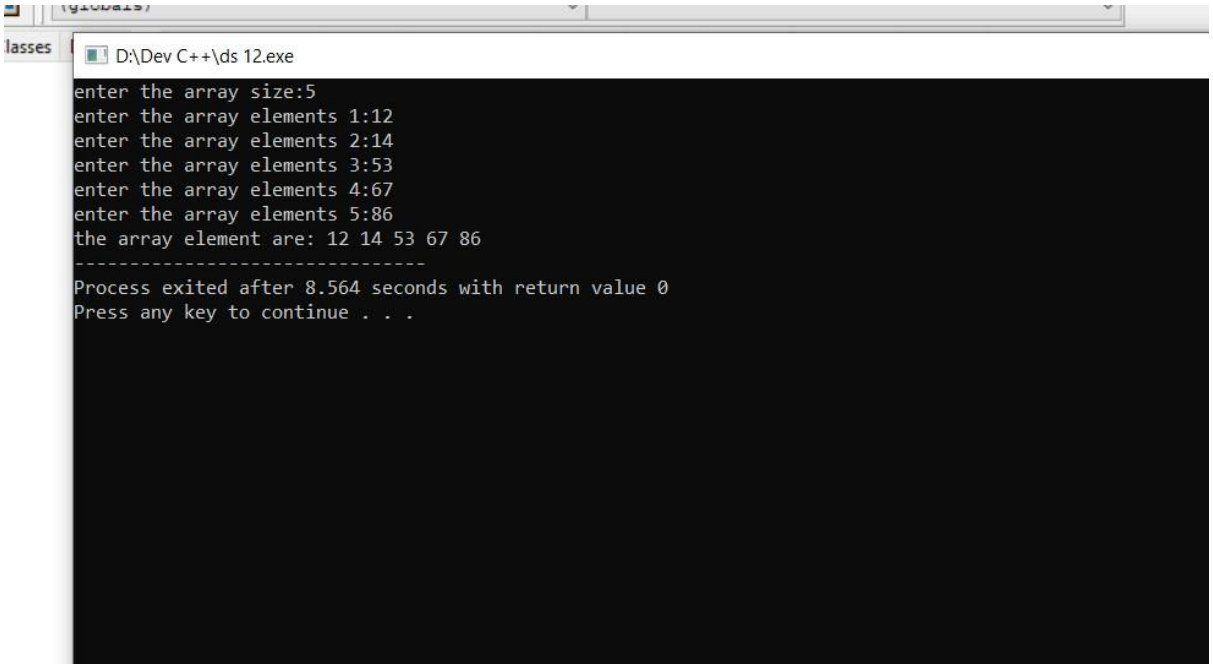
12. Write a c program to initialize an array and print elements.

PROGRAM :

```
#include<stdio.h>
int main()
{
        int a[100],n,i;
        printf("enter the array size:");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("enter the array elements %d:",i+1);
                scanf("%d",&a[i]); }
                printf("the array element are:");
                for(i=0;i<n;i++)
                {


        printf(" %d",a[i]);}
}
```

OUTPUT:

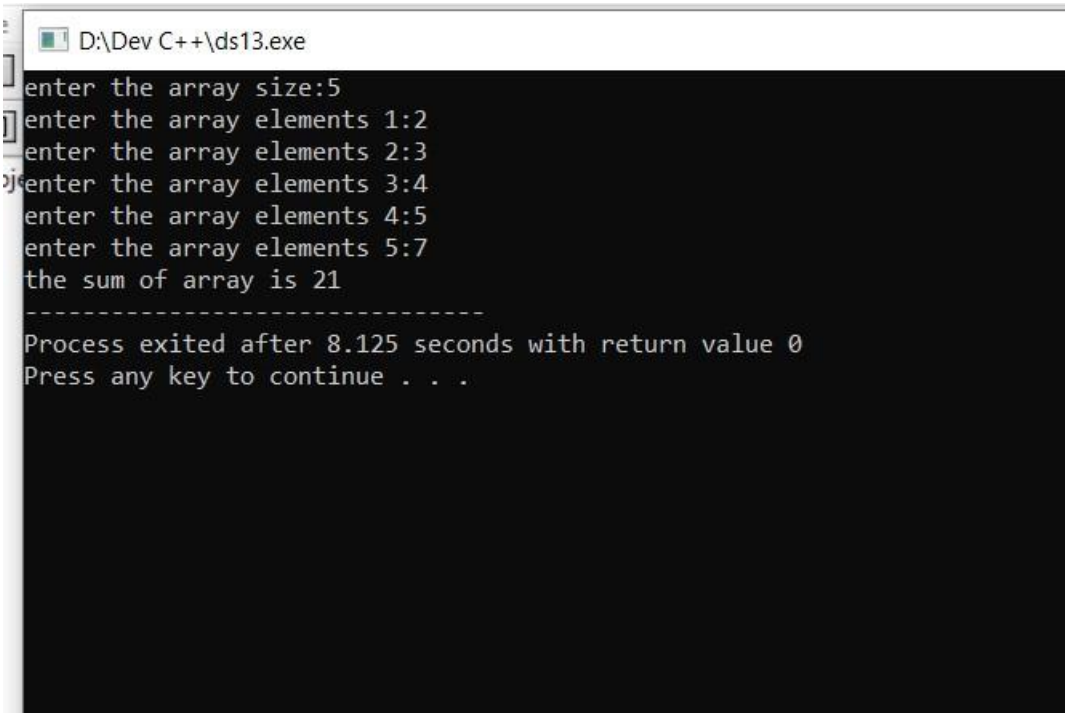


13. Write a c program for sum of elements in array**.**

PROGRAM:

```
#include<stdio.h>
int main()
{ int a[100],n,i,sum=0;
Printf(“enter the size of array:”);
scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("enter the array elements %d:",i+1);
                scanf("%d",&a[i]); }
        for(i=0;i<n;i++)
        {
                sum=sum+a[i];
        }
                printf("the sum of array is %d",sum);
        }
```

