LAB 11-12: User Defined Data Types

1. Scope of Knowledge:

- Structure definition
- Access the elements of the structure
- Working with struct
- Pointers and structures

2. Marterials/Softwares/Tools:

- Visual Studio Code

3. Coding Convention:

- All identifiers must be in English and lower case
- Follow the valid identifers naming rules in C
- Tab is 4 characters
- Curly braces must be aligned
- Statements in curly brackets must be indented by 1 tab

4. Exercise:

Exercise 1:

Definition of the structure to save the score of a subject as follows:

```
struct Mark {
    char subject[50]; // store the subject name
    double theoreticaltest; // store the theoretical test scores
    double practicaltest; // store the practical test scores
};
```

Write a program to do the following:

- Enter mark information for certain subjects

- Display the mark information for each subject

Exercise 2:

Build a structure to store information about a product: Product Name, Quantity and Selling Price. Write a program that allows to enter 5 products and display the results in an ordered list of products (in table format, each column stores a product's field).

Exercise 3:

Create a Book structure (isbn, title, author, price) and then write a program with functions as following menu:

```
================================
Bookstore Demo
================================
1. Insert Book
2. Search Book By ISBN
3. Delete Book By ISBN
4. Sort Books List
5. Display All Books
6. Exit
================================
Enter Choice:
```

The menu will run forever for the user to enter options until the exit option is pressed.

Hint: Use array to store all Book elements.

Exercise 4:

Write a program with above functions in exercise 3. However, you must use pointer and dynamic memory allocation to store all Book elements.