➢ 1st Homework

- Overview

➢ **Released date**: 9/19 (Mon.)
➢ **Due date**: 9/26 (Mon.)
➢ **Where to submit**: to e-class (http://eclass.seoultech.ac.kr)
  - Late submission is not allowed.
➢ **Assigned score**: 1.5 points

1. Modify Example #1

- Make 10 elements
- Insert YOUR STUDENT ID in 5-th elements
- Submission: capture the output to show YOUR STUDENT ID

Example #1

■ **Program to insert an element in an Array**

```c
#include<stdio.h>

int main()
{
    printf("\n\n\t\tStudytonight - Best place to learn\n\n\n");
    int array[100], position, c, n, value;

    printf("\n\nEnter number of elements in array:");
    scanf("%d", &n);

    printf("\n\nEnter %d elements\n", n);
    for(c = 0; c < n; c++)
        scanf("%d", &array[c]);

    printf("\n\nEnter the location where you want to insert new element:  ");
    scanf("%d", &position);

    printf("\n\nEnter the value to insert: ");
    scanf("%d", &value);

    // shifting the elements from (position to n) to right
    for(c = n-1; c >= position-1; c--)
        array[c+1] = array[c];

    array[position - 1] = value;    // inserting the given value

    printf("\n\nResultant array is: ");
    /*
        the array size gets increased by 1
        after insertion of the element
    */
    for(c = 0; c <= n; c++)
        printf("%d  ", array[c]);

    printf("\n\n\t\t\tCoding is Fun !\n\n\n");
    return 0;
}
```

Output:

```
Enter 5 elements
3
4
5
6
7

Enter the location where you want to insert an element :  3

Enter the value to insert :  77

Resultant array is : 3  4  77  5  6  7

                     Coding is Fun !


Process returned 0 (0x0)   execution time : 13.550 s
Press any key to continue.
```

2. Modify Example #2
   - Change while-loop into for-loop
   - Submission: capture the source code

Example #2

Program to print the Fibonacci Series

```c
#include <stdio.h>
void fibonacci (int num);
void main()
{
        int num = 0;

        printf("Enter number of terms: ");
        scanf("%d", &num);
        fibonacci(num);
}


void fibonacci (int num)
{
        int a, b, c, i = 3;
        a = 0;
        b = 1;

        if (num == 1)
        {
                printf("%d", a);
        }

        if (num >= 2)
        {
                printf("%d\t%d", a, b);
        }

        while ( i <= num)
        {
                c = a + b;
                printf("\t%d", c);
                a = b;
                b = c;
                i++;
        }
}
```

OUTPUT:

```
Enter number of terms 6
0 1     1       2       3       5
```

3. Modify Example #3
    - Add one more element in the array whose value is YOUR STUDENT ID
    - Print four elements in the array including YOUR STUDENT ID
    - Submission: capture the output to show YOUR STUDENT ID

Example #3

Accessing array elements by incrementing a Pointer

```c
#include <stdio.h>

const int MAX = 3;  // Global declaration
int main()
{
    printf("\n\n\t\tStudytonight - Best place to learn\n\n\n");
    int var[] = {100, 200, 300};
    int i, *ptr;

    /*
        storing address of the first element
        of the array in pointer variable
    */
    ptr = var;

    for(i = 0; i < MAX; i++)
    {
        printf("\n\n\nAddress of var[%d] = %x ", i, ptr);
        printf("\nValue of var[%d] = %d ", i, *ptr);

       // move to the next location
        ptr++;
    }
    printf("\n\n\t\t\tCoding is Fun !\n\n\n");
    return 0;
}
```

```
Address of var[0] = 28feec
Value of var[0] = 100

Address of var[1] = 28fef0
Value of var[1] = 200

Address of var[2] = 28fef4
Value of var[2] = 300

                        Coding is Fun !
```