OUTPUT :

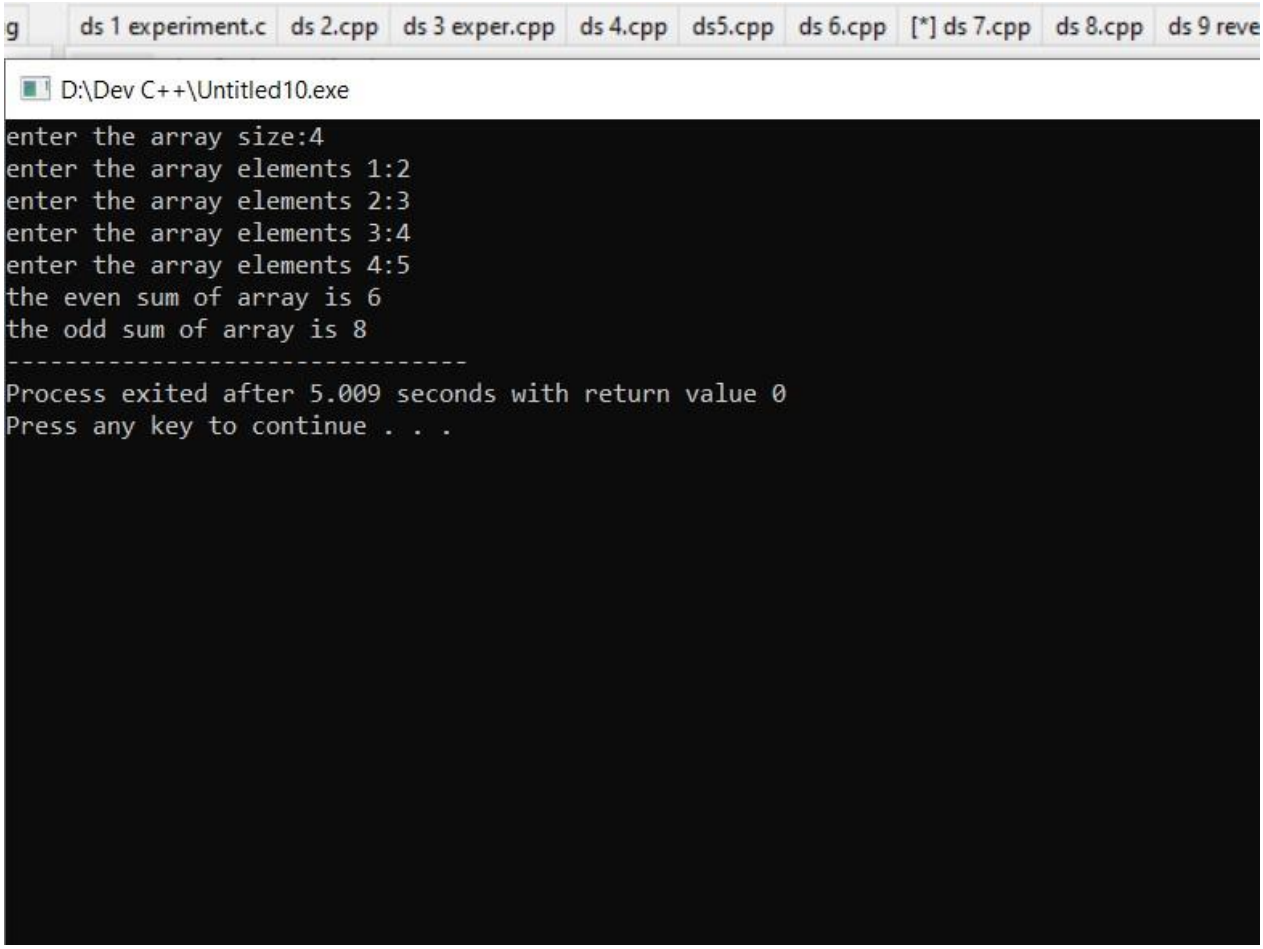


14.Write a c program for print sum of elements and sum of odd numbers in array.

