This is individual coursework. Time: 3 Hours

You may use any function from any header file available with c-compliers C11 and newer (there is no limitations).

Expectations: each expression/statement has proper comment(s) to explain it.
Use the minimum efforts to achieve the desired results.

Submit in one text file
StudentID_code.txt (replace student id with your own student id number, put your codes in that .txt file, should be separated with question no).

Late submission: In case you face problem in uploading at Moodle, email me code file (.txt) no later than 1 minute delay (10:01 PM), and then upload it on Moodle within 15 minutes (10:15 PM).
Failing to email me the code till 10:01 PM, first 5 minutes delay (10:05 PM), -1 mark and then every 1-minute delay, 1 more mark will be deducted.

There will be no compromise on any kind of cheating or plagiarism or collusion. This is an individual coursework.

Q1. Write a program which ask for the following and store them in three array to char (as a string), use appropriate allocation of elements. marks: 18

i. Full Name
ii. Student ID
iii. Telephone No in the form of, for example (0060) 11-123456

a) Write a function which receives the Full Name as pointer to array (char *), without changing the original array, only converts to display (to print) i) full name as capitalized letters, ii) full name as small letters.
b) Write a function which receives the Full Name as pointer to array (char *) and calculate the occurrence of first two letters in the string (full name) and display the output (upper-case and lower-case letters are counted together).
c) Write a function which receives the Full Name as pointer to array (char *) calculate the length of the string and display.
d) Write a function which receives the Full Name as pointer to array (char *) change occurrence of first letter with the last letter in the string. For example: `Yasir Hafeez`, so the output would be `Zasir Hafeez`.
e) Write a function which takes Student ID as pointer to array (char *) and converts it into integers, Note: student Id may contain alphabets alongwith numbers, only display the numbers as integers and then add all of the extracted integers to find the sum.
f) Write a function which receives telephone no. as char *, extract first four digits as country code, next 2 digits as city code, and last 6 digits as telephone number.
    i) Display the country code, city code and telephone number.

ii) Consider last six digits (telephone number) as ASCII, display them as alphabets or any character, take it as pair, for example 65 is A.

Q2. Write a program that inputs words of text (200 characters) and store in array (string). For this string: marks: 12

a) Write a function which receives the pointer to array and the count the total number of words. Assume that the words are separated either by spaces or newline characters.
b) Write a function which receives the pointer to array, replace the first half of the string with next half without changing the original string and display the original and changed line of text.
c) Write a function which receives the pointer to array (char *).
    i) Split text (the string) it into half, compare first half of the string with 2nd half, display the lesser half string and larger half string (if any).
    ii) Display the original string, the length and size of original and both half(s)
    iii) Append six times A at the end of first half and then display the first half in reverse.

Each Question should be separated by the question number and a line ++++++++++++++++++++

Code File: must include the following line at the start

/* NAME: <> Student ID: <> */

#include ……..

Evaluation will be based on:

1. **Correctness/structure of your program**
2. **Display a menu for each question to call different functions (.5 + .5 marks for each question)**
3. **Comments with proper explanation of each expression**

You have 180 minutes to submit on Moodle:
Release time and date: 19:00 1st-December-2022
Submission time and date: 22:00 1st-December-2022