get the current date.   
*Expected Output* :   
mm-dd-yyyy, mm/dd/yyyy or dd-mm-yyyy, dd/mm/yyyy

**4.** Write a JavaScript program to find the area of a triangle where lengths of the three of its sides are 5, 6, 7.

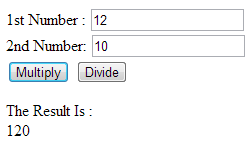
**5.** Write a JavaScript program to rotate the string 'w3resource' in right direction by periodically removing one letter from the end of the string and attaching it to the front.

**6.** Write a JavaScript program to determine whether a given year is a leap year in the Gregorian calendar.

**7.** Write a JavaScript program to find 1st January be a Sunday between 2014 and 2050.

**8.** Write a JavaScript program where the program takes a random integer between 1 to 10, the user is then prompted to input a guess number. If the user input matches with guess number, the program will display a message "Good Work" otherwise display a message "Not matched

**9.** Write a JavaScript program to calculate days left until next Christmas.

**10.** Write a JavaScript program to calculate multiplication and division of two numbers (input from user).   
*Sample form* :   


**11.** Write a JavaScript program to convert temperatures to and from celsius, fahrenheit.   
[ Formula : c/5 = f-32/9 [ where c = temperature in celsius and f = temperature in fahrenheit ]   
*Expected Output* :   
60°C is 140 °F  
45°F is 7.222222222222222°C

## B. Functions

**1.** Write a JavaScript function that reverse a number.   
Example x = 32243;  
*Expected Output :* 34223

**2.** Write a JavaScript function that checks whether a passed string is palindrome or not?

A palindrome is word, phrase, or sequence that reads the same backward as forward, e.g., madam or nurses run.

**3.** Write a JavaScript function that generates all combinations of a string.

*Example string :* 'dog'   
*Expected Output :* d,do,dog,o,og,g

**4.** Write a JavaScript function that returns a passed string with letters in alphabetical order.

*Example string :* 'webmaster'   
*Expected Output :* 'abeemrstw'  
Assume punctuation and numbers symbols are not included in the passed string.

**5.** Write a JavaScript function that accepts a string as a parameter and converts the first letter of each word of the string in upper case.

*Example string* : 'the quick brown fox'   
*Expected Output :* 'The Quick Brown Fox '

**6.** Write a JavaScript function that accepts a string as a parameter and find the longest word within the string.

*Example string* : 'Web Development Tutorial'   
*Expected Output :* 'Development'

**7.** Write a JavaScript function that accepts a string as a parameter and counts the number of vowels within the string.

Note : As the letter 'y' can be regarded as both a vowel and a consonant, we do not count 'y' as vowel here.   
*Example string* : 'The quick brown fox'   
*Expected Output :* 5

**8.** Write a JavaScript function that accepts a number as a parameter and check the number is prime or not.

Note : A prime number (or a prime) is a natural number greater than 1 that has no positive divisors other than 1 and itself.

**9.** Write a JavaScript function which accepts an argument and returns the type.

Note : There are six possible values that typeof returns: object, boolean, function, number, string, and undefined.

**10.** Write a JavaScript function which returns the n rows by n columns identity matrix.

**11.** Write a JavaScript function which will take an array of numbers stored and find the second lowest and second greatest numbers, respectively.

*Sample array :* [1,2,3,4,5]  
*Expected Output :* 2,4

**12.** Write a JavaScript function which says whether a number is perfect.

According to Wikipedia : In number theory, a perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (also known as its aliquot sum). Equivalently, a perfect number is a number that is half the sum of all of its positive divisors (including itself).  
*Example* : The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and 1 + 2 + 3 = 6. Equivalently, the number 6 is equal to half the sum of all its positive divisors: ( 1 + 2 + 3 + 6 ) / 2 = 6. The next perfect number is 28 = 1 + 2 + 4 + 7 + 14. This is followed by the perfect numbers 496 and 8128.

**13.** Write a JavaScript function to compute the factors of a positive integer.

**14.** Write a JavaScript function to convert an amount to coins.   
*Sample function* : amountTocoins(46, [25, 10, 5, 2, 1])  
Here 46 is the amount. and 25, 10, 5, 2, 1 are coins.   
*Output* : 25, 10, 10, 1

**15.** Write a JavaScript function to compute the value of *bn* where n is the exponent and b is the bases. Accept b and n from the user and display the result.

**16.** Write a JavaScript function to extract unique characters from a string.   
*Example string* : "thequickbrownfoxjumpsoverthelazydog"  
*Expected Output* : "thequickbrownfxjmpsvlazydg"

**17.** Write a JavaScript function to  get the number of occurrences of each letter in specified string.

**18.** Write a function for searching JavaScript arrays with a binary search.

*Note* : A binary search searches by splitting an array into smaller and smaller chunks until it finds the desired value.

