Test 2

Time: 2:15pm - 3:30pm.
Your answerscripts need to be uploaded within this time, and no extra time will be given.

Questions: No global variables are allowed for the following program and no dynamic memory allocation is allowed:

- Define a structure **Sent** for storing a sentence with at most 10 words. The structure has 10 character arrays, one for each word. The structure also has a boolean variable that can store 0 or 1. If it is set to 0, then this indicates that the remaining information has some error. If it is set to 1, this means that the remaining information is correct. You may keep other information in the structure as well.
  Hint: the longest English word has 45 letters.

- Write a function charArr() that takes as input a string, checks if the string has at most 10 words and returns a pointer to a structure of type Sent, such that

  1. if the string has at most 10 words, each word in the string is stored as a character array in the structure.
  2. if the string has more than 10 words, then the structure returned indicates that the remaining information is garbage.

- Write a function changeSent() that takes as part of input a structure of type Sent and returns the pointer of a new structure of type Sent. This is how the new structure is defined using the input structure:
  Replace each odd positioned word with a string of $*$'s of equal length.

- Write a recursive function changePara() that takes as part of input a pointer to an array of type Sent and makes modifications. What you return will depend on whether you decide to make changes in the input array or in a copy of the input array. You may include other input parameters, in order to set up the recursion or for other purposes. This is how the array is modified:
  Every odd element of the array is changed using changeSent().

- Write a recursive function printPara() that takes as part of input a pointer to an array of type Sent and prints the sentences stored in the array from the leftmost element to the rightmost element.

- Write a main function that takes as input an integer N.
  Populate an array A of length N with sentences, each with at most 10 words.
  If a sentence has more than 10 words point out the error to the user and ask for a new sentence.
  Apply changePara() to the array A. You may create a copy of A and apply the changes.
  Print the sentences in array A and then the sentences after the change.