



Sheet 5

Objective: upon successful completion of this sheet, the students should be able to create functions, handle events with DOM objects, and deal with arrays and strings.

- (1) Write a TypeScript program that contains the `removeRepetitions()` method. The method takes an array of elements and returns the elements that are repeated less than three times.

For example, if the input array contains `[1, 2, 2, 3, 4, 4, 4, 5, 5, 5, 5, 6]`, then the expected output array will be `[1, 2, 3, 6]`.

- (2) Write a TypeScript program that changes the text color to plum and adds a magenta dashed border around emphasized words in a paragraph when the mouse moves over the paragraph. The paragraph should return to its original formatting when the mouse moves out of the paragraph. The provided figures illustrate the functionality of the program.

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- (3) Write a TypeScript program that provides the following HTML elements: a drop-down list of file names with different extensions and check boxes representing types of files. When the user selects a file type, the program should remove all file names from the drop-down list that have the selected file type as their extensions. The form design and the intended behaviour of the program are shown in the provided figures.

N.B. You should use the "change" event on the check box elements and the `options` collection in the `select` element to access the list of options.



- (4) Write a TypeScript program that takes a string and a size as input. The program should then generate an array of strings, each containing parts of the given string with the specified size. For example, if the input string is "HelloWorld!" and the size is 3, then the resulting array will be `["Hel", "loW", "orl", "d!"]`.