PROGRAM:

```
#include<stdio.h>
int main()
{
	int a[100],n,i,evensum=0,oddsum=0;
	printf("enter the array size:");
	scanf("%d",&n);
	for(i=0;i<n;i++)
	{
		printf("enter the array elements %d:",i+1);
		scanf("%d",&a[i]); }
	for(i=0;i<n;i++)
	{
		if(i%2==0)
		{
		evensum=evensum+a[i]; }
		else
		{
			oddsum = oddsum+a[i];
		}
	}
		printf("the even sum of array is %d",evensum);
		printf("\nthe odd sum of array is %d",oddsum);
	}
```

OUTPUT :


g
ds 1 experiment.c
ds 2.cpp
ds 3 exper.cpp
ds 4.cpp
ds5.cpp
ds 6.cpp
[*] ds 7.cpp
ds 8.cpp
ds 9 reve
D:\Dev C++\Untitled10.exe
enter the array size:4
enter the array elements 1:2
enter the array elements 2:3
enter the array elements 3:4
enter the array elements 4:5
the even sum of array is 6
the odd sum of array is 8

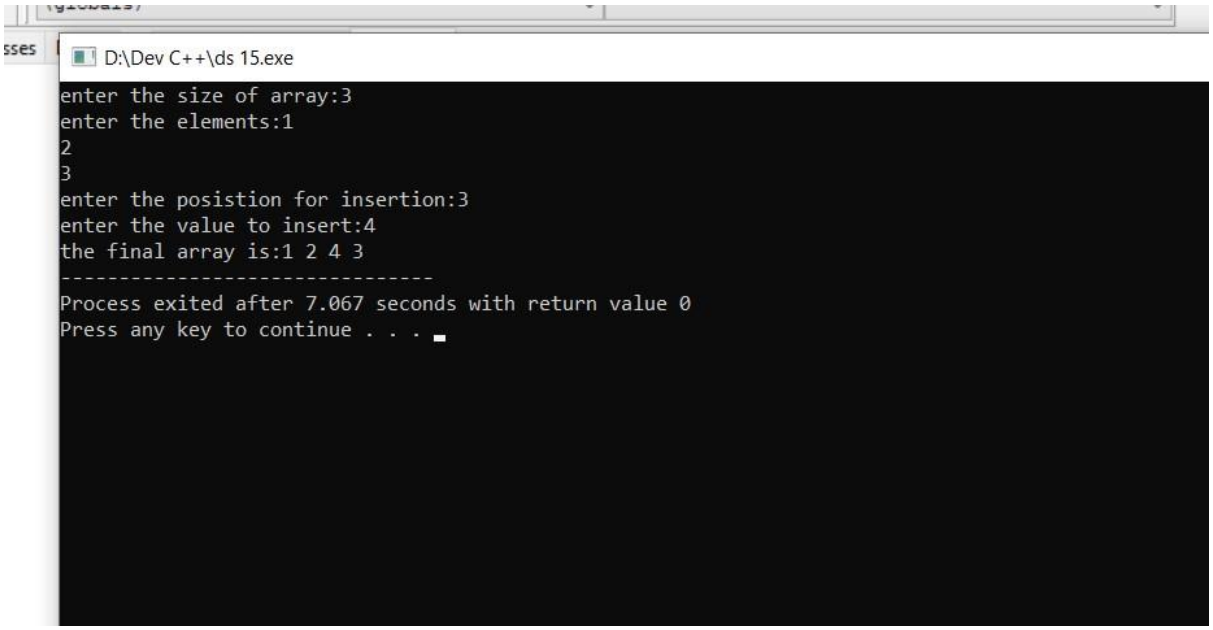
Process exited after 5.009 seconds with return value 0
Press any key to continue . . .

15.1. Write a c program for insertion a element in array.

PROGRAM:

```
#include<stdio.h>
int main()
{
	int i,j,n,a[100],p,v;
	printf("enter the size of array:");
	scanf("%d",&n);
	printf("enter the elements:");
	for(i=0;i<n;i++)
	{
		scanf("%d",&a[i]);
	}
	printf("enter the posistion for insertion:");
	scanf("%d",&p);
	printf("enter the value to insert:");
	scanf("%d",&v);
	for(i=n-1;i>=p-1;i--)
	{
		a[i+1]=a[i];
		a[p-1]=v;
	}
	printf("the final array is:");
	for(i=0;i<n+1;i++)
	{
		printf("%d ",a[i]);
	}
}
```

OUTPUT:



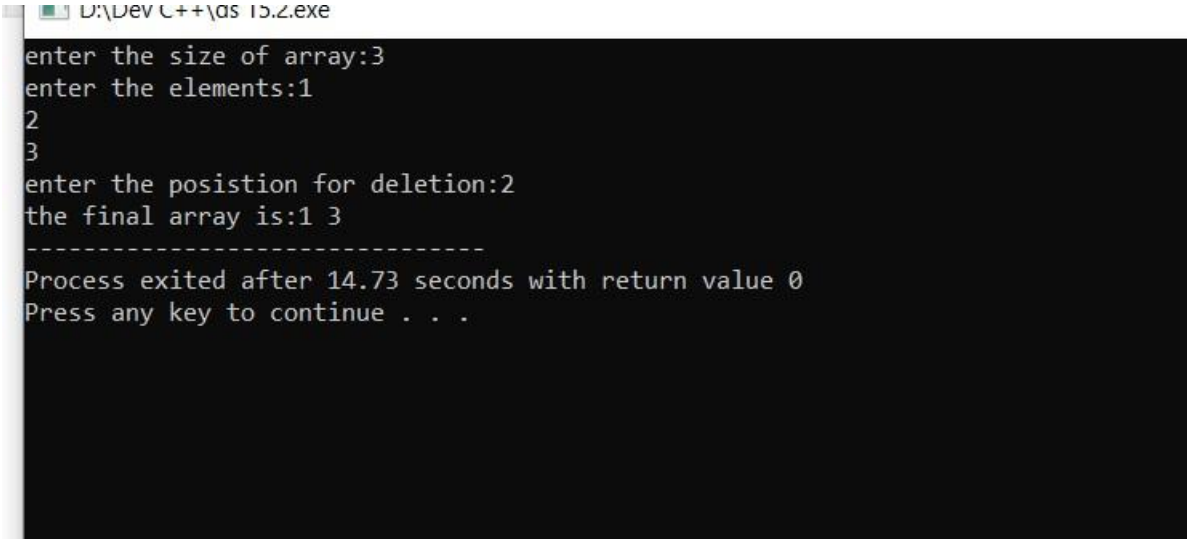
15.2 write a c program for deletion in array.

