Table of Contents

ARRAYS

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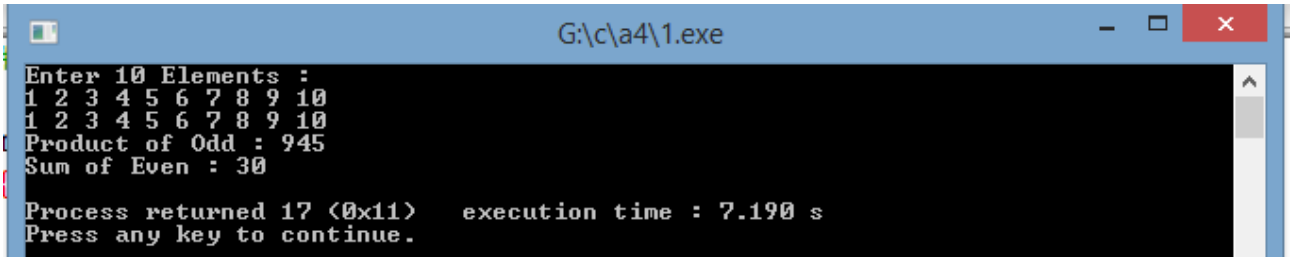
1) Write a C program to input 10 numbers through the keyboard into an array and display the results of addition of even numbers and product of odd numbers.

```
#include<stdio.h>


main()
{
        int a[10],i,ele,o=1,e=0;
        ele=sizeof(a)/sizeof(a[0]);


        printf("Enter %d Elements : \n",ele);


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


        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");
```

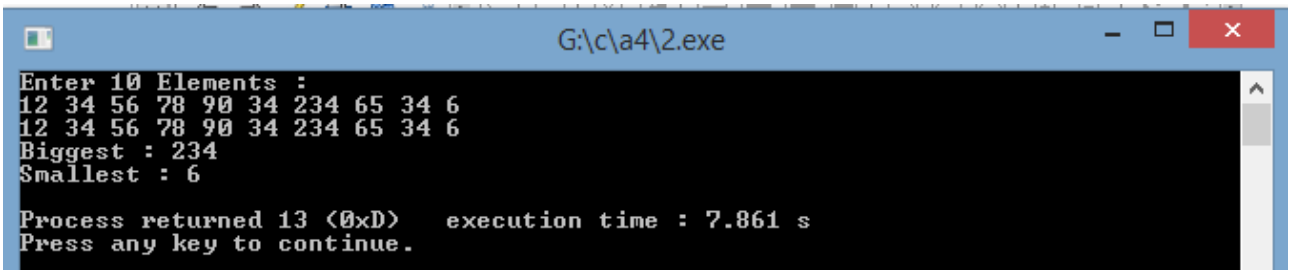
```
    for(i=0;i<ele;i++)
    {
    if(a[i]%2)
    o=a[i]*o;
    else
    e=a[i]+e;
    }
    printf("Product of Odd : %d\n",o);
    printf("Sum of Even : %d\n",e);
}
```



2) Write a C program to input 10 numbers through the keyboard into an array and find the biggest and smallest number in an Unsorted array without using any Sorting Technique.

```
#include<stdio.h>


main()
{
        int a[10],i,ele,max=0,min=2147483646;
        ele=sizeof(a)/sizeof(a[0]);
        printf("Enter %d Elements : \n",ele);


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


        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");


        for(i=0;i<ele;i++)
        {
        if(a[i] > max)
```

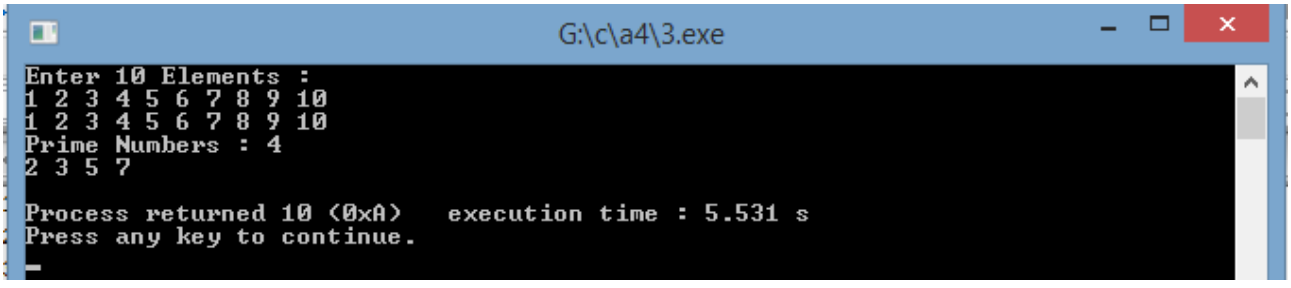
```
        max=a[i];
        if(a[i] < min)
        min=a[i];
        }
        printf("Biggest : %d\n",max);
        printf("Smallest : %d\n",min);
}
```



