COMP10120 In-Lab Assessment

Please read the question carefully. Name your final program based on your student number (e.g. 1234567.c where your student number replaces 1234567. Please also include a readme.txt file which says which compiler you used to test your implementation and any instructions needed. The zipped file must be submitted via Moodle for grading. All files that you are submitting can be zipped into a single file called 1234567.zip, where 1234567 is your student number.

Please ensure that you leave ample time to submit your programme before the end of the test time.

Murray's Crazy Cars is car sales company located in Belfield, Dublin. It has a team of 5 sales people. Murray has asked you to design a computer program which will allow the company to **record and produce** monthly statistics about cars sales. Murray wants to use a file based system to manage this data as the company cannot invest in a database. Currently, Murray uses a manual document editor to record information but as the volume of sales is growing, this is becoming less feasible. Murray needs you to write a C computer program to manage this for the company. Murray has provided a sample of the files that the company keeps (**MarchSales.txt**) and would like to maintain this format so that the program you write will work with legacy files.

The columns in the sample file (**MarchSales.txt)** are:

record id (int)	licence plate (string)	Make (string)	Model (string)	Shape (string)	Colour (string)	Mileage (string)	cost price (int)	price sold (int)	sales person id (int)
1	151D32190	AUDI	A4	Saloon	Grey	156041	20000	25000	1

Murray wants the following functionality:

1. Ability to add records to the file as sales occur
2. Ability to produce the following statistics from the file:
   - Total Number of cars sold.
   - Total Number of cars sold for a given colour.
   - Total Number of cars sold for a given sales person.
   - The record id of the highest mileage car.
   - The record id of the newest car sold (licence plates are sequential with new cars having a higher registration e.g. 171 D 5236 is newer than 171 D 563 and 151 D 5623).
   - The record id of the vehicle with the largest profit (profit = price sold – cost price).
   - The total profit for the sales recorded in the file.
   - The average profit on the cars sold.
   - The sales person id of the sales person with the biggest total profit from all their sales.

The program should be a **number-based menu driven system**, where the user is prompted for the **function**ality they wish to use. You should write efficient code and demonstrate what you have learned in COMP10120. If you are copying and pasting a lot of code consider a better way to reuse it (in helper functions maybe).

A file containing details about how to use String Compare (strcmp) is included on Moodle as you might need to use this function.