

OBJECTIVE : Structure and Pointer Operations

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Use **POINTER** notation instead of **SUBSCRIPT** notation!

The %s operator is one used for reading strings of characters in to character arrays using the scanf function.

Tips: %s reads one word at a time, to read, for instance, a number of words until new line, use %[^\n] operator; or for reading a number of words until a number has been found, use %[^0-9].

Q1.

Write a C program that will keep the *type*, *model*, and *price* information about second hand cars. Your program should input the information from a file named **cars.txt** into a structure array with the maximum size **10**. The program displays a menu, reads the user's choice until user selects EXIT option, and outputs the appropriate result according to the chosen menu option to the screen as in the example run.

Write the function **menu** that displays a menu, reads and returns the user's choice.

NOTICE: Do NOT forget to make data validations!

Example Run:

According to:

- 1.Type
- 2.Model
- 3.Price range
- 4.EXIT

Enter your choice: 7

Enter your choice: 1

Enter a type (P:Peugeot,M:Mercedes,H:Honda): K

Enter a type (P:Peugeot,M:Mercedes,H:Honda): M

Mercedes 2010 85000

Mercedes 2011 95000

According to:

- 1.Type
- 2.Model
- 3.Price range
- 4.EXIT

Enter your choice: 2

Enter a model year: 2016

Peugeot 2016 75000

Honda 2016 80000

According to:

- 1.Type
- 2.Model
- 3.Price range
- 4.EXIT

Enter your choice: 3

Enter a price range: 80000 100000

Honda 2016 80000

Mercedes 2010 85000

Mercedes 2011 95000

According to:

- 1.Type
- 2.Model
- 3.Price range
- 4.EXIT

Enter your choice: 4

cars.txt

```
Peugeot 2016 75000
Honda 2016 80000
Mercedes 2010 85000
Peugeot 2017 72000
Honda 2012 71000
Mercedes 2011 95000
```

Q2.

Create the structure **movie_t** with the following fields.

```
typedef struct{
    char movieName[25];
    double imdbScore;
} movie_t;
```

- a) Create a structure then initialize the data with following values, and then display as shown in the example run.

Project Name: LG2_Question2

File Name: Q2a.cpp

- b) Get the structure data from the user, and then display as shown in the example run.

Project Name: LG2_Question2

File Name: Q2b.cpp

- c) Use Pointer notation for part a.

Example Run for a and c:

The movie information is:

Movie Name : The Lord of The Rings The Fellowship of The Ring

Movie's IMDB Score is: 8.8

Example Run for b:

Please enter the information of the movie:

Enter Movie Name : The Hitchhiker's Guide To The Galaxy

Enter Movie's IMDB Score: 7.2

The movie information is:

Movie Name : The Hitchhiker's Guide To The Galaxy

Movie's IMDB Score is: 7.2

Project Name: LG2_Question2

File Name: Q2c.cpp

- d) Rewrite the program so that it will read information of the movie from the **movies.txt** file, store them into an array of structure, and display the number of products and the information of all hospitals. Use dynamic memory allocation for the array.

Example Run:

There are 3 movies

The Movies Information:

Movie Name : Black Panther

Movie's IMDB Score is : 8.4

Movie Name : Pulp Fiction

Movie's IMDB Score is : 8.9

Movie Name : The Post

Movie's IMDB Score is : 8.5

movies.txt

```
3
8.4 Black Panther
8.9 Pulp Fiction
8.5 The Post
```

Project Name: LG2_Question2

File Name: Q2d.cpp