Objectives:

- C++ Programming Pointers, Pointers Arithmetics, Arrays

- C++ File name is **StudentID_HW3_qNO.cpp**
- Note: Write comments in your code for explaining steps.
- Note: Pay attention to the indentations in your code.
- Everyone should do it **alone**.
- Please do not cheat.

Question 1: A is a two-dimensional array with dimensions of 3x5. Figure 1 shows the representative representation of array A. In Figure 1, there is a number in each box. These numbers show both the number of that box and the value it contains.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

Figure 1. A two-dimensional array

By using the A array given in this assignment, you must perform the operations described below:

- **void print_without_pointer (variable):** This function will be called from main and will print each index, value and address of array A to the screen without using pointer. You are expected to write the appropriate values in the fields indicated in red. **Sample output:**

```
Print Without Pointer
Element at x[0][0]: 1 Address: 0x6dfe50
Element at x[0][1]: 2 Address: 0x6dfe54
Element at x[0][2]: 3 Address: 0x6dfe58
Element at x[0][3]: 4 Address: 0x6dfe5c
Element at x[0][4]: 5 Address: 0x6dfe60
Element at x[1][0]: 6 Address: 0x6dfe64
Element at x[1][1]: 7 Address: 0x6dfe68
Element at x[1][2]: 8 Address: 0x6dfe6c
Element at x[1][3]: 9 Address: 0x6dfe70
Element at x[1][4]: 10 Address: 0x6dfe74
Element at x[2][0]: 11 Address: 0x6dfe78
Element at x[2][1]: 12 Address: 0x6dfe7c
Element at x[2][2]: 13 Address: 0x6dfe80
Element at x[2][3]: 14 Address: 0x6dfe84
Element at x[2][4]: 15 Address: 0x6dfe88
```

- **void print_with_pointer(variable):** This function will be called from main and will print each index, value and address of array A to the screen with using pointer. You are expected to write the appropriate values in the fields indicated in red. **Sample output:**

```
Print With Pointer
Element at x[0][0]: 1 Address: 0x6dfe50
Element at x[0][1]: 2 Address: 0x6dfe54
Element at x[0][2]: 3 Address: 0x6dfe58
Element at x[0][3]: 4 Address: 0x6dfe5c
Element at x[0][4]: 5 Address: 0x6dfe60
Element at x[1][0]: 6 Address: 0x6dfe64
Element at x[1][1]: 7 Address: 0x6dfe68
Element at x[1][2]: 8 Address: 0x6dfe6c
Element at x[1][3]: 9 Address: 0x6dfe70
Element at x[1][4]: 10 Address: 0x6dfe74
Element at x[2][0]: 11 Address: 0x6dfe78
Element at x[2][1]: 12 Address: 0x6dfe7c
Element at x[2][2]: 13 Address: 0x6dfe80
Element at x[2][3]: 14 Address: 0x6dfe84
Element at x[2][4]: 15 Address: 0x6dfe88
```

- **void print_with_pointer2(variable):** This function will be called from main and will print each index, value, and address of array A to the screen with using pointer and **only one for loop**. You are expected to write the appropriate values in the fields indicated in red. **Sample output:**

```
Print With Pointer and One For Loop
Elements in x: 1 Address: 0x6dfe50
Elements in x: 2 Address: 0x6dfe54
Elements in x: 3 Address: 0x6dfe58
Elements in x: 4 Address: 0x6dfe5c
Elements in x: 5 Address: 0x6dfe60
Elements in x: 6 Address: 0x6dfe64
Elements in x: 7 Address: 0x6dfe68
Elements in x: 8 Address: 0x6dfe6c
Elements in x: 9 Address: 0x6dfe70
Elements in x: 10 Address: 0x6dfe74
Elements in x: 11 Address: 0x6dfe78
Elements in x: 12 Address: 0x6dfe7c
Elements in x: 13 Address: 0x6dfe80
Elements in x: 14 Address: 0x6dfe84
Elements in x: 15 Address: 0x6dfe88
```

- **void change_odd(variable):** This function will be called from main and will change the values of the odd box numbers of array A to zero with using pointer. Then, one of the functions used to print the A array to the screen will be called from the main and the A array will be printed to the screen. You are expected to write the appropriate values in the fields indicated in red. **Sample output:**

```
Change Odd Boxes Name with Value 0
Print After Change
Elements in x: 0 Address: 0x6dfe50
Elements in x: 2 Address: 0x6dfe54
Elements in x: 0 Address: 0x6dfe58
Elements in x: 4 Address: 0x6dfe5c
Elements in x: 0 Address: 0x6dfe60
Elements in x: 6 Address: 0x6dfe64
Elements in x: 0 Address: 0x6dfe68
Elements in x: 8 Address: 0x6dfe6c
Elements in x: 0 Address: 0x6dfe70
Elements in x: 10 Address: 0x6dfe74
Elements in x: 0 Address: 0x6dfe78
Elements in x: 12 Address: 0x6dfe7c
Elements in x: 0 Address: 0x6dfe80
Elements in x: 14 Address: 0x6dfe84
Elements in x: 0 Address: 0x6dfe88
```

- **void change_even(variable): ** This function will be called from main and will change the values of the even box numbers of array A to one with using pointer. Then, one of the functions used to print the A array to the screen will be called from the main and the A array will be printed to the screen. You are expected to write the appropriate values in the fields indicated in red. **Sample output:**

```
Print After Change
Elements in x: 0 Address: 0x6dfe50
Elements in x: 1 Address: 0x6dfe54
Elements in x: 0 Address: 0x6dfe58
Elements in x: 1 Address: 0x6dfe5c
Elements in x: 0 Address: 0x6dfe60
Elements in x: 1 Address: 0x6dfe64
Elements in x: 0 Address: 0x6dfe68
Elements in x: 1 Address: 0x6dfe6c
Elements in x: 0 Address: 0x6dfe70
Elements in x: 1 Address: 0x6dfe74
Elements in x: 0 Address: 0x6dfe78
Elements in x: 1 Address: 0x6dfe7c
Elements in x: 0 Address: 0x6dfe80
Elements in x: 1 Address: 0x6dfe84
Elements in x: 0 Address: 0x6dfe88
```