PROGRAM :

```
#include<stdio.h>
int main()
{
	int i,j,n,a[100],p,v;
	printf("enter the size of array:");
	scanf("%d",&n);
	printf("enter the elements:");
	for(i=0;i<n;i++)
	{
		scanf("%d",&a[i]);
	}
	printf("enter the posistion for deletion:");
	scanf("%d",&p);
	for(i=p-1;i<n-1;i++)
	{
		a[i]=a[i+1];
```

```
        }
        printf("the final array is:");
        for(i=0;i<n-1;i++)
        {
                printf("%d ",a[i]);
        }
}
```

OUTPUT :



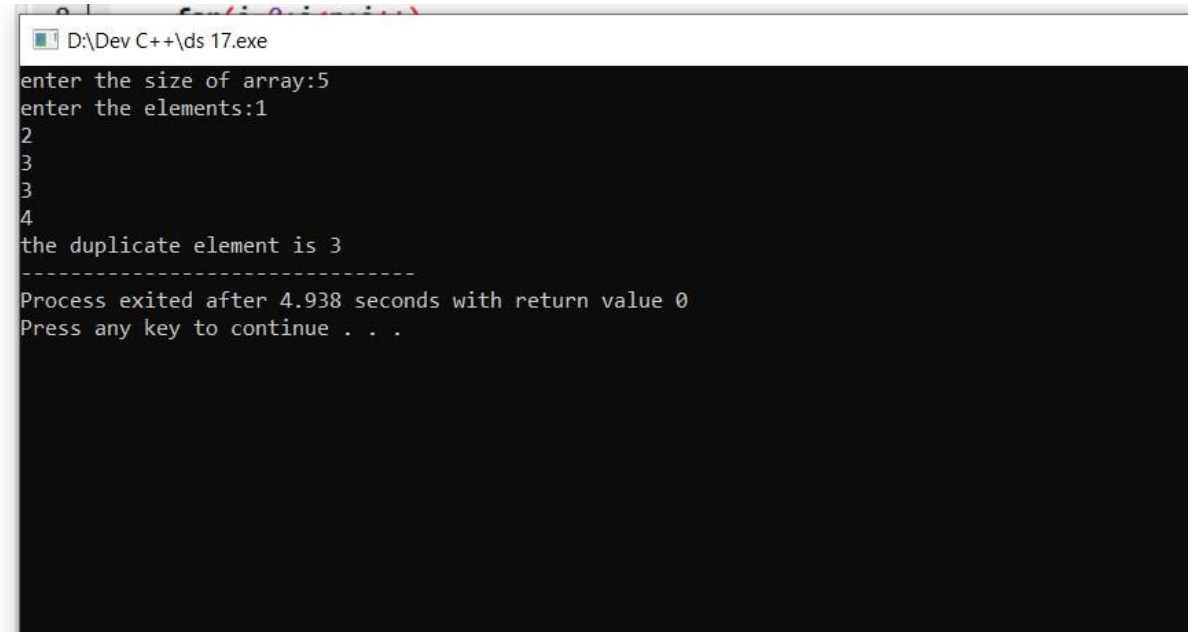
16. Write a c program for merging array.

PROGRAM :

```
#include<stdio.h>
int main()
{
	int a[100],b[100],n1,n2,i,n3;
	printf("enter the first array size:");
	scanf("%d",&n1);

	for(i=0;i<n1;i++)
	{
		printf("enter the firstarray elements %d:",i+1);
		scanf("%d",&a[i]); }
	printf("enter the second array size:");
	scanf("%d",&n2);
			for(i=0;i<n2;i++)
	{
		printf("enter the secondarray elements %d:",i+1);
		scanf("%d",&b[i]);
		}
	n3=n1+n2;
	int c[n3];
	for(i=0;i<n1;i++)
	{
	c[i] = a[i];
}
for(i=0;i<n2;i++)
{
	c[i+n1] = b[i];
```

```
}
for(i=0;i<n3;i++)
{
printf("%d ",c[i]);
}
}
```

OUTPUT :