3) Write a C program to input 10 numbers through the keyboard and find the number of prime numbers count, store them into a seperate array and display it.

```
#include<stdio.h>


main()
{
        int a[10],b[10],i,ele,p=0,k=0,j;
        ele=sizeof(a)/sizeof(a[0]);


        printf("Enter %d Elements : \n",ele);


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


        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");


        for(i=0;i<ele;i++)
        {
```

```
        for(j=2;j<a[i];j++)
        {
                if(a[i]%j==0)
                break;
        }
        if(j==a[i])
        {
                p++;
                b[k++]=a[i];
        }       }
        printf("Prime Numbers : %d\n",p);
        for(k=0;k<p;k++)
        {
        printf("%d ",b[k]);
        }
        printf("\n");
}
```

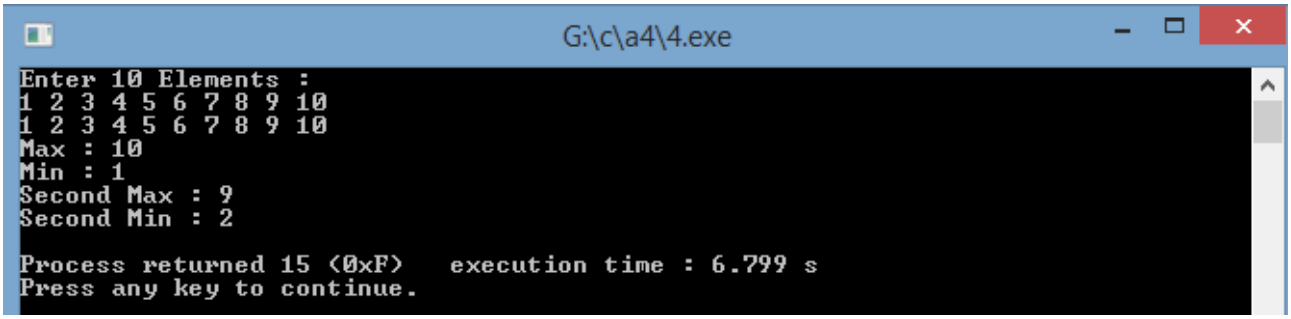


4) Write a C program to findout second largest and second smallest elements of an unsorted array without using any Sorting Technique.

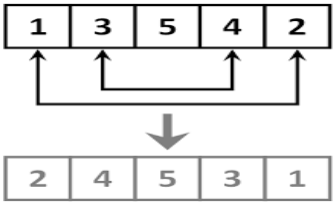
```
#include<stdio.h>


main()
{
        int a[10],i,ele,smax=0,smin=2147483640,min=2147483640,max=0;
        ele=sizeof(a)/sizeof(a[0]);


        printf("Enter %d Elements : \n",ele);


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


        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");


        for(i=0;i<ele;i++)
        {
        if(a[i] > max)
```

```
max=a[i];


if(a[i] < min)
min=a[i];
}
printf("Max : %d\nMin : %d\n",max,min);


for(i=0;i<ele;i++)
{
if(a[i] > smax)
{
        if(a[i] == max)
        continue;
        smax=a[i];
}


if(a[i] < smin)
{
        if(a[i] == min)
        continue;
        smin=a[i];
}
}
```

```
    printf("Second Max : %d\n",smax);
    printf("Second Min : %d\n",smin);
}
```

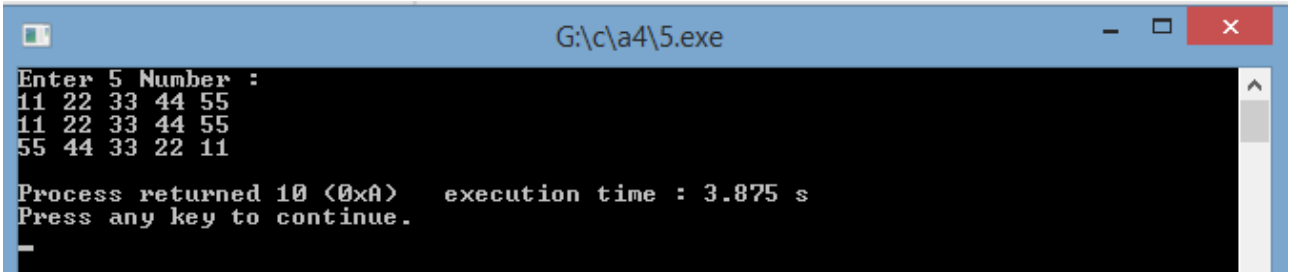


5) Write a C program to reverse the elements of a given array.

