Emerging Technology Lab

Assignment 3

ES6, Callback Function, Higher Order Array Methods

1. Write an arrow function that will check if a given number is prime or not. If prime the function will return true and false otherwise. Call the function and display messages accordingly.
2. Write a one-liner arrow function (Lambda) that squares a given number.
3. Implement a function **calculate** that takes two numbers and a callback function. The callback function should perform a mathematical operation (e.g., add, subtract, multiply, divide) on the two numbers.
4. Use HTML and JS to display the time (clock) of three different countries.
5. Consider an array of fruits:

   fruits = ["apple", "banana", "orange", "grape", "kiwi"]

   a. Create a function which will take an array and display the array elements. Use this to display the array after each following operation.
   b. Add one fruit to the fruits array
   c. Remove the last fruit item from the array.
   d. Check if the fruits array contains orange.
   e. Sort the fruits in alphabetical order using sort and localeCompare
   f. Make shallow copy of the fruits array.
6. Construct an array of 10 numbers and perform the following operations –
   a. Display the array elements using forEach
   b. Produce a new array by squaring each number of the given array using map
   c. Produce an array with all the even numbers present on the original array using filter
   d. Remove any number from the array using filter
   e. Sort the array in both ascending and descending order and display using sort
7. Consider an array of objects given where each object contains the student's name and age. Perform the following operations using higher order array methods.
   a. Use forEach loop, object de-structuring, and string literals to display the details in the given format.
   b. Find the student with the highest age
   c. Find the average age of the class

   Ex (for a):

Input	**Output**
const students = [{ name: "Amit", age: 23 }, { name: "Sima", age: 21 }, { name: "Bimal", age: 19 },]	Amit is 23 years old Sima is 21 years old Bimal is 19 years old

8. Take any string and form an array of objects where each object contains the word and its length.

Input	Output
"Hello, this is a sample string"	[{ word: 'Hello,', length: 6 }, { word: 'this', length: 4 }, { word: 'is', length: 2 }, { word: 'a', length: 1 }, { word: 'sample', length: 6 }, { word: 'string', length: 6 }]

9. Consider an array consisting of the Employee objects of the following structure and solve the following problem.

   {name: “emp name”, skill: [‘skill1’, ‘skill2’, ‘skill3’], salary: 12345}

   a. Display the name of the employee and the technical skills they have
   b. Display the employee details in sorted order of their name
   c. Find the highest-paid employee
   d. Display all the unique skills available in the company
   e. Find all the employees who know JavaScript.

10. Create a class Person with a constructor that takes name and age as parameters. Add a method getInfo that returns a string with the person's name and age. Implement inheritance by creating a class Student that extends the Person class. Add new properties like roll and grade to the Student class. Implement suitable methods to display student details.

Get time zones: https://stackoverflow.com/questions/38399465/how-to-get-list-of-all-timezones-in-javascript