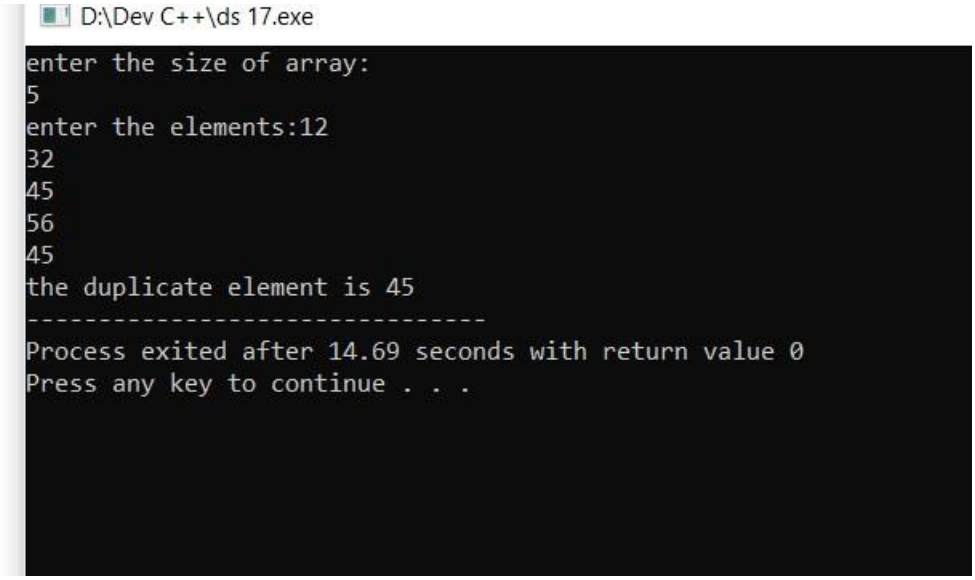
17. Write a c program for find duplicate element in array.

PROGRAM:

```
#include<stdio.h>
int main()
{
	int a[100],b[100],n,i,j,k,x=0;
	printf("enter the size of array:");
	scanf("%d",&n);
	printf("enter the elements:");
	for(i=0;i<n;i++)
	{
		scanf("%d",&a[i]);
	}
	for(i=0;i<n;i++)
	{
		for(j=i+1;j<n;j++)
		{
			if(a[i]==a[j])
		{

		x=a[i];

		}

	}
}
if(x!=0)
{
```

```
printf("the duplicate element is %d",x); }
else
{
        printf("there is no dulpicate");
}
return 0;
}
```

OUTPUT :

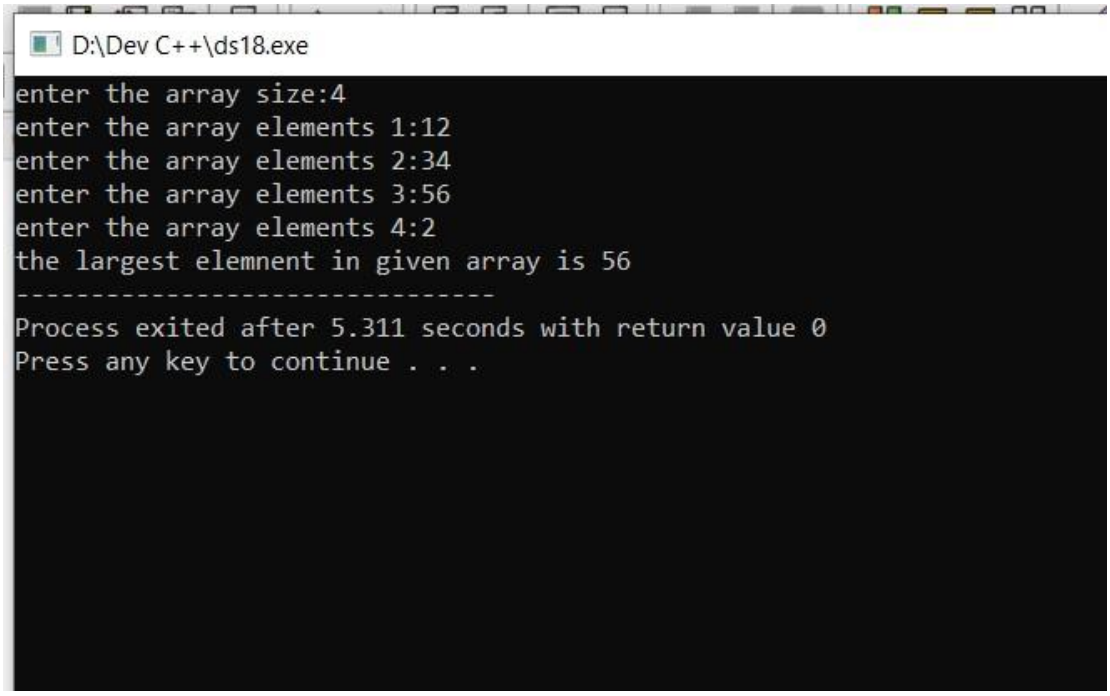


18. Write a c program for finding largest element in array.

PROGRAM :

```
#include<stdio.h>
int main()
{
	int a[100],n,i,large=0;
	printf("enter the array size:");
	scanf("%d",&n);
	for(i=0;i<n;i++)
	{
		printf("enter the array elements %d:",i+1);
		scanf("%d",&a[i]); }
		for(i=0;i<n;i++)
		{
			if(a[i]>large)
			{
				large=a[i];
			}
		}
		printf("the largest elemnent in given array is %d",large);
	}
```

OUTPUT :