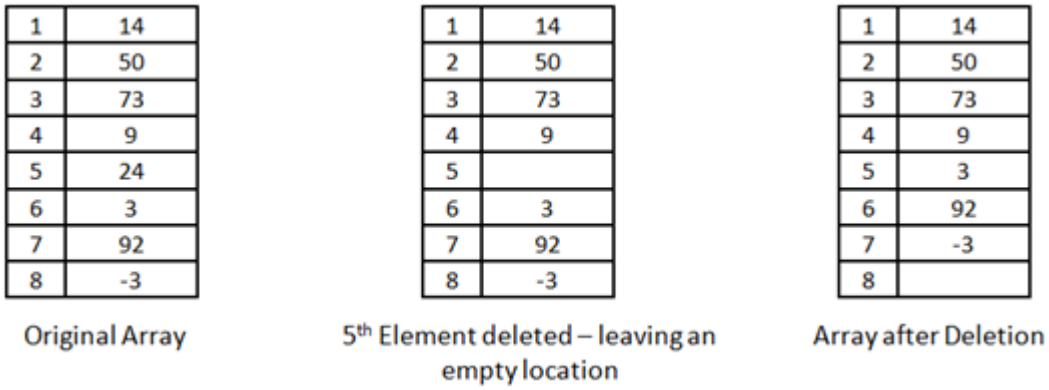



```
#include<stdio.h>

main()
{
        int a[5],ele,i,j,k;

        ele=sizeof(a)/sizeof(a[0]);

        printf("Enter %d Number : \n",ele);
        for(i=0;i<ele;i++)
        {
        scanf("%d",&a[i]);
        }

        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");
```

```
        for(i=0,j = ele-1; i < j;i++,j--)
        {
        k=a[i];
        a[i]=a[j];
        a[j]=k;
        }

        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");
}
```



6) Write a C program to delete an element at desired position from an array.



1	14
2	50
3	73
4	9
5	24
6	3
7	92
8	-3

Original Array

1	14
2	50
3	73
4	9
5	
6	3
7	92
8	-3

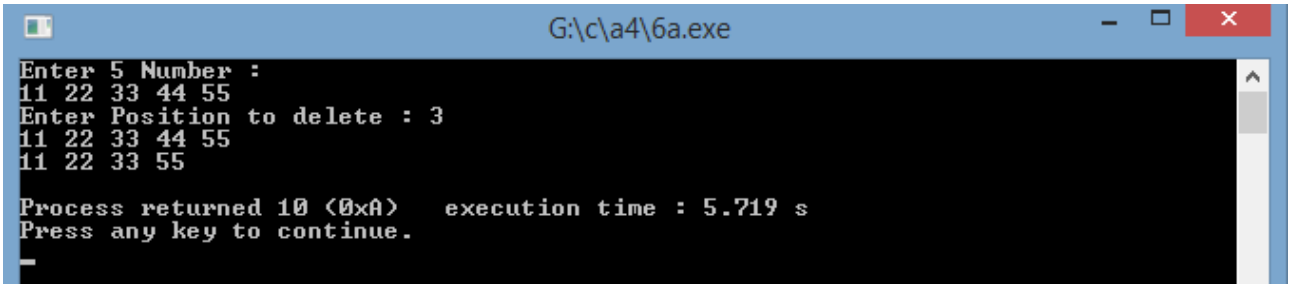
5th Element deleted – leaving an empty location

