CS483 – Lesson 04 strtok() and char pointer arrays in C

Before you Begin

1. Create a new CLion project called L04. In this project create the files lsn04Main.c, lsn04Functs.c, lsn04Functs.h.

Example

1. **printToks():** Create a function prototype (declaration) for a function named printToks() in your lsn04_functs.h header file. This function takes a pointer to a string as input and returns nothing.   Use strtok() to break the string into tokens printing each to the console on per line.   Implement (define) this function in your lsn04_functs.c file. In main(), use fgets() to get a string from the user. Call printToks() with this string after overwriting the '\n' character with the terminator.

Exercises

1. **storeToks ():** Our printToks() function doesn't store the tokens it finds and even modifies the input string in the process. Create a function prototype (declaration) for a function named storeToks() in your lsn04_functs.h header file. This function takes a pointer to a string as input and returns a pointer to an array of character pointers (a pointer to an array of strings). In your function, use strtok() to find the tokens in this string. When a token is found allocate space for it using strdup() and store the pointer to the allocated space in the char pointer array (array of strings). You should also handle in some way tracking the end of the array of tokens and/or the number of token found. In main(), use fgets() to get a string from the user. Call storeToks() with this string after overwriting the '\n' character with the terminator.

2. **printStoredToks():** Create a function prototype (declaration) for a function named printStoredToks() in your lsn04_functs.h header file. This function takes a pointer to an array of strings (pointer to an array of pointers to characters) as input and returns nothing. In your function, use iteration to print the tokens as stored in the array of strings (array of pointers to an array of characters).

3. **deallocateToks():** Create a function prototype (declaration) for a function named deallocateToks() in your lsn04_functs.h header file. This function takes a pointer to an array of character pointers (a pointer to an array of strings). In your function, deallocate each of the strings pointed to by the array elements and then deallocate the array.

Challenge Exercises

1. None