מטלה 6 – מערך חד ממדי

שם: איתי חסיד
ת.ז: 316166636

==שאלה 1==

```c
#define SIZE 10
#include <stdio.h>
int main()
{
    double arr[SIZE], sum = 0, avg = 0;
    int count = 0;
    printf("Please insert %d grades:\n", SIZE);
    for (int i = 0; i < SIZE; i++)
    {
        scanf("%lf", &arr[i]);
    }
    for (int i = 0; i < SIZE; i++)
    {
        sum += arr[i];
    }
    avg = sum / SIZE;
    for (int i = 0; i < SIZE; i++)
    {
        if(arr[i] < avg)
        {
            count++;
        }
    }
    printf("%d trainers run less the from the average
    time which is %.2lf\n", count, avg);
}
```

```
Please insert 10 grades:
4.5
4.2
4.2
4.5
4.6
4.6
4.5
4.2
4.6
4.1
4 trainers run less the from the average time which is 4.40
Program ended with exit code: 0
```

```c
#define SIZE 8
#include <stdio.h>
int main()
{
    int numbers[SIZE], check = 0, temp;
    printf("Please insert %d numbers:\n", SIZE);
    for (int i = 0; i < SIZE; i++)
    {
        scanf("%d", &numbers[i]);
    }
    for (int i = 0; i < SIZE-1; i++)
    {
        if (numbers[i] < numbers[i + 1])
        {
            check = 1;
        }
        else
        {
            check = 0;
            break;
        }
    }
    if (check == 0)
    {
        printf("The array is not sorted\n");
        for (int i = 0; i < SIZE; i++)
        {
            printf("%d", numbers[i]);
        }
    }
    else
    {
        for (int i = 0; i < SIZE; i += 2)
        {
            temp = numbers[i + 1];
            numbers[i + 1] = numbers[i];
            numbers[i] = temp;
        }
        printf("The array is sorted\n");
        for (int i = 0; i < SIZE; i++)
        {
            printf("%d", numbers[i]);
        }
    }
    printf("\n");
}
```

```
Please insert 8 numbers:
1
2
3
4
5
6
7
8
The array is sorted
21436587
Program ended with exit code: 0
```

```
Please insert 8 numbers:
1
2
8
4
3
6
5
4
The array is not sorted
12843654
Program ended with exit code: 0
```

```c
#define SIZE 10
#include <stdio.h>
int main()
{
    int numbers[SIZE], temp;
            printf("Please insert %d numbers:\n", SIZE);
    for (int i = 0; i < SIZE; i++)
    {
        scanf("%d", &numbers[i]);
    }
    printf("\n");
    for (int i = 0; i < SIZE; i++)
    {
        for (int j = i + 1; j < SIZE; j++)
        {
            if(numbers[j] < numbers[i])
            {
                temp = numbers[i];
                numbers[i] = numbers[j];
                numbers[j] = temp;
            }
        }
    }
    for (int i = 0; i < SIZE; i++)
    {
        printf("%d ", numbers[i]);
    }
    printf("\n");
}
```

```
Please insert 10 numbers:
10
-3
13
0
12
-2
0
17
-1
0

-3 -2 -1 0 0 0 10 12 13 17
Program ended with exit code: 0
```

```c
#define SIZE 10
#include <stdio.h>
int main()
{
    int arr[SIZE] = {0}, numbers, countmax = 0;
    printf("Please insert 15 digits:\n");
    for (int i = 0; i < 15; i++)
    {
        scanf("%d", &numbers);
        arr[numbers]++;
    }
    for (int i = 0; i < SIZE; i++)
    {
        printf("%d ", arr[i]);
    }
    for (int i = 0; i < SIZE; i++)
    {
        if (arr[i] > countmax)
        {
            countmax = arr[i];
        }
    }
    printf("\n");
    for (int i = 0; i < SIZE; i++)
    {
        if (arr[i] == countmax)
        {
            printf("%d ", i);
        }
    }
    printf("\n");
}
```

```
Please insert 15 digits:
8
7
6
5
1
2
3
1
2
4
5
1
2
3
4
0 3 3 2 2 2 1 1 1 0
1 2
Program ended with exit code: 0
```