1	14
2	50
3	73
4	9
5	3
6	92
7	-3
8	

Array after Deletion

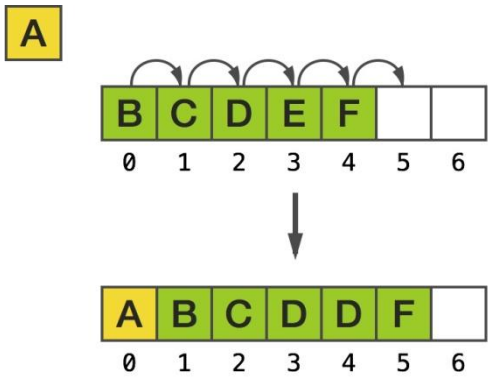
```
#include<stdio.h>

main()
{
        int a[5],ele,i,j,k,pos;

        ele=sizeof(a)/sizeof(a[0]);

        printf("Enter %d Number : \n",ele);
        for(i=0;i<ele;i++)
        {
        scanf("%d",&a[i]);
        }

        printf("Enter Position to delete : ");
        scanf("%d",&pos);
```

```
        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");

        for(j=pos;j<ele;j++)
        {
        a[j]=a[j+1];
        }
        ele--;

        for(j=0;j<ele;j++)
        {
        printf("%d ",a[j]);
        }
        printf("\n");
}
```



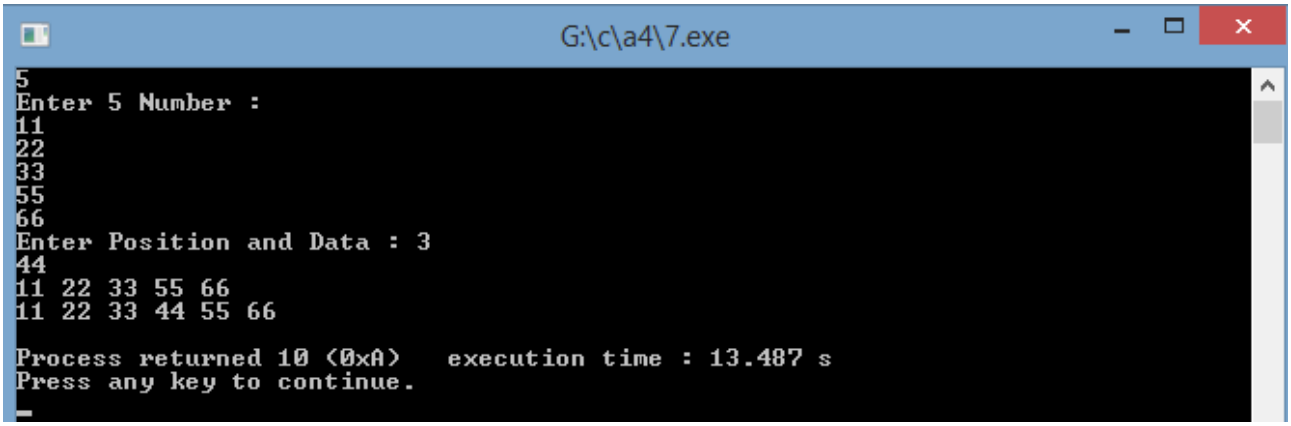
7) Write a C program to insert an element at desired position in an array.

For Example if 'A' is to be stored at '0' position then,




```
#include<stdio.h>
main()
{
        int a[10],ele,i,j,k,pos,add;

        scanf("%d",&k);
        printf("Enter %d Number : \n",k);
        for(i=0;i<k;i++)
        {
        scanf("%d",&a[i]);
        }
        printf("Enter Position and Data : ");
        scanf("%d %d",&pos,&add);

        for(i=0;i<k;i++)
        {
        printf("%d ",a[i]);
```

```
        }
        printf("\n");

        j=0;

        for(j=k-1;j>=pos;j--)
        {
        a[j+1]=a[j];
        }

        a[pos]=add;

        for(i=0;i<=k;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");
}
```