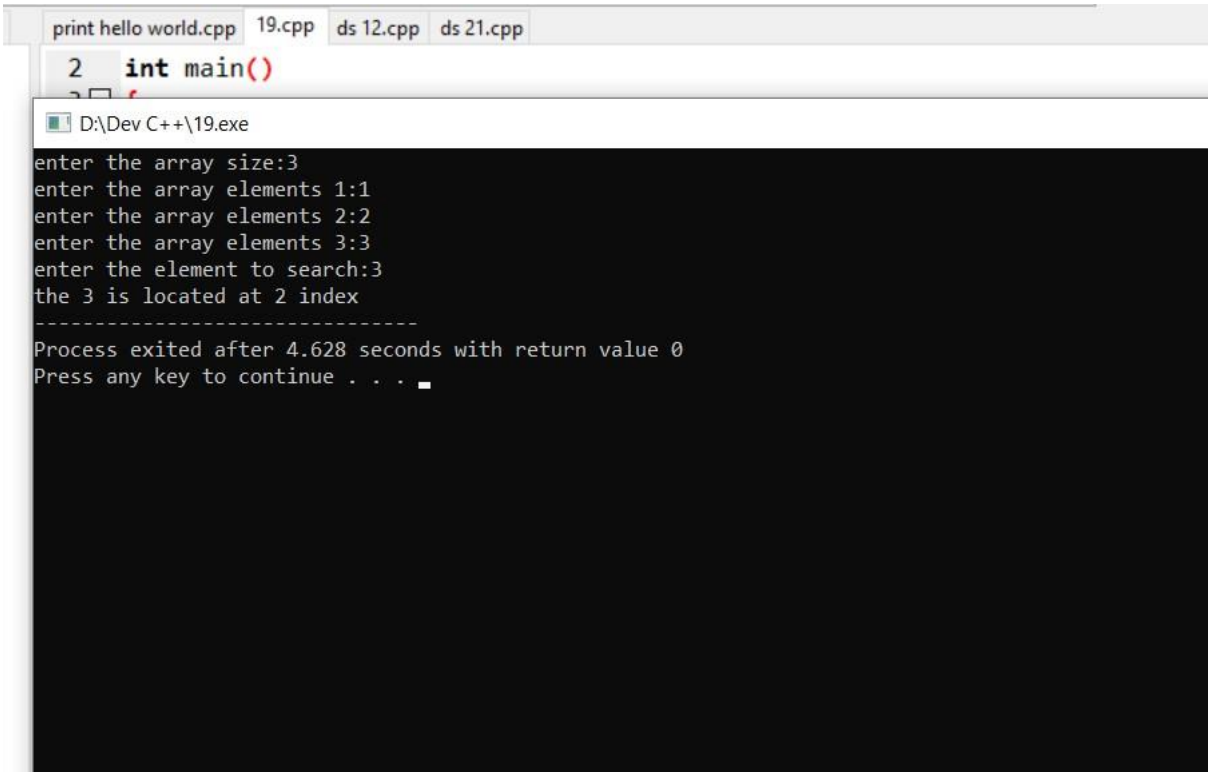
19.Write a c program for searching element using linear search.

PROGRAM :

```
#include<stdio.h>
int main()
{
        int a[100],n,i,x,e;
        printf("enter the array size:");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("enter the array elements %d:",i+1);
                scanf("%d",&a[i]); }
                printf("enter the element to search:");
                scanf("%d",&x);
```

```
        for(i=0;i<=n;i++)
        {
            if(x==a[i])
            {
                printf("the %d is located at %d index",x,n-1);
                e=0;
                break;
                 }
            else
        {e=1; }
        }
        if(e==1)
        {printf("the %d value not present",x);
        }
    }
```

OUTPUT :



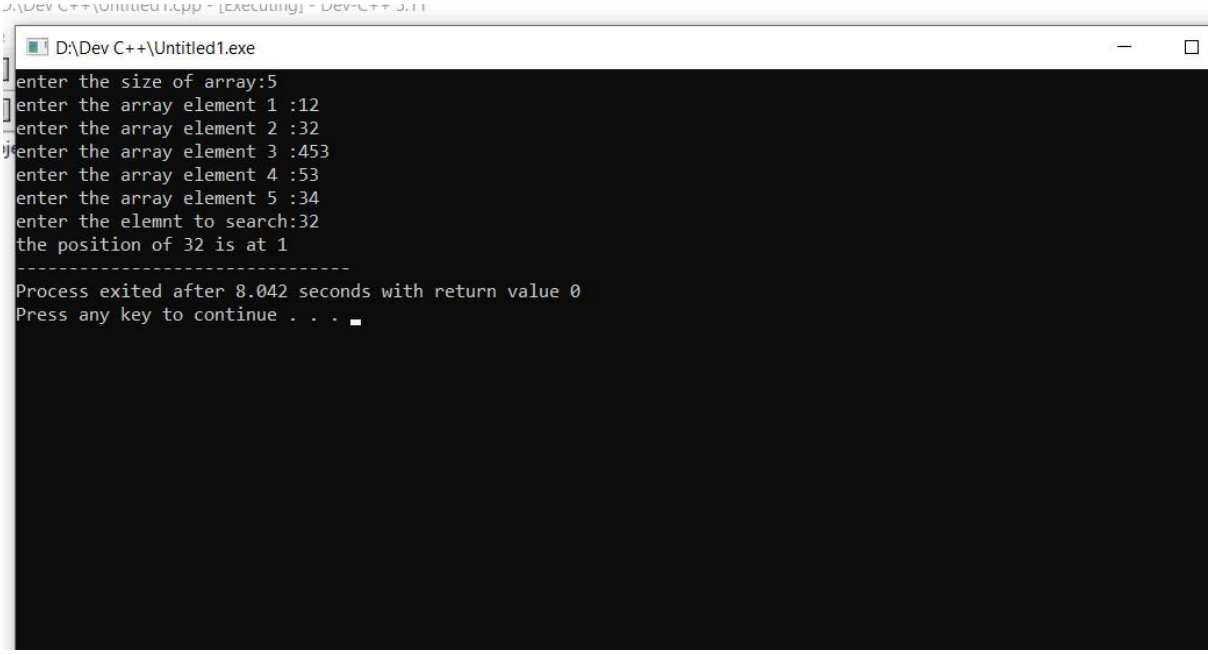
20. Write a c program for searching an element using binary search.