**19.** Write a JavaScript function that returns array elements larger than a number.

**20.** Write a JavaScript function that generates a string id (specified length) of random characters.

*Sample character list* : "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789"

**21.** Write a JavaScript function to get all possible subset with a fixed length (for example 2) combinations in an array.   
*Sample array* : [1, 2, 3] and subset length is 2   
*Expected output* : [[2, 1], [3, 1], [3, 2], [3, 2, 1]]

**22.** Write a JavaScript function that accepts two arguments, a string and a letter and the function will count the number of occurrences of the specified letter within the string.   
*Sample arguments* : 'w3resource.com', 'o'   
*Expected output* : 2

**23.** Write a JavaScript function to find the first not repeated character.   
*Sample arguments* : 'abacddbec'   
*Expected output* : 'e'

**24.** Write a JavaScript function to apply Bubble Sort algorithm.

*Note* : According to wikipedia "Bubble sort, sometimes referred to as sinking sort, is a simple sorting algorithm that works by repeatedly stepping through the list to be sorted, comparing each pair of adjacent items and swapping them if they are in the wrong order".   
*Sample array* : [12, 345, 4, 546, 122, 84, 98, 64, 9, 1, 3223, 455, 23, 234, 213]  
*Expected output* : [3223, 546, 455, 345, 234, 213, 122, 98, 84, 64, 23, 12, 9, 4, 1]

## C. Recursion

**1.** Write a JavaScript program to calculate the factorial of a number.

In mathematics, the factorial of a non-negative integer n, denoted by n!, is the product of all positive integers less than or equal to n. For example, 5! = 5 x 4 x 3 x 2 x 1 = 120

**2.** Write a JavaScript program to find the greatest common divisor (gcd) of two positive numbers.

**3.** Write a JavaScript program to get the integers in range (x, y).   
*Example* : range(2, 9)  
*Expected Output :* [3, 4, 5, 6, 7, 8]

**4.** Write a JavaScript program to compute the sum of an array of integers.   
Example : var array = [1, 2, 3, 4, 5, 6]  
*Expected Output :* 21

**5.** Write a JavaScript program to compute the exponent of a number.

Note : The exponent of a number says how many times the base number is used as a factor.  
82 = 8 x 8 = 64. Here 8 is the base and 2 is the exponent.

**6.** Write a JavaScript program to get the first n Fibonacci numbers.

Note : The Fibonacci Sequence is the series of numbers: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, . . . Each subsequent number is the sum of the previous two.

**7.** Write a JavaScript program to check whether a number is even or not.

**8.** Write a JavaScript program for binary search.   
*Sample array* : [0,1,2,3,4,5,6]  
console.log(l.br\_search(5)) will return '5'

**9.** Write a merge sort program in JavaScript.   
*Sample array* : [34,7,23,32,5,62]  
*Sample output* : [5, 7, 23, 32, 34, 62]

## D. Conditions and Iterations

**1.** Write a JavaScript program that accept two integers and display the larger.

**2.** Write a JavaScript conditional statement to find the sign of product of three numbers. Display an alert box with the specified sign.   
*Sample numbers* : 3, -7, 2   
*Output* : The sign is -

**3.** Write a JavaScript conditional statement to sort three numbers. Display an alert box to show the result.   
*Sample numbers* : 0, -1, 4   
*Output* : 4, 0, -1

**4.** Write a JavaScript conditional statement to find the largest of five numbers. Display an alert box to show the result.   
*Sample numbers* : -5, -2, -6, 0, -1  
*Output* : 0

**5.** Write a JavaScript for loop that will iterate from 0 to 15. For each iteration, it will check if the current number is odd or even, and display a message to the screen.   
*Sample Output :*   
"0 is even"  
"1 is odd"   
"2 is even"  
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**6.** Write a JavaScript program which compute, the average marks of the following students Then, this average is used to determine the corresponding grade.

|  |  |
| --- | --- |
| **Student Name** | **Marks** |
| David | 80 |
| Vinoth | 77 |
| Divya | 88 |
| Ishitha | 95 |
| Thomas | 68 |

The grades are computed as follows :

|  |  |
| --- | --- |
| **Range** | **Grade** |
| <60 | F |
| <70 | D |
| <80 | C |
| <90 | B |
| <100 | A |

**7.** Write a JavaScript program which iterates the integers from 1 to 100. But for multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

**8.** According to Wikipedia a happy number is defined by the following process :   
"Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are happy numbers, while those that do not end in 1 are unhappy numbers (or sad numbers)".  
Write a JavaScript program to find and print the first 5 happy numbers.

**9.** Write a JavaScript program to find the armstrong numbers of 3 digits.

Note : An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since 3\*\*3 + 7\*\*3 + 1\*\*3 = 371.

**10.** Write a JavaScript program to construct the following pattern, using a nested for loop.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**11.** Write a JavaScript program to compute the greatest common divisor (GCD) of two positive integers.

**12.** Write a JavaScript program to sum the multiples of 3 and 5 under 1000.

## E. Array

**1.** Write a JavaScript function to check whether an `input` is an array or not. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Test Data* :  
console.log(is\_array('w3resource'));   
console.log(is\_array([1, 2, 4, 0]));  
false  
true  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fsuruna%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20check%20whether%20an%20%60input%60%20is%20an%20array%20or%20not.)

**2.** Write a JavaScript function to clone an array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Test Data* :  
console.log(array\_Clone([1, 2, 4, 0]));   
console.log(array\_Clone([1, 2, [4, 0]]));  
[1, 2, 4, 0]   
[1, 2, [4, 0]]  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fdireniziku%2F3%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20%20%20clone%20an%20array.)

**3.** Write a JavaScript function to get the first element of an array. Passing a parameter 'n' will return the first 'n' elements of the array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Test Data* :   
console.log(first([7, 9, 0, -2]));   
console.log(first([],3));  
console.log(first([7, 9, 0, -2],3));  
console.log(first([7, 9, 0, -2],6));  
console.log(first([7, 9, 0, -2],-3));  
*Expected Output* :   
7  
[]   
[7, 9, 0]   
[7, 9, 0, -2]   
[]   
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fxepigo%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20first%20element%20of%20an%20array.%20Passing%20a%20parameter%20%27n%27%20will%20return%20the%20first%20%27n%27%20elements%20of%20the%20array.)