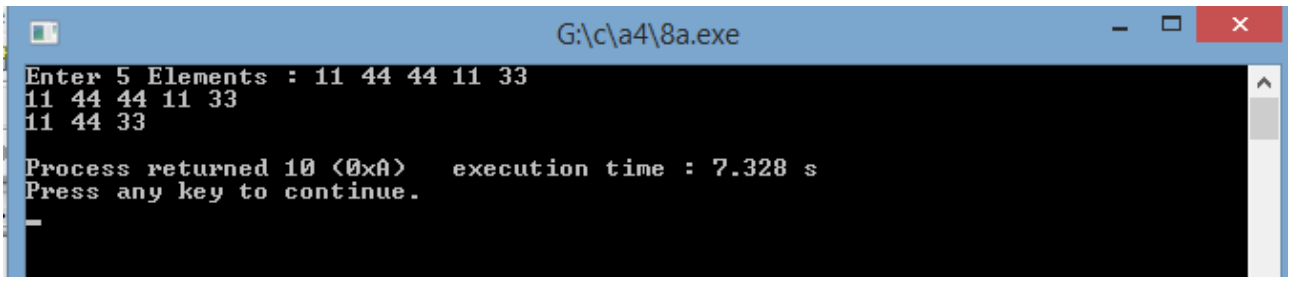


8) Write a C program which deletes the duplicate elements of an array.

```
Original: [A, C, B, D, A, B, E, D, B, C]
Remove duplicate result: D, E, A, B, C,
```

```
#include<stdio.h>


main()
{
        int a[5],ele,i,j,k,t=0;
        ele=sizeof(a)/sizeof(a[0]);


        printf("Enter %d Elements : ",ele);
        for(i=0;i<ele;i++)
        {
        scanf("%d",&a[i]);
        }
        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");


        for(i=0;i<ele;i++)
        {
        for(j=i+1;j<ele;j++)
        {
                if(a[i] == a[j])
```

```
            {
                for(k=j;k<ele;k++)
                a[k]=a[k+1];
                j--;
                ele--;
            }
        }
        }

        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
        printf("\n");
}
```



9) Write a C program to find the duplicate elements of a given array and find the count of duplicated elements.

Ex: if int a[] = {0,3,1,0,5,1,2,0,4,5}

output : -

The duplicate elements are existed in an array

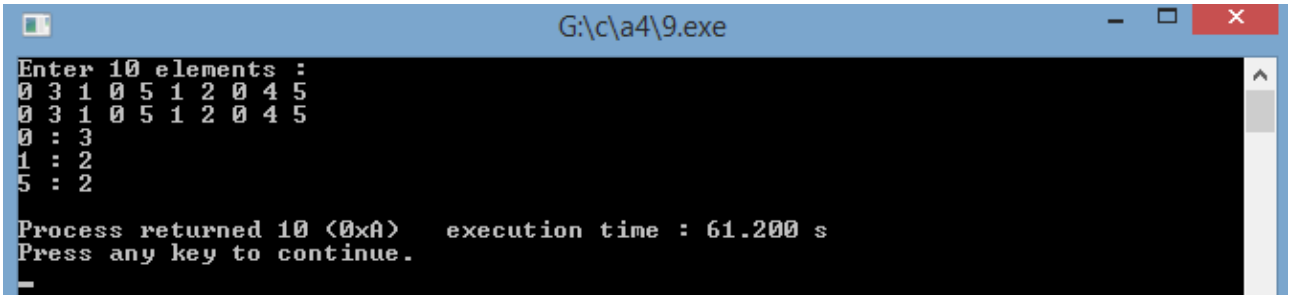
0 -- 3 times

1 -- 2 times

5 -- 2 times

```
#include<stdio.h>
main()
{
        int a[10],ele,i,j,k,m,n,count;
        ele=sizeof(a)/sizeof(a[0]);
        printf("Enter %d elements : \n",ele);

        for(i=0;i<ele;i++)
        {
        scanf("%d",&a[i]);
        }
        for(i=0;i<ele;i++)
        {
        printf("%d ",a[i]);
        }
```

```
        printf("\n");


        for(i=0;i<ele;i++)
        {
        count=1;
        for(j=i+1;j<ele;j++)
        {
                if(a[i] == a[j])
                {
                        count++;
                        a[j] = -99;
                }
        }
        if(a[i] != -99)
        {
                if(count > 1)
                printf("%d : %d\n",a[i],count);
        }
        }
}
```



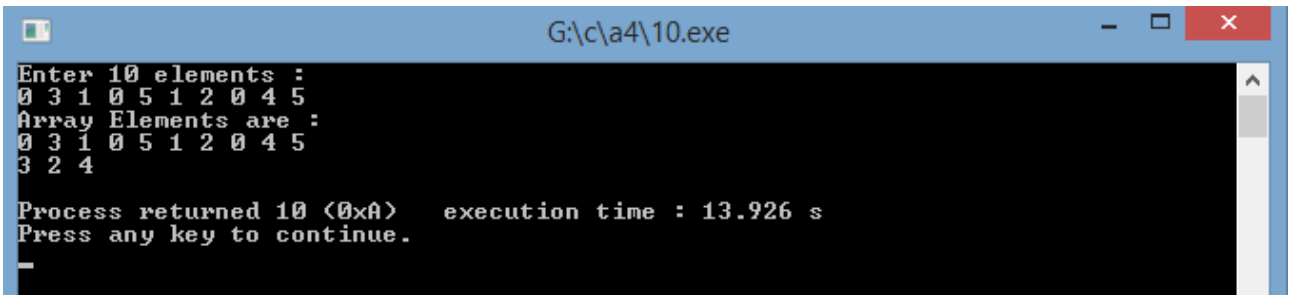
10) Write a program to print the non repeated numbers of a given array.