PROGRAM :

```
#include<stdio.h>
int main()
{
	int a[100],low,high,mid,n,i,k;
	printf("enter the size of array:");
	scanf("%d",&n);
	for(i=0;i<n;i++)
	{
		printf("enter the array element %d :",i+1);
		scanf("%d",&a[i]);
	}
	printf("enter the elemnt to search:");
	scanf("%d",&k);
		low=0;
	high=n-1;
	mid=(low+high)/2;
	for(i=0;i<a[i];i++)
	{
		if(a[mid]==k)
		{

			printf("the position of %d is at %d ",k,mid);
			break;
		}
		else if(a[mid]<k)
			{
```

```
                low=mid+1; }

        else
        {
                high = mid-1; }

        mid=(low+high)/2;
    }
    if(low>high)

        {
            printf("the element is not present in given array");

        }

    return 0;
}
```

OUTPUT :

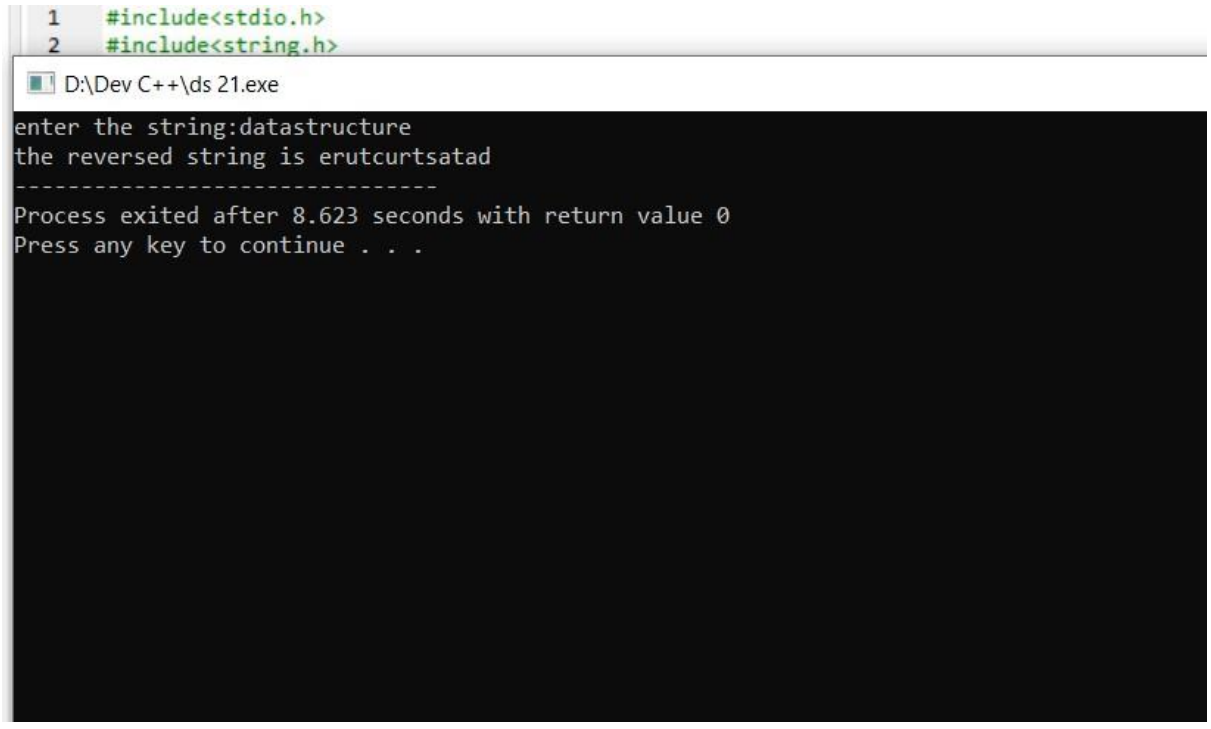


21. Write c program for reverse a string.

PROGRAM :

```
#include<stdio.h>
#include<string.h>
int main()
{
        int i;
        char a[100],b[10];
        printf("enter the string:");
        gets(a);
printf("the reversed string is %s",strrev(a));
}
```

OUTPUT :