**4.** Write a JavaScript function to get the last element of an array. Passing a parameter 'n' will return the last 'n' elements of the array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Test Data* :   
console.log(last([7, 9, 0, -2]));   
console.log(last([7, 9, 0, -2],3));   
console.log(last([7, 9, 0, -2],6));  
*Expected Output* :   
-2   
[9, 0, -2]   
[7, 9, 0, -2]  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fxedidu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20last%20element%20of%20an%20array.%20Passing%20a%20parameter%20%27n%27%20will%20return%20the%20last%20%27n%27%20elements%20of%20the%20array.)

**5.** Write a simple JavaScript program to join all elements of the following array into a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Sample array* : myColor = ["Red", "Green", "White", "Black"];  
*Expected Output* :   
"Red,Green,White,Black"  
"Red,Green,White,Black"  
"Red+Green+White+Black"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FoWIKIMi%2F1%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20to%20join%20all%20elements%20of%20an%20array%20into%20a%20string.)

**6.** Write a JavaScript program which accept a number as input and insert dashes (-) between each two even numbers. For example if you accept 025468 the output should be 0-254-6-8. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FidEKaF%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20which%20accept%20a%20number%20as%20input%20and%20insert%20dashes%20%28-%29%20between%20each%20two%20even%20numbers.%20For%20example%20if%20you%20accept%20025468%20the%20output%20should%20be%200-254-6-8.)

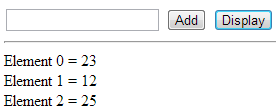
**7.** Write a JavaScript program to sort the items of an array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Sample array* : var arr1 = [ 3, 8, 7, 6, 5, -4, 3, 2, 1 ];  
*Sample Output* : -4,-3,1,2,3,5,6,7,8  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FiHiKoHA%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20sort%20the%20items%20of%20an%20array.)  
  
**8.** Write a JavaScript program to find the most frequent item of an array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
*Sample array* : var arr1=[3, 'a', 'a', 'a', 2, 3, 'a', 3, 'a', 2, 4, 9, 3];  
*Sample Output* : a ( 5 times )   
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FOKoMIHO%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20find%20the%20most%20frequent%20item%20of%20an%20array.)

**9.** Write a JavaScript program which accept a string as input and swap the case of each character. For example if you input 'The Quick Brown Fox' the output should be 'tHE qUICK bROWN fOX'. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FoXErOCu%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20which%20accept%20a%20string%20as%20input%20and%20swap%20the%20case%20of%20each%20character.%20For%20example%20if%20you%20input%20The%20Quick%20Brown%20Fox%20the%20output%20should%20be%20tHE%20qUICK%20bROWN%20fOX.)

**10.** Write a JavaScript program which prints the elements of the following array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Note : Use nested for loops.  
Sample array : var a = [[1, 2, 1, 24], [8, 11, 9, 4], [7, 0, 7, 27], [7, 4, 28, 14], [3, 10, 26, 7]];  
*Sample Output* :   
"row 0"   
" 1"   
" 2"   
" 1"  
" 24"  
"row 1"   
------  
------  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FiKoLiRE%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole%2Coutput&r=Write%20a%20JavaScript%20program%20which%20prints%20the%20elements%20of%20an%202-D%20array.)

**11.** Write a JavaScript program to find the sum of squares of a numeric vector. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FAKisubU%2F1%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20find%20the%20sum%20of%20squares%20of%20a%20numeric%20vector.)

**12.** Write a JavaScript program to compute the sum and product of an array of integers. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FOzuFeze%2F1%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20compute%20the%20sum%20and%20product%20of%20an%20array%20of%20integers.)

**13.** Write a JavaScript program to add items in an blank array and display the items. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FAZEfeCA%2F6%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20compute%20the%20sum%20and%20product%20of%20an%20array%20of%20integers.)  
*Sample Screen* :   


**14.** Write a JavaScript program to remove duplicate items from an array (ignore case sensitivity). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FiBEkOhAs%2F4%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20remove%20duplicate%20items%20from%20an%20array%20%28ignore%20case%20sensitivity%29.)

**15.** We have the following arrays : [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "];  
o = ["th","st","nd","rd"]  
Write a JavaScript program to display the colors in the following way :  
"1st choice is Blue ."  
"2nd choice is Green."  
"3rd choice is Red."  
- - - - - - - - - - - - -  
Note : Use ordinal numbers to tell their position.  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FeFUGIFa%2F3%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20display%20the%20colors%20using%20ordinal%20numbers.)

**16.** Find the leap years in a given range of years. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FedeXoBa%2F3%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Find%20%20the%20leap%20years%20in%20a%20given%20range%20of%20years.)

**17.** Write a JavaScript program to shuffle an array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FUtAxaJa%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20shuffle%20an%20array.)

**18.** Write a JavaScript program to perform a binary search. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Note : A binary search or half-interval search algorithm finds the position of a specified input value within an array sorted by key value.   
Sample array :   
var items = [1, 2, 3, 4, 5, 7, 8, 9];  
Expected Output :   
console.log(binary\_Search(items, 1)); //0   
console.log(binary\_Search(items, 5)); //4  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fwimilebo%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20perform%20a%20binary%20search.%20A%20binary%20search%20or%20half-interval%20search%20algorithm%20finds%20the%20position%20of%20a%20specified%20input%20value%20within%20an%20array%20sorted%20by%20key%20value.)