Ex : if int a[] = {0,3,1,0,5,1,2,0,4,5}

Output : 3, 2, 4

```
#include<stdio.h>

main()
{
    int a[10],ele,i,j,k,m,n,count;

    ele=sizeof(a)/sizeof(a[0]);

    printf("Enter %d elements : \n",ele);

    for(i=0;i<ele;i++)
    {
    scanf("%d",&a[i]);
    }
    printf("Array Elements are : \n");
    for(i=0;i<ele;i++)
    {
    printf("%d ",a[i]);
    }
    printf("\n");
```

```
        for(i=0;i<ele;i++)
        {
        count=1;
        for(j=i+1;j<ele;j++)
        {
                if(a[i] == a[j])
                {
                        count++;
                        a[j] = -99;
                }

        }
        if(a[i] != -99)
        {
                if(count == 1)
                printf("%d ",a[i]);
        }
        }
        printf("\n");
}
```



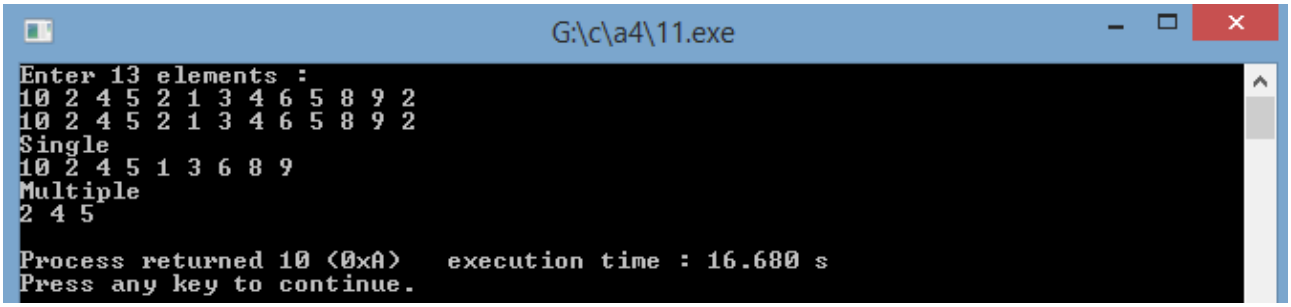
11) Write a program to copy the elements of one array into another array without duplicate items as a first slot, and store duplicate elements as a second slot.

Ex: source array {10,2,4,5,2,1,3,4,6,5,8,9,2}

```
#include<stdio.h>

main()
{
        int a[13],ele,i,j,k,m,n,count,s[10],d[10];

        ele=sizeof(a)/sizeof(a[0]);

        printf("Enter %d elements : \n",ele);

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

        m = n = 0;
```

```
for(i=0;i<ele;i++)
{
count=1;
for(j=i+1;j<ele;j++)
{
        if(a[i] == a[j])
        {
                count++;
                a[j] = -99;
        }

}
if(a[i] != -99)
{
        if(count > 1)
        d[m++]=a[i];
        s[n++]=a[i];
        //printf("%d : %d\n",a[i],count);
}
}
printf("Single\n");
for(i=0;i<n;i++)
{
printf("%d ",s[i]);
```

```
        }
        printf("\n");
        printf("Multiple\n");
        for(i=0;i<m;i++)
        {
        printf("%d ",d[i]);
        }
        printf("\n");

}
```



12) Write a C program to evaluate the following series. The series contains sum of square of numbers from 1 to 'n'. Strore result of each term in an array. Calculate value of ' S ' using array.

S = 1^2 + 2^2 + 3^2 + 4^2 + ------ n^2

= [1, 4, 9, 16, -------- n^2]

Suppose n = 4,

then S = 1^2+2^2+3^2+4^2;

S = 1+4+9+16;

S = 30.

```
#include<stdio.h>

main()
{
        int i,k,s=0,b[10],t;

        printf("SIZE : \n");
        scanf("%d",&k);

        t=0;
        for(i=1;i<=k;i++)
        {
        b[t++] = i * i;
        }
```

```
        for(t=0;t<k;t++)
        {
        printf("%d ",b[t]);
        s = s + b[t];
        }
        printf("\nSum : %d\n",s);
}
```