COMP 8567
Summer 2023
Lab 9
Shell Programming + Threads (Basics)

Part A

Write a shell script lab9a.sh that could possibly receive the names of up to **5 text files** (in the PWD) as its input parameters. You have to use an until loop to concatenate the contents of all the text files in the serial order and store the final result in output.txt

If a wrong file name (inexistent text file) or a wrong extension (other than .txt) is entered in the command line, the script must output an appropriate message and exit.

Sample Runs:
$ ./lab9a.sh f1.txt f2.txt f3.txt must concatenate the contents of f1,f2 and f3 in that order and store the results in output.txt (if all the text files exist in the PWD, otherwise output a suitable message and exit)
$ ./lab9a.sh f1.c f2.txt //must output an error(not a .txt file) and exit
$ ./lab9a.sh //must output an error (no input files) and exit

Part B

- In the main thread, declare three arrays ia1,ia2 and ia3 of 100 elements each and initialize the elements of each array with random integers between (10 and 20)
- Create three thread functions sum_1, sum_2 and sum_3 (these functions should return void * and accept one argument (void *)
    - Create three threads in main using pthread_create() using functions sum_1, sum2 and sum_3 and pass arrays ia1,ia2 and ia3 to sum_1, sum_2 and sum_3 respectively.
    - Perform the addition of the array elements in the respective thread functions and return the results to the main thread that uses sum1, sum2 and sum3 to obtain the return value (Note: You need to make use of pthread_exit() and pthread_join() as required)
    - Print the sum of all the elements (of all the three arrays) using the return values from the thread

Submission:
- lab9a.zip (lab9a.sh, output.txt)
- lab9a.txt
- lab9b.c
- lab9b.txt