# Web 3 Practical –JavaScript objects

Solve each of the following exercises

1. Using JavaScript, write a function that returns a random integer number between 0 and the n number provided to the function as a parameter. Hint: the methods floor and random in the Math object might be handy to accomplish this task.
2. Write a function that returns an array of length n (n should be provided as a parameter to the function). The array should be populated with random numbers between 0-9. Make sure to use the function created in exercise number 1 to generate the random numbers.
3. Write a function that returns a 2D array with r rows and c columns (r and c provided as parameters to the function). The array should be populated with random numbers. Once again, use the function created in exercise number 1 to generate the random numbers. Use the JavaScript console to check that the created array has the desired dimensions.
4. Using the JavaScript console in your browser carry out the following sequence of tasks:
   1. Find out the 2 different ways to create an array in JavaScript and use either one of them to create an array containing the elements “BMW”, “Mercedes”, “Toyota”, “Ferrari”, “Ford”.
   2. Use a property of the array object just created above to find out the length of the array.
   3. Use a method of the array object to sort the array in alphabetical order
   4. Reverse the order of the array
   5. Use the appropriate method to remove the last element from the array
   6. Use the appropriate method to add again to the end of the array the element you just removed in step e
   7. Use the appropriate method to Remove the first element of the array
   8. Use the appropriate method to add again to the beginning of the array the element you just removed in step g
   9. Convert the content of the array to an string
   10. Using indexes, change the 2nd element of the array to the brand “Mazda”
   11. Inject 2 new elements in the array starting at index 2
   12. Concatenate the array you’re working with to itself
5. Create a Person “class” in JavaScript which has properties: name and age. The “class” should also have a method named talk, which logs to the console the message “hello my name is name and I am age years old”. Instantiate a couple of objects of this “class” and test the functionality of the talk method using the console.
6. Using the in operator, print out to the browser window using the document.writeln() method all the field-value pairs in the object of class Person created in exercise number 5.
7. An important part of your job as a future developer will be to learn on your own about certain features and be able to integrate this new knowledge in your code. This exercise tries to simulate that situation. Spend about 10 minutes reading online about JavaScript prototypes. Modify the “class” in exercise 5, so the method talk uses prototypes to avoid duplicated methods definitions. Make sure you understand the advantages of using the prototype feature in JavaScript.
8. Use JavaScript map() to test whether the numbers on an array are even or not. The array returned by map should contain 0s and 1s, to indicate whether at a given position an element in the original array was even (1) or odd (0).