**Assignment 4 (due date: 11/18/2022)**

In this assignment you will ask to do coding in C using pointers, function, iteration, and arrays (compile and run).

Please submit your assignment into Canvas. Please submit the codes as .c files or copy them all into a single word (.doc or .docx) file but make sure that they are ready to be compiled. It is strongly recommended to write these codes in terms of functions! Please DO NOT submit pdf.

1: Write a function that receives two strings (maximum length of 20 characters) and concatenate them to a new string. You should define strings in the main function as arrays and pass them to “concatenate function” as pointers to manipulate/concatenate them. In other words, the process of concatenation in the concatenate functions should be all done by pointers.

2: ***(Card Shuffling and Dealing Modification)*** In the card shuffling and dealing program of Fig. 7.24, we intentionally used an inefficient shuffling algorithm that introduced the possibility of indefinite postponement. In this problem, you’ll create a high-performance shuffling algorithm that avoids indefinite postponement.

Modify the program of Fig. 7.24 as follows. Begin by initializing the deck array as shown in Fig. 1 (below). Modify the shuffle function to loop row-by-row and column-by-column through the array, touching every element once. Each element should be swapped with a randomly selected element of the array. Print the resulting array to determine whether the deck is satisfactorily shuffled (as in Fig. 2 (below), for example). You may want your program to call the shuffle function several times to ensure a satisfactory shuffle.



Figure 1



­Figure 2