labs:

```c
void main()
{
    int arr[100];
    printf("Entter number of array : ");
    int n,i;
    scanf("%d",&n);

    for(i=0 ; i<n ; i++){
        scanf("%d",&arr[i]);
    }

    negative( n ,arr);
    convert( n ,arr);
    sum_element( n ,arr);
    cpy_arr( n ,arr);
    num_ones( n ,arr);
    revers_arr( n ,arr);
    second_largest( n ,arr);
}
```

```c
void negative(int n ,int arr[]){
    int i;
    printf("========= LAB 1 =========\n\n");
    printf("Negative number is ");
    for(i=0 ; i<n ; i++){
        //negattive
        if(arr[i] < 0){
            printf("%d ",arr[i]);
        }
    }
}

void convert(int n ,int arr[]){
    printf("\n\n\n========= LAB 2 =========\n\n");
    int check_2 , i_2,j_2 , temp ;
    for(i_2=0 ; i_2<n ; i_2++){
        for(j_2 = i_2+1 ; j_2 <n ; j_2++){
            if(arr[j_2] > arr[i_2]){
                temp = arr[j_2];
                arr[j_2] = arr[i_2];
                arr[i_2] = temp;
            }
        }
    }
    printf("The max number is %d\nThe mini number is %d ",arr
}
```

```c
void sum_element(int n ,int arr[]){
    printf("\n\n\n========= LAB 3 =========\n\n");
    int sum_3=0 , i_3;
    for(i_3=0 ; i_3 < n ; i_3++){
        sum_3 += arr[i_3];
    }
    printf("The sum is %d ",sum_3);
}

void cpy_arr(int n ,int arr[]){
    printf("\n\n\n========= LAB 4 =========\n\n");
    int arr_4_copy[n];
    printf("The copy array after sorting :");
    int i_4;
    for(i_4=0 ; i_4 < n ; i_4++){
        arr_4_copy[i_4] = arr[i_4];
        printf("%d ",arr_4_copy[i_4]);
    }
}

void num_ones(int n ,int arr[]){
    printf("\n\n\n========= LAB 5 =========\n\n");
    int  i_5,count_5=0 ;
    printf("num of ones is : ");
    for(i_5=0 ; i_5<n ; i_5++){
        if(arr[i_5] == 1){
            count_5++;
        }
    }
    printf("%d ",count_5);
}
```

```c
void revers_arr(int n ,int arr[]){
    printf("\n\n\n========= LAB 6 =========\n\n");
    int  i_6 = n ;
    printf("The revers array after sorting :");
    for( ; i_6 >0 ; i_6--){
        printf("%d ",arr[i_6-1]);
    }
}

void second_largest(int n ,int arr[]){
    printf("\n\n\n========= LAB 7 =========\n\n");
    int check_7 , i_7,j_7 , temp_7 ;
    for(i_7=0 ; i_7<n ; i_7++){
        for(j_7 = i_7+1 ; j_7 <n ; j_7++){
            if(arr[j_7] > arr[i_7]){
                temp_7 = arr[j_7];
                arr[j_7] = arr[i_7];
                arr[i_7] = temp_7;
            }
        }
    }
    printf("The second largest number is %d \n\n",arr[1]);
}
```

Windows PowerShell

```
PS C:\Users\hassa\OneDrive\□□□ □□□□□□> .\a.exe
Entter number of array : 7
1
0
1
1
-5
-9
11
========= LAB 1 =========

Negative number is -5 -9


========= LAB 2 =========

The max number is 11
The mini number is -9


========= LAB 3 =========

The sum is 0


========= LAB 4 =========

The copy array after sorting :11 1 1 1 0 -5 -9


========= LAB 5 =========

num of ones is : 3


========= LAB 6 =========

The revers array after sorting :-9 -5 0 1 1 1 11


========= LAB 7 =========

The second largest number is 1

PS C:\Users\hassa\OneDrive\□□□ □□□□□□>
```

Tasks:

```c
printf("\n====== task 1 ====== \n");
int ii, number, sum = 0;
// take info from user
printf("Enter number : ");
scanf("%d", &number);

for(ii = 1; ii <= number / 2; ii++){
    if(number%ii == 0){
        sum += ii;
    }
}
// Check
if(sum == number && number > 0){
    printf("%d is perfect number", number);
}
else{
    printf("%d is not perfect number", number);
}
```

```
====== task 1 ======
Enter number : 27
27 is not perfect number

If you want try again enter [Y]
or click any button to exit !!!
        Choice is : Y


- Chooes task :
1-task 1.
2-task 2.
3-task 3.

        Your task is : 1

====== task 1 ======
Enter number : 28
28 is perfect number

If you want try again enter [Y]
or click any button to exit !!!
        Choice is : Y


- Chooes task :
1-task 1.
2-task 2.
3-task 3.

        Your task is : 2
```

```c
    printf("\n\n====== task 2 ====== \n");
    // write a progoram to count digit of number
    int num, digit_num, rem, n = 0;
    float result = 0.0;
    printf("Enter a number : ");
    scanf("%d", &num);
    digit_num = num;
    for (digit_num = num; digit_num != 0; ++n) {
        digit_num /= 10;
    }
    for (digit_num = num; digit_num != 0; digit_num /= 10) {
        rem = digit_num % 10;
        result += pow(rem, n);
    }
    if ((int)result == num)
        printf("%d is an Armstrong number.", num);
    else
        printf("%d is not an Armstrong number.", num);
break;
```

```
====== task 2 ======
Enter a number : 153
153 is an Armstrong number.

If you want try again enter [Y]
or click any button to exit !!!
        Choice is : Y


- Chooes task :
1-task 1.
2-task 2.
3-task 3.

        Your task is : 2


====== task 2 ======
Enter a number : 150
150 is not an Armstrong number.
```

```c
int arr[20], i, j, Size, Count = 0;
printf("\n Please Enter Number of elements in an array  :   ");
scanf("%d", &Size);

printf("\n Please Enter %d elements of an Array  :  ", Size);
for (i = 0; i < Size; i++){
    scanf("%d", &arr[i]);
}

for (i = 0; i < Size; i++){
    for(j = i + 1; j < Size; j++){
        if(arr[i] == arr[j]){
            Count++;
            break;
        }
    }
}
printf("\n Total Number of Duplicate Elements  =  %d ", Count);
```

```
73
74  ====== task 3 ======
75
76   Please Enter Number of elements in an array  :   6
77
78   Please Enter 6 elements of an Array  :  10
   20
79 20
   10
80 5
   6
81
82   Total Number of Duplicate Elements  =  2
83
```