Lab 3 - Magic Box

```c
#include <stdlib.h>
#include<windows.h>
#include <time.h>
void gotoxy( x, y);
int main()
{
    int size = 0;

    printf("Enter the  an odd size of the box: ");
    scanf("%d", &size);

    if( size % 2 ==0 )
    {
        while(size % 2 ==0)
        {
            printf("Please Enter a valid \"odd\" number:");
            scanf("%d", &size);
        }
    }
    system("cls");
    printf("Magic Square with size %d", size);

    int row =1;
    int col =(size+1)/ 2 ;
    int value=1;

    for(int i = 0 ; i< size*size ; i++)
    {
        gotoxy(col*4,row);
        sleep(1);
        printf("%4d", value);

        if(0 == value % size )
        {
            row++ ;
        }
        else
        {
            row--;
            col--;
        }
        if(0 == row)
        {
            row = size ;
        }
        if( 0 == col)
        {
            col = size;
        }
        value ++ ;
    }

    return 0;
}
```

```
"H:\3) C\Labs\Lab_2\magic_box\bin\Debug\magic_box.exe"
Magic Square with size 3
       6   1   8
       7   5   3
       2   9   4
Process returned 0 (0x0)   execution time : 21.201 s
Press any key to continue.
```

Lab 3 – Question 2

```c
#define SIZE 50
int main()
{
    int arr[SIZE] = {0};
    int actual_size;

    printf("Please, Enter the array size between 1 and %d: ", SIZE );
    scanf("%d", &actual_size);

    while(actual_size < 0 || actual_size > SIZE){
        printf("Invalid array size. \n");
        printf("Please, Enter the array size between 1 and %d: ", SIZE );
        scanf("%d", &actual_size);

    }
    // Take the array elements from the user
    printf("Enter %d array elements separated by space: ", actual_size);
    for (int i = 0; i < actual_size; i++){
        scanf("%d", &arr[i]);
    }
    // Print the array elements
    printf("Your array is: ");
    for (int i = 0; i < actual_size - 1; i++){
        printf("%d, ", arr[i]);
    }
    printf("%d.", arr[actual_size - 1]); //  to solve the last "," in the array ==> 1, 2, XXX
    printf("\n");
    return 0;
}
```

```
"H:\3) C\Labs\Lab_3\Lab3_Task3\bin\Debug\Lab3_Task3.exe"
Invalid array size.
Please, Enter the array size between 1 and 50: 3
Enter 3 array elements separated by space: 1 5 7
Your array is: 1, 5, 7.

Process returned 0 (0x0)   execution time : 11.856 s
Press any key to continue.
```

Lab 3 – Question 3

```c
#include <stdio.h>
#include <stdlib.h>
#define SIZE 10

int main() {
    int arr[SIZE] = {-1, 2, 4, 7, 100, 4, 0, -3, -9, 10};
    int max = arr[0];
    int min = arr[0];

    for (int i = 1; i < SIZE; i++) {
        if (arr[i] > max) {
            max = arr[i];
        } else if (arr[i] < min) {
            min = arr[i];
        }
    }

    printf("In this Array: ");
    for(int i = 0 ;i< SIZE ;i++){
        printf("%d, " , arr[i]);
    }
    printf("\n");
    printf("Max Number is: %d\n", max);
    printf("Min Number is: %d", min);

    return 0;
}
```

```
"H:\3) C\Labs\Lab_3\Lab3_Task2\bin\Debug\Lab3_Task2.exe"
In this Array: -1, 2, 4, 7, 100, 4, 0, -3, -9, 10,
Max Number is: 100
Min Number is: -9
Process returned 0 (0x0)   execution time : 0.015 s
Press any key to continue.
```