LAB 06: Functions

1. Scope of Knowledge:

> ➢ Understand the concept and structure of functions
>
> ➢ Define functions and declare function prototypes
>
> ➢ Call the function

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:

Write a function body for the function prototype int power(int a, int n) that returns an (don't use the pow function in the <math.h> library). Then write a program to input from the keyboard two integers a and n using the function just written to print the result an.

Exercise 2:

Write a function body for the following function prototypes:

- int inputNumber(); // This function lets you input an integer from the keyboard and returns the integer you just entered.

- int checkNumber(int num); // This function checks that an integer is prime, it returns 1 and it's not, and it returns 0.

Write a program to input 6 numbers from the keyboard and print out all prime numbers.

Exercise 3:

Write a function body for the following function prototype: int fibonacci(int n); Returns the number at the nth position in the fibonacci sequence.

Exercise 4:

Write a function that does the following:

- Display following menu:

```
+-------------------------------------------------+
|                     MENU                        |
+-------------------------------------------------+
| 1. Menu 1                                       |
| 2. Menu 2                                       |
| 3. Menu 3                                       |
| 4. Menu 4                                       |
| 5. Exit                                         |
+-------------------------------------------------+
         Please choose:
```

- Input option from keyboard

- If input invalid options (number not in [1 - 5]), you must input again:

```
+-------------------------------------------------+
|                     MENU                        |
+-------------------------------------------------+
| 1. Menu 1                                       |
| 2. Menu 2                                       |
| 3. Menu 3                                       |
| 4. Menu 4                                       |
| 5. Exit                                         |
+-------------------------------------------------+
         Please choose: 7
Entered incorrectly, re-enter: a
Entered incorrectly, re-enter: 9
Entered incorrectly, re-enter:
```

- If choose correct optin, function will return option number value (option in [1 - 5]).

Write a program that uses the above function to display the menu and select the menu as follows:

```
+---------------------------------------------------------------+
|                            MENU                               |
+---------------------------------------------------------------+
| 1. Menu 1                                                     |
| 2. Menu 2                                                     |
| 3. Menu 3                                                     |
| 4. Menu 4                                                     |
| 5. Exit                                                       |
+---------------------------------------------------------------+
             Please choose: 2
doing menu 2...
```

Until you choose 5, exit the program.