**19.** There are two arrays with individual values, write a JavaScript program to compute the sum of each individual index value from the given arrays. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Sample array :   
array1 = [1,0,2,3,4];  
array2 = [3,5,6,7,8,13];  
Expected Output :   
[4, 5, 8, 10, 12, 13]   
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fredop%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20There%20are%20two%20arrays%20with%20individual%20values,%20write%20a%20JavaScript%20program%20to%20compute%20the%20sum%20of%20each%20individual%20index%20value%20from%20the%20given%20arrays.)

**20.** Write a JavaScript program to find duplicate values in a JavaScript array. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fqavoti%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20find%20duplicate%20values%20in%20a%20JavaScript%20array.)

**21.** Write a JavaScript program to flatten a nested (any depth) array. If you pass shallow, the array will only be flattened a single level. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Sample Data :  
console.log(flatten([1, [2], [3, [[4]]],[5,6]]));   
[1, 2, 3, 4, 5, 6]  
console.log(flatten([1, [2], [3, [[4]]],[5,6]], true));   
[1, 2, 3, [[4]], 5, 6]  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fbimiqu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20flatten%20a%20nested%20%28any%20depth%29%20array.%20If%20you%20pass%20shallow,%20the%20array%20will%20only%20be%20flattened%20a%20single%20level.)

**22.** Write a JavaScript program to compute the union of two arrays. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Sample Data :  
console.log(union([1, 2, 3], [100, 2, 1, 10]));  
[1, 2, 3, 10, 100]  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fzojara%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20flatten%20a%20nested%20%28any%20depth%29%20array.%20If%20you%20pass%20shallow,%20the%20array%20will%20only%20be%20flattened%20a%20single%20level.)

**23.** Write a JavaScript function to find the difference of two arrays. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-array-exercises.php#EDITOR)  
Sample Data :  
console.log(difference([1, 2, 3], [100, 2, 1, 10]));   
console.log(difference([1, 2, 3, 4, 5], [1, [2], [3, [[4]]],[5,6]]));  
["1", "2", "3", "10", "100"]  
["1", "2", "3", "4", "5", "6"]

## F. Date

**1.** Write a JavaScript function to check whether an `input` is a date object or not. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(is\_date("October 13, 2014 11:13:00"));   
console.log(is\_date(new Date(86400000)));   
console.log(is\_date(new Date(99,5,24,11,33,30,0)));   
console.log(is\_date([1, 2, 4, 0]));  
*Output* :  
false   
true   
true   
false  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fkomopo%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20check%20whether%20an%20%60input%60%20is%20a%20date%20object%20or%20not.)

**2.** Write a JavaScript function to get the current date. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
Note : Pass a separator as an argument.  
*Test Data* :  
console.log(curday('/'));   
console.log(curday('-'));  
*Output* :  
"11/13/2014"   
"11-13-2014"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fpofule%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20current%20date.)

**3.** Write a JavaScript function to get the number of days in a month. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(getDaysInMonth(1, 2012));   
console.log(getDaysInMonth(2, 2012));   
console.log(getDaysInMonth(9, 2012));   
console.log(getDaysInMonth(12, 2012));   
*Output* :  
31   
29   
30   
31  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Ffolida%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20number%20of%20days%20in%20a%20month.)

**4.** Write a JavaScript function to get the month name from a particular date. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(month\_name(new Date("10/11/2009")));   
console.log(month\_name(new Date("11/13/2014")));  
*Output* :  
"October"   
"November"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fterabo%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20month%20name%20from%20a%20particular%20date.)

**5.** Write a JavaScript function to compare dates (i.e. greater than, less than or equal to). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(compare\_dates(new Date('11/14/2013 00:00'), new Date('11/14/2013 00:00')));   
console.log(compare\_dates(new Date('11/14/2013 00:01'), new Date('11/14/2013 00:00')));   
console.log(compare\_dates(new Date('11/14/2013 00:00'), new Date('11/14/2013 00:01')));  
*Output* :  
"Date1 = Date2"   
"Date1 > Date2"   
"Date2 > Date1"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fjixix%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20compare%20dates%20%28i.e.%20greater%20than,%20less%20than%20or%20equal%20to%29.)

**6.** Write a JavaScript function to add specified minutes to a Date object. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(add\_minutes(new Date(2014,10,2), 30).toString());  
*Output* :  
"Sun Nov 02 2014 00:30:00 GMT+0530 (India Standard Time)"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fpemono%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20add%20specified%20minutes%20to%20a%20Date%20object?.)

**7.** Write a JavaScript function to test whether a date is a weekend. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
Note : Use standard Saturday/Sunday definition of a weekend.  
*Test Data* :  
console.log(is\_weekend('Nov 15, 2014'));   
console.log(is\_weekend('Nov 16, 2014'));   
console.log(is\_weekend('Nov 17, 2014'));  
*Output* :  
"weekend"   
"weekend"   
undefined  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fpibata%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20test%20whether%20a%20date%20is%20a%20weekend.)

**8.** Write a JavaScript function to get difference between two dates in days. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(date\_diff\_indays('04/02/2014', '11/04/2014'));   
console.log(date\_diff\_indays('12/02/2014', '11/04/2014'));  
*Output* :  
216   
-28  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fvupufu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20difference%20between%20two%20dates%20in%20days.)

**9.** Write a JavaScript function to get the last day of a month. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(lastday(2014,0));   
console.log(lastday(2014,1));   
console.log(lastday(2014,11));  
*Output* :  
31   
28   
31  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fcufiso%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20get%20the%20last%20day%20of%20a%20month.)

