CT103: Week 19 Lab Session (20/02/2024)

*Note: This assignment will count towards your final grade. Make sure you submit your solution by following the "**Submission Instructions**" at the end of this document. You have **until midnight tonight to submit your solution on Canvas**.*

Late assignment submissions will receive a penalty.

Please make sure you **write comments** explaining what your code does. Start your C program with a **comment stating your; Name, Student ID and Date**.

You are given the following C Code:

```
typedef struct {
	char make[20];
	char model[20];
	int year;
}car;

car garage[10];

void readCars(char myfilePath[], int numCars);
void displayGarage(int numCars);
int checkYear(int numCars, int year);

void main() {
	FILE* fptr;

	char myfilePath[] = "C:\\Users\\Karl\\Desktop\\carsYear.csv";
	readCars(myfilePath, 10);
	displayGarage(10);
	int ans = checkYear(10, 2016);
	printf("There are %d cars with year %d in the garage.\n",ans,2016);
}
```

Finish this C program by writing the missing functions based on the function prototypes given. Include screenshots showing your code working.

1. `void readCars(char myfilePath[], int numCars);` **[40 marks]**
   a. Write a function to read in the car data from the .csv file provided and store it in the array "garage".

2. `void displayGarage(int numCars);` **[30 marks]**
   a. Write a function to display all of the cars stored in "garage".

3. `int checkYear(int numCars, int year);` **[30 marks]**
   a. Write a function to count how many cars in the garage are from a specific year, e.g. 2016.

Your program should output something similar to the following screenshot. You must **upload a screenshot** showing your program working.

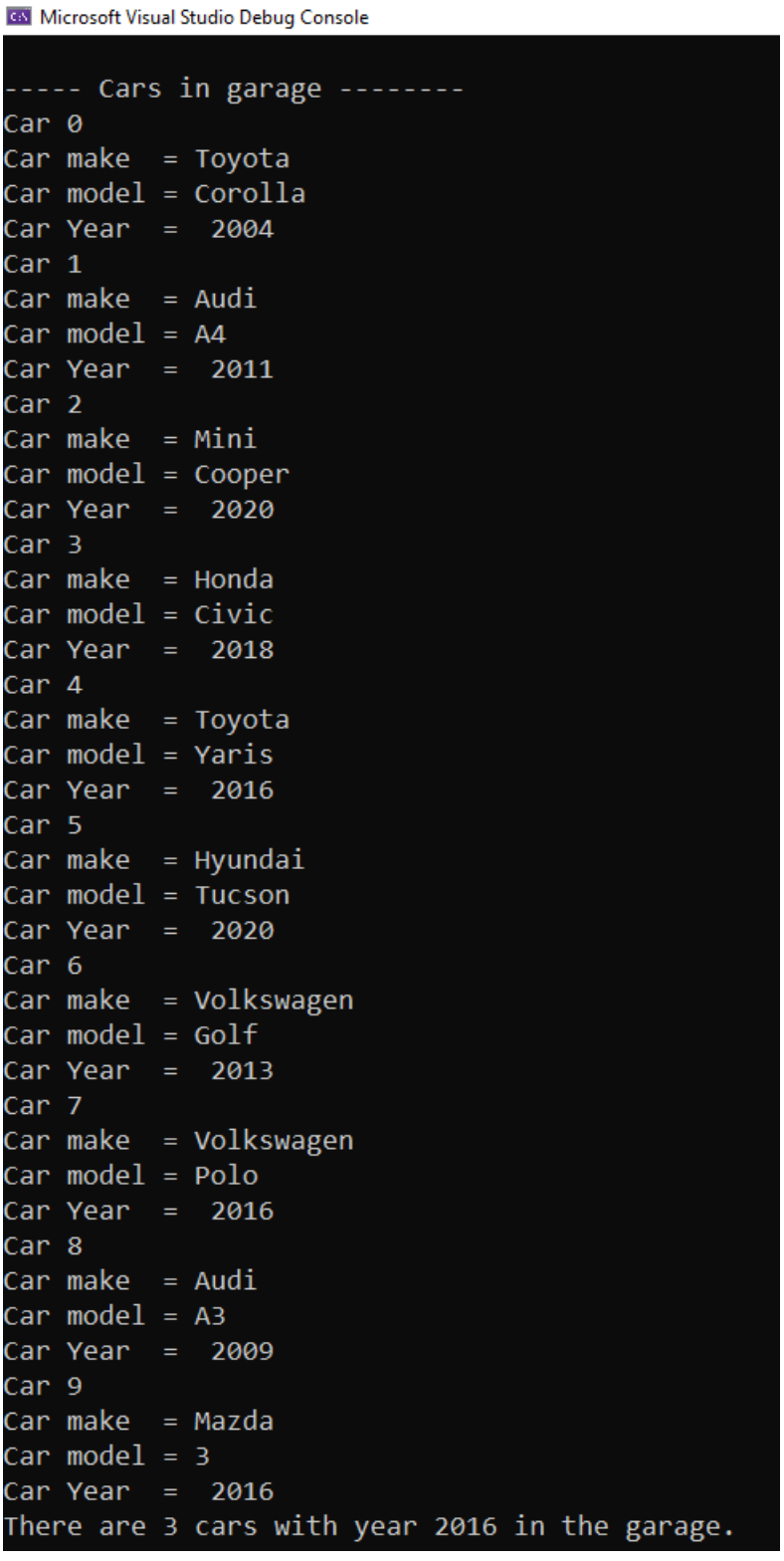

Figure 1: Code Output

Plagiarism Notice:

A definition of plagiarism is passing off the work of another personas one's own.
You are allowed to ask the lab tutors for help, collaborate with your classmates and review online and print resources for high-level problem solving and background research. You are each expected to complete this assignment individually. This means that every line of code and comment in your submission should be written by you alone. Please see the University of Galway Code of Practice for Dealing with Plagiarism for further information on plagiarism:
https://www.universityofgalway.ie/media/registrar/policiesmay2023/QA220-Academic-Integrity-Policy-v2.0-Sept-2023.pdf
Plagiarism is a serious academic offence and may lead to a loss of some or all marks and/or disciplinary proceedings if it is detected in any of your submissions. Students who facilitate others to copy their work are also subject to plagiarism sanctions (including loss of marks), so you should not share your assignment solutions with classmates.

Submission Instructions:

Please do the following to submit your solutions to the assignment.

- Copy and paste your code into a word document labelled 'AssignmentX_YOURNAME_ID.doc', e.g. 'Assignment7_JoeBloggs_123456789.doc'.

- Make sure to **include screenshots of your code working** in the .doc file. Use: 'Windows' + 'Shift' + 'S' on your keyboard. On a Mac, you should use the keys: 'shift' + 'command' + '3' or 'shift' + 'command' + '4'.

- Add both: **your .c program and your .doc files** to a folder called 'AssignmentX_YOURNAME_ID_Submission'.

- Zip the folder up and **submit the .zip file on Canvas** under CT103 Assessments. To zip the folder, right click and press 'Send To' then 'Compressed (zipped) folder'. On Mac, right click the folder and press 'Compress'.

- If for some reason you still cannot access Canvas. Send your .zip folder to the lab instructors by email. They will be available for the duration of the lab.