Tab 1

1)Problem name : Write a C program to input and display array elements.

Source code:

```c
#include <stdio.h>
#define MAX_SIZE 1000

int main()
{
    int i, a[MAX_SIZE], n;

    printf("Enter size of array:");
    scanf("%d", &n);

    printf("Enter %d elements in the array:",n);
    for (i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }

    printf("\nElements in array are:");
    for(i=0;i<n;i++)
    {
    printf("%d",a[i]);
    }
    return 0;
}
```

Output:
Enter size of array:5
Enter 5 elements in the array:5 3 7 8 6

Elements in array are:53786

Tab 2

2)Problem name: Write a C program to print the sum of all elements of an array.

Source code:

```c
#include <stdio.h>
#define MAX_SIZE 100

int main()
{
    int arr[MAX_SIZE];
    int i, n, sum = 0;

    printf("Enter size of the array: ");
    scanf("%d", &n);

    /* Input elements in array */
    printf("Enter %d elements in the array: ", n);
    for (i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }


    for (i = 0; i < n; i++)
    {
        sum = sum + arr[i];
    }

    printf("Sum of all elements of array = %d", sum);
return 0;
```

Output:

Enter size of the array: 5

Enter 5 elements in the array: 3 5 6 8 9

Sum of all elements of array = 31

Tab 3

3)Problem name: Write a C program to find the second largest element in the array.

Source code:

```c
#include <stdio.h>
#include <limits.h>

#define MAX_SIZE 1000

int main()
{
    int arr[MAX_SIZE], size, i;
    int max1, max2;

    printf("Enter size of the array (1-1000): ");
    scanf("%d", &size);

    printf("Enter elements in the array: ");
    for (i = 0; i < size; i++)
    {
        scanf("%d", &arr[i]);
    }

    max1 = max2 = INT_MIN;

    for (i = 0; i < size; i++)
    {
        if (arr[i] > max1)
        {

            max2 = max1;
            max1 = arr[i];
        }
        else if (arr[i] > max2 && arr[i] < max1)
        {
            max2 = arr[i];
        }
    }
```

```c
    printf("First largest = %d\n", max1);
    printf("Second largest = %d", max2);

    return 0;
}
```

Output:

Enter size of the array (1-1000): 8
Enter elements in the array: 4 6 87 54 3 5 76 98
First largest = 98
Second largest = 87

Tab 4

4)Problem name: Write a C program to copy one array to another.

Source code:

```c
#include <stdio.h>
#define MAX_SIZE 100

int main()
{
    int source[MAX_SIZE], dest[MAX_SIZE];
    int i, size;


    printf("Enter the size of the array : ");
    scanf("%d", &size);

    printf("Enter elements of source array : ");
    for (i = 0; i < size; i++)
    {
        scanf("%d", &source[i]);
    }

    for (i = 0; i < size; i++)
    {
        dest[i] = source[i];
    }

    printf("\nElements of source array are : ");
    for (i = 0; i < size; i++)
    {
        printf("%d\t", source[i]);
    }

    printf("\nElements of dest array are : ");
    for (i = 0; i < size; i++)
    {
        printf("%d\t", dest[i]);
    }
```

```
    return 0;
}
```

Output:

Enter the size of the array : 5
Enter elements of source array : 4 3 56 23 8

Elements of source array are : 4   3   56   23   8
Elements of dest array are : 4   3   56   23   8

Tab 5

5)Program name: Write a C program to linear search an array element.

Source code:

```c
#include <stdio.h>

#define MAX_SIZE 100
int main()
{
    int arr[MAX_SIZE];
    int size, i, toSearch, found;

    printf("Enter size of array: ");
    scanf("%d", &size);

    printf("Enter elements in array: ");
    for (i = 0; i < size; i++)
    {
        scanf("%d", &arr[i]);
    }

    printf("\nEnter element to search: ");
    scanf("%d", &toSearch);

    found = 0;

    for (i = 0; i < size; i++)
    {

        if (arr[i] == toSearch)
        {
            found = 1;
            break;
        }
    }

    if (found == 1)
    {
```

```
        printf("\n%d is found at position %d", toSearch, i + 1);
    }
    else
    {
        printf("\n%d is not found in the array", toSearch);
    }

    return 0;
}
```

Output:
Enter size of array: 7
Enter elements in array: 2 45 3 24 67 4 56

Enter element to search: 4

4 is found at position 6