**10.** Write a JavaScript function to calculate 'yesterday day'. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-date-exercises.php#EDITOR)  
*Test Data* :  
console.log(yesterday('Nov 15, 2014'));   
console.log(yesterday('Nov 16, 2015'));   
console.log(yesterday('Nov 17, 2016'));  
*Output* :  
"Fri Nov 14 2014 00:00:00 GMT+0530 (India Standard Time)"   
"Sun Nov 15 2015 00:00:00 GMT+0530 (India Standard Time)"   
"Wed Nov 16 2016 00:00:00 GMT+0530 (India Standard Time)"

## G. String

**1.** Write a JavaScript function to check whether an `input` is a string or not. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(is\_string('w3resource'));   
true  
console.log(is\_string([1, 2, 4, 0]));  
false  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Ffubovi%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20check%20whether%20an%20%60input%60%20is%20a%20string%20or%20not.)

**2.** Write a JavaScript function to check whether a string is blank or not. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(is\_Blank(''));   
console.log(is\_Blank('abc'));  
true   
false  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fkijebu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20check%20whether%20a%20string%20is%20blank%20or%20not.)

**3.** Write a JavaScript function to split a string and convert it into an array of words. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(string\_to\_array("Robin Singh"));  
["Robin", "Singh"]  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fsejum%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20break%20a%20string%20and%20convert%20it%20into%20an%20array%20of%20words.)

**4.** Write a JavaScript function to remove specified number of characters from a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(truncate\_string("Robin Singh",4));  
"Robi"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fbuvibu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20remove%20specified%20number%20of%20characters%20from%20a%20string.).

**5.** Write a JavaScript function to convert a string in abbreviated form. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(abbrev\_name("Robin Singh"));  
"Robin S."  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fdemomo%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20function%20to%20convert%20a%20string%20in%20abbreviated%20form.).

**6.** Write a JavaScript function to hide email addresses to protect from unauthorized user. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(protect\_email("robin\_singh@example.com"));  
"robin...@example.com"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fvacos%2F3%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20hide%20email%20addresses%20and%20protect%20from%20unauthorised%20user.).

**7.** Write a JavaScript function to parameterize a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(string\_parameterize("Robin Singh from USA."));  
"robin-singh-from-usa"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Ftizaw%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20parameterize%20a%20string.).

**8.** Write a JavaScript function to capitalize the first letter of a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(capitalize('js string exercises'));  
"Js string exercises"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fdobaco%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20capitalize%20the%20first%20letter%20of%20a%20string.).

**9.** Write a JavaScript function to capitalize the first letter of each word in a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(capitalize\_Words('js string exercises'));  
"Js String Exercises"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fhoresu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20capitalize%20the%20first%20letter%20of%20each%20word%20in%20a%20string.).

**10.** Write a JavaScript function that takes a string which has lower and upper case letters as a parameter and converts upper case letters to lower case, and lower case letters to upper case. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(swapcase('AaBbc'));  
"aAbBC"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fkomero%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20that%20takes%20a%20string%20which%20has%20lower%20and%20upper%20case%20letters%20as%20a%20parameter%20and%20converts%20upper%20case%20letters%20to%20lower%20case,%20and%20lower%20case%20letters%20to%20upper%20case.).

**11.** Write a JavaScript function to convert a string into camel case. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(camelize("JavaScript Exercises"));   
console.log(camelize("JavaScript exercises"));   
console.log(camelize("JavaScriptExercises"));  
"JavaScriptExercises"   
"JavaScriptExercises"   
"JavaScriptExercises"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Flexino%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20convert%20a%20string%20into%20camel%20case.).

**12.** Write a JavaScript function to uncamelize a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(uncamelize('helloWorld'));   
console.log(uncamelize('helloWorld','-'));   
console.log(uncamelize('helloWorld','\_'));  
"hello world"   
"hello-world"   
"hello\_world"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fgapefa%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20uncamelize%20a%20string.).

**13.** Write a JavaScript function to concatenates a given string n times (default is 1). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(repeat('Ha!'));   
console.log(repeat('Ha!',2));   
console.log(repeat('Ha!',3));  
"Ha!"   
"Ha!Ha!"   
"Ha!Ha!Ha!"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fnaloka%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20concatenates%20a%20given%20string%20n%20times%20%28default%20is%201%29).

**14.** Write a JavaScript function to insert a string within a string at a particular position (default is 1). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(insert('We are doing some exercises.'));   
console.log(insert('We are doing some exercises.','JavaScript '));   
console.log(insert('We are doing some exercises.','JavaScript ',18));  
"We are doing some exercises."   
"JavaScript We are doing some exercises."   
"We are doing some JavaScript exercises."  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fnalili%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20concatenates%20a%20given%20string%20n%20times%20%28default%20is%201%29).

**15.** Write a JavaScript function to insert a string within a string at a particular position (default is 1). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(insert('We are doing some exercises.'));   
console.log(insert('We are doing some exercises.','JavaScript '));   
console.log(insert('We are doing some exercises.','JavaScript ',18));  
"We are doing some exercises."   
"JavaScript We are doing some exercises."   
"We are doing some JavaScript exercises."  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fnalili%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20program%20to%20concatenates%20a%20given%20string%20n%20times%20%28default%20is%201%29.).

**16.** Write a JavaScript function to humanized number (Formats a number to a human-readable string.) with the correct suffix such as 1st, 2nd, 3rd or 4th. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(humanize\_format());   
console.log(humanize\_format(1));   
console.log(humanize\_format(8));   
console.log(humanize\_format(301));   
console.log(humanize\_format(402));   
"1st"   
"8th"   
"301st"   
"402nd"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Flohud%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20function%20to%20humanized%20number%20%28Formats%20a%20number%20to%20a%20human-readable%20string.%29%20with%20the%20correct%20suffix%20such%20as%201st,%202nd,%203rd%20or%204th.).

