Computer Science Division
Department of Mathematics
Faculty of Science

Level 2 - Spring Semester
Course Code: COMP 206
Date: March 16, 2025

Sheet 4

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

(1) Write a TypeScript program that accepts an array of words and returns a new array containing only the words that have no repeated characters. You should make use of the `find()` method in your implementation.

(2) Write a TypeScript program that processes a string input and produces a string output according to the following rule: keep all characters at the odd positions unchanged and swap each two characters at consecutive even positions (i.e., position 0 with 2, position 4 with 6, etc.). For example, if the input string is "abcdefghi", then the expected output should be "cbadgfehi".

(3) Write a TypeScript program that stores entries from text fields into an array of "Student" objects when the user clicks the "Add Student" button. Each student object in the array should have properties for name, age, and GPA. The program should provide a drop-down list to select the sorting order: descending order by GPA or ascending order by name. The program should display the sorted results in a text area. In addition, if the number of students with a GPA less than 2 exceeds 3, then an alert message should be displayed. The form design is shown in the provided figure.
N.B. You should use the "change" event on the <select> HTML tag for handling the sorting order choice.