**17.** Write a JavaScript function to truncates a string if it is longer than the specified number of characters. Truncated strings will end with a translatable ellipsis sequence ("…") (by default) or specified characters. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(text\_truncate('We are doing JS string exercises.'))   
console.log(text\_truncate('We are doing JS string exercises.',19))  
console.log(text\_truncate('We are doing JS string exercises.',15,'!!'))  
"We are doing JS string exercises."   
"We are doing JS ..."   
"We are doing !!"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fvufiti%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=%20Write%20a%20JavaScript%20function%20to%20truncates%20a%20string%20if%20it%20is%20longer%20than%20the%20specified%20number%20of%20characters.).

**18.** Write a JavaScript function to chop a string into chunks of a given length. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-string-exercises.php#EDITOR)  
*Test Data* :  
console.log(string\_chop('w3resource'));   
console.log(string\_chop('w3resource',2));   
console.log(string\_chop('w3resource',3));  
["w3resource"]   
["w3", "re", "so", "ur", "ce"]   
["w3r", "eso", "urc", "e"]

## H. Math

**1.** Write a JavaScript function to convert a number from one base to another. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-math-exercises.php#EDITOR)  
**Note** : Both bases must be between 2 and 36.  
*Test Data* :  
console.log(base\_convert('E164',16,8));   
console.log(base\_convert(1000,2,8));  
"160544"  
"10"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fxitumu%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20convert%20a%20number%20from%20one%20base%20to%20another.)

**2.** Write a JavaScript function to convert a binary number to a decimal number. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-math-exercises.php#EDITOR)  
*Test Data* :  
console.log(bin\_to\_dec('110011'));   
console.log(bin\_to\_dec('100'));  
51   
4  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fhokak%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20convert%20a%20binary%20number%20to%20a%20decimal%20number.)

**3.** Write a JavaScript function to convert a decimal number to binary, hexadecimal or octal number. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-math-exercises.php#EDITOR)  
*Test Data* :  
console.log(dec\_to\_bho(120,'B'));   
console.log(dec\_to\_bho(120,'H'));   
console.log(dec\_to\_bho(120,'O'));  
"1111000"   
"78"   
"170"  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fbivipa%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20function%20to%20convert%20a%20decimal%20number%20to%20binary,%20hexadecimal%20or%20octal%20number.)

**4.** Write a JavaScript function to generate a random integer. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-math-exercises.php#EDITOR)  
*Test Data* :  
console.log(rand(20,1));   
console.log(rand(1,10));   
console.log(rand(6));   
console.log(rand());   
15   
5   
1   
0

## I. Regular Expression

**1.** Write a JavaScript program to test the first character of a string is uppercase or not. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FoGAWUKA%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20test%20the%20first%20character%20of%20a%20string%20is%20uppercase%20or%20not.)

**2.** Write a JavaScript program to check a credit card number ( format 9999-9999-9999-9999 ). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FomuvoPA%2F1%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20check%20a%20credit%20card%20number%20%28%20format%209999-9999-9999-9999%20%29.)

**3.** Write a pattern that matches e-mail addresses. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
The personal information part contains the following ASCII characters.

* Uppercase (A-Z) and lowercase (a-z) English letters.
* Digits (0-9).
* Characters ! # $ % & ' \* + - / = ? ^ \_ ` { | } ~
* Character . ( period, dot or fullstop) provided that it is not the first or last character and it will not come one after the other.

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FiWOkInOF%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20pattern%20that%20matches%20e-mail%20addresses.)

**4.** Write a JavaScript program to search a date (format dd/dd/dddd) within a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
Sample string : "Albert Einstein was born in Ulm, on 14/03/1879."  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FuriHUSOB%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20%20search%20a%20date%20%28format%20dd/dd/dddd%29%20within%20a%20string.)

**5.** Write a JavaScript program that work as a trim function (string) using regular expression. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FUwAYUbu%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20that%20work%20as%20a%20trim%20function%20%28string%29%20using%20regular%20expression.)

**6.** Write a JavaScript program to count number of words in string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-regexp-exercises.php#EDITOR)  
*Note* :   
- Remove white-space from start and end position.   
- Convert 2 or more spaces to 1.   
- Exclude newline with a start spacing.

## J. DOM

**1.** Here is a sample html file with a submit button. Now modify the style of the paragraph text through javascript code. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><br><head>
3. <meta charset=utf-8 />
4. <title>JS DOM paragraph style</title>
5. </head>
6. <body>
7. <p id ='text'>JavaScript Exercises - w3resource</p>
8. <div>
9. <button id="jsstyle"
10. onclick="js\_style()">Style</button>
11. </div>
12. </body>
13. </html>

Clicking on the button the font, font size, and color of the paragraph text will be changed.  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fruvab%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Here%20is%20a%20sample%20html%20file%20with%20a%20submit%20button.%20Now%20modiy%20the%20style%20of%20the%20paragraph%20text%20through%20javascript)

**2.** Write a JavaScript function to get the values of First and Last name of the following form. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head>
3. <meta charset=utf-8 />
4. <title>Return first and last name from a form - w3resource</title>
5. </head><body>
6. <form id="form1" onsubmit="getFormvalue()">
7. First name: <input type="text" name="fname" value="David"><br>
8. Last name: <input type="text" name="lname" value="Beckham"><br>
9. <input type="submit" value="Submit">
10. </form>
11. </body>
12. </html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FOdUKAcOY%2F5%2Fembed%3Fhtml%2Cjs%2Cconsole%2Coutput&r=Write%20a%20JavaScript%20function%20to%20get%20the%20values%20of%20Frist%20and%20Last%20name%20of%20the%20following%20form.)

**3.** Write a JavaScript program to set the background color of a paragraph. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FEYERevu%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20set%20the%20background%20color%20of%20a%20paragraph.)

**4.** Here is a sample html file with a submit button. Write a JavaScript function to get the value of the href, hreflang, rel, target, and type attributes of the specified link. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head>
3. <meta charset=utf-8 />
4. </head>
5. <body>
6. <p><a id="w3r" type="text/html" hreflang="en-us" rel="nofollow" target="\_self" href="http://www.w3resource.com/">w3resource</a></p>
7. <button onclick="getAttributes()">Click here to get  attributes value</button>
8. </body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FibIwAcA%2F6%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20funcion%20to%20get%20the%20value%20of%20the%20href,%20hreflang,%20rel,%20taget,%20and%20type%20attributes%20of%20a%20link.)

**5.** Write a JavaScript function to add rows to a table. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head><br><meta charset=utf-8 />
3. <title>Insert row in a table - w3resource</title>
4. </head><body>
5. <table id="sampleTable" border="1">
6. <tr><td>Row1 cell1</td>
7. <td>Row1 cell2</td></tr>
8. <tr><td>Row2 cell1</td>
9. <td>Row2 cell2</td></tr>
10. </table><br>
11. <input type="button" onclick="insert\_Row()" value="Insert row">
12. </body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FafEColUF%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20function%20to%20%20add%20rows%20to%20a%20table.)

**6.** Write a JavaScript function that accept row, column, (to identify a particular cell) and a string to update the content of that cell. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head><br><meta charset=utf-8 />
3. <title>Change the content of a cell</title>
4. </head><body>
5. <table id="myTable" border="1">
6. <tr><td>Row1 cell1</td>
7. <td>Row1 cell2</td></tr>
8. <tr><td>Row2 cell1</td>
9. <td>Row2 cell2</td></tr>
10. <tr><td>Row3 cell1</td>
11. <td>Row3 cell2</td></tr>
12. </table><form>
13. <input type="button" onclick="changeContent()" value="Change content">
14. </form></body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FozaJukOM%2F7%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20function%20that%20accept%20row,%20column,%20%28to%20identify%20a%20particular%20cell%29%20and%20a%20string%20to%20update%20the%20content%20of%20that%20cell.)

**7.** Write a JavaScript function that creates a table, accept row, column numbers from the user, and input row-column number as content (e.g. Row-0 Column-0) of a cell. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html>
3. <head>
4. <meta charset=utf-8 />
5. <title>Change the content of a cell</title>
6. <style type="text/css">
7. body {margin: 30px;}
8. </style>
9. </head><body>
10. <table id="myTable" border="1">
11. </table><form>
12. <input type="button" onclick="createTable()" value="Create the table">
13. </form></body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FozaJukOM%2F9%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20function%20that%20creates%20a%20table,%20accept%20row,%20column%20numbers%20from%20the%20user,%20and%20input%20row-column%20number%20as%20content%20%28e.g.%20Row-0%20Column-0%29%20of%20a%20cell.)

**8.** Write a JavaScript program to remove items from a dropdown list. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head>
3. <meta charset=utf-8 />
4. <title>Remove items from a dropdown list</title>
5. </head><body><form>
6. <select id="colorSelect">
7. <option>Red</option>
8. <option>Green</option>
9. <option>White</option>
10. <option>Black</option>
11. </select>
12. <input type="button" onclick="removecolor()" value="Select and Remove"><br></form></body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FokEpUxaG%2F7%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20remove%20items%20from%20a%20dropdown%20list.)

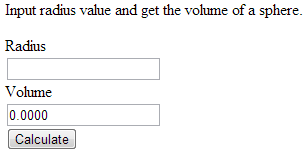
**9.** Write a JavaScript program to count and display the items of a dropdown list, in an alert window. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample HTML file :

[view plainprint?](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)

1. <!DOCTYPE html>
2. <html><head>
3. <meta charset=utf-8 />
4. <style type="text/css">
5. body {margin: 30px;}
6. </style>
7. <title>Count and display items of a dropdown list - w3resource</title>
8. </head><body><form>
9. Select your favorite Color :
10. <select id="mySelect">
11. <option>Red</option>
12. <option>Green</option>
13. <option>Blue</option>
14. <option>White</option>
15. </select>
16. <input type="button" onclick="getOptions()" value="Count and Output all items">
17. </form></body></html>

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FurOZAQiC%2F4%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20count%20and%20display%20the%20items%20of%20a%20dropdown%20list,%20in%20an%20alert%20window.)

**10.** Write a JavaScript program to calculate the volume of a sphere. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
Sample Output of the form :



[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FOmiLEWEv%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20calculate%20the%20volume%20of%20a%20sphere.)

**11.** Write a JavaScript program to display a random image (clicking on a button) from the following list. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
*Sample Image information* :

"http://farm4.staticflickr.com/3691/11268502654\_f28f05966c\_m.jpg", width: "240", height: "160"  
"http://farm1.staticflickr.com/33/45336904\_1aef569b30\_n.jpg", width: "320", height: "195"  
"http://farm6.staticflickr.com/5211/5384592886\_80a512e2c9.jpg", width: "500", height: "343"

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FibIzUhOl%2F6%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20display%20a%20random%20image%20%28clicking%20on%20a%20button%29%20from%20the%20following%20list.)

**12.** Write a JavaScript program to highlight the bold words of the following paragraph, on mouse over a certain link. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)  
*Sample link and text* :  
[[On mouse over here bold words of the following paragraph will be highlighted](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php)]  
**We** have just started **this** section for the users (**beginner** to intermediate) who **want** to work with **various** JavaScript **problems** and write scripts online to **test** their JavaScript **skill**.  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FuJIPULA%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20highlight%20the%20bold%20words%20of%20the%20following%20paragraph,%20on%20mouse%20over%20a%20certain%20link.)

**13.** Write a JavaScript program to get the width and height of the window (any time the window is resized). [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-dom-exercises.php#EDITOR)

## K. Drawing

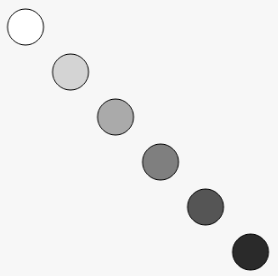
**1.** Write a JavaScript program to draw the following rectangular shape.[Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   
  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FIgAdoCu%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20draw%20the%20following%20rectangular%20shape.)

**2.** Write a JavaScript program to draw a circle.[Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   
  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FEhIVotI%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20%20draw%20a%20circle.)

**3.** Write a JavaScript program to draw two intersecting rectangles, one of which has alpha transparency.[Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   
  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FiQefulEl%2F4%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20%20draw%20two%20intersecting%20rectangles,%20one%20of%20which%20has%20alpha%20transparency.)

**4.** Write a JavaScript program to draw the following right-angled triangle. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   
  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FenINIXAs%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20draw%20the%20following%20right-angled%20triangle.)

**5.** Write a JavaScript program to draw the following diagram [use moveto() function]. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   
  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FONacIkup%2F3%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20draw%20the%20following%20diagram%20%5buse%20moveto%28%29%20finction%5d.)

**6.** Write a JavaScript program to draw the following diagram [diagonal, white to black circles]. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-drawing-exercises.php#EDITOR)  
*Expected Output* :   


## L. Object

**1.** Write a JavaScript program to list the properties of a JavaScript object. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
*Sample object* :   
var student = {   
name : "David Rayy",   
sclass : "VI",   
rollno : 12 };  
*Sample Output* : name,sclass,rollno  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fzevav%2F1%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20list%20the%20properties%20of%20a%20JavaScript%20object.)

**2.** Write a JavaScript program to delete the rollno property from the following object. Also print the object before or after deleting the property. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
*Sample object* :   
var student = {   
name : "David Rayy",   
sclass : "VI",   
rollno : 12 };  
[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FEJOWuXeL%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20delete%20the%20rollno%20property%20from%20the%20following%20object.%20Also%20print%20the%20object%20before%20or%20after%20deleting%20the%20property.)

**3.** Write a JavaScript program to get the length of an JavaScript object. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
*Sample object* :   
var student = {   
name : "David Rayy",   
sclass : "VI",   
rollno : 12 };  [Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fqidof%2F2%2Fembed%3Fhtml%2Cjs%2Coutput&r=Write%20a%20JavaScript%20program%20to%20get%20the%20length%20of%20an%20JavaScript%20object.)

**4.** Write a JavaScript program to display the reading status (i.e. display book name, author name and reading status) of the following books. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)

var library = [

{

title: 'Bill Gates',

author: 'The Road Ahead',

readingStatus: true

},

{

title: 'Steve Jobs',

author: 'Walter Isaacson',

readingStatus: true

},

{

title: 'Mockingjay: The Final Book of The Hunger Games',

author: 'Suzanne Collins',

readingStatus: false

}];

[Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2FUTIsevUc%2F3%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20display%20the%20reading%20status%20%28i.e.%20display%20book%20name,%20author%20name%20and%20reading%20status%29%20of%20the%20following%20books.)

**5.** Write a JavaScript program to get the volume of a Cylinder with four decimal places using object classes. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
*Volume of a cylinder* : V = πr2h  
where r is the radius and h is the height of the cylinder.  [Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fcugemiwo%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20get%20the%20volume%20of%20a%20Cylinder%20using%20object%20classes.)

**6.** Write a Bubble Sort algorithm in JavaScript. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
Note : Bubble sort is a simple sorting algorithm that works by repeatedly stepping through the list to be sorted,  
*Sample Data :* [6,4,0, 3,-2,1]  
*Expected Output :* [-2, 0, 1, 3, 4, 6]  [Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fbunul%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20Bubble%20Sort%20algorithm%20in%20JavaScript.)

**7.** Write a JavaScript program which returns a subset of a string. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
*Sample Data :* dog  
*Expected Output :* ["d", "do", "dog", "o", "og", "g"] [Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Fsidav%2F2%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20which%20returns%20a%20subset%20of%20a%20string.)

**8.** Write a JavaScript program to create a Clock. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
Note : The output will come every second.  
*Expected Console Output :*  
"14:37:42"   
"14:37:43"  
"14:37:44"  
"14:37:45"   
"14:37:46"   
"14:37:47" [----------  
Click me to see the solution](http://www.w3resource.com/javascript-exercises/javascript-solution.php?q=http%3A%2F%2Fjsbin.com%2Ffobuhago%2F1%2Fembed%3Fhtml%2Cjs%2Cconsole&r=Write%20a%20JavaScript%20program%20to%20create%20a%20Clock.)

**9.** Write a JavaScript program to calculate the area and perimeter of a circle. [Go to the editor](http://www.w3resource.com/javascript-exercises/javascript-object-exercises.php#EDITOR)  
Note : Create two methods to calculate the area and perimeter. The radius of the circle will be supplied by the user.