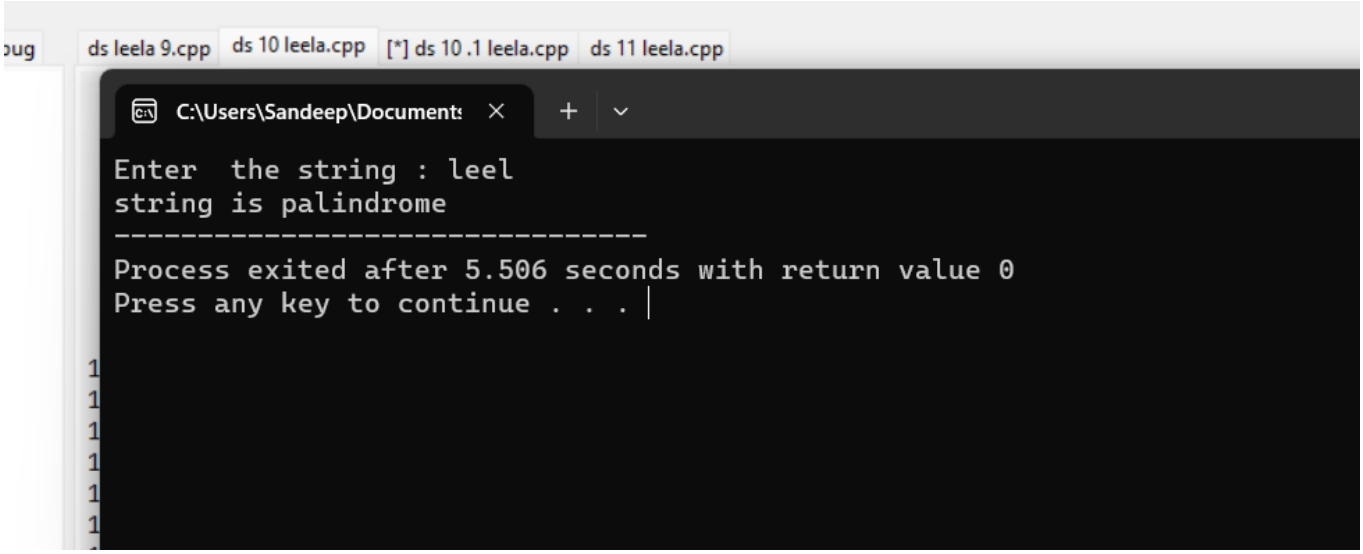


22. write a c program for check whether the string is palindrome or not.

PROGRAM:

```
#include<stdio.h>
#include<string.h>
int main()
{
        int i,c=0;
        char a[100],b[100],n;
        printf("enter the string :");
        scanf("%s",&a);
        n=strlen(a);
        for(i=0;i<n/2;i++)
        {
                if(a[i]==a[n-i-1])
{ c++;
                }
                }
                if(c==i)
                {
                        printf("string is palindrome");
                }
                else
                {
                        printf("string is not palindrome");
}}
```

OUTPUT :



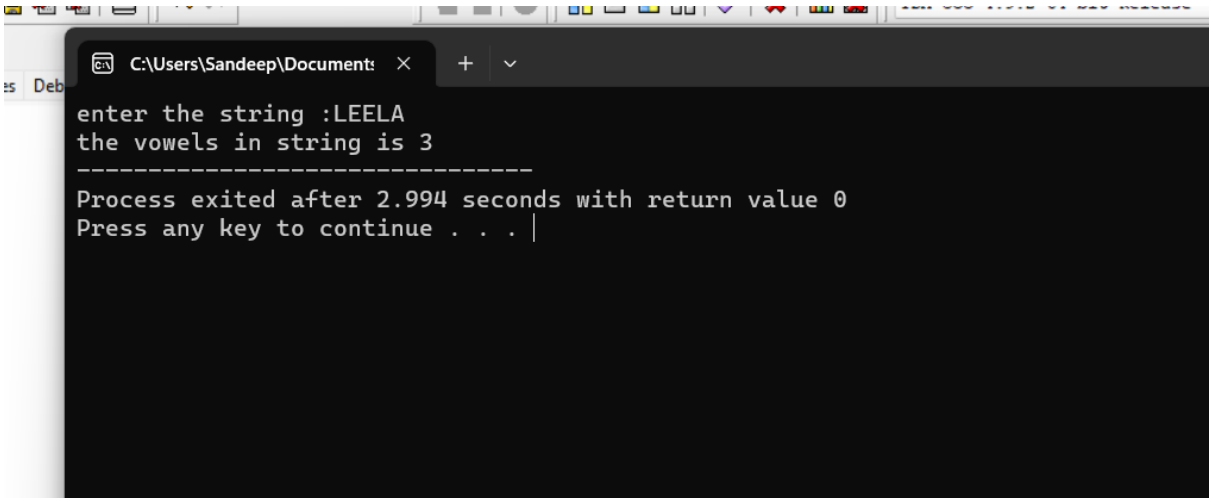
22. Write a c program to count the vowels in a string.

PROGRAM:

```
#include<stdio.h>
#include<string.h>
int main()
{
	int i,n,count=0;
	char a[100];
	printf("enter the string :");
	scanf("%s",&a);
	n=strlen(a);
	for(i=1;a[i]!='\0';i++)
	{
		if(a[i]=='a' || a[i]=='e' || a[i]=='i' || a[i]=='o' || a[i]=='u' || a[i]=='A' || a[i]=='E' || a[i]=='I' || a[i]=='O' || a[i]=='U')
		{
			count = count +1;
		}
```

```
    }
    printf("the vowels in string is %d",count);
}
```

OUTPUT :



24. Write a c program for multiply two matrices.

PROGRAM:

```
#include<stdio.h>
int main()
{
    int a[10][10],b[10][10],m[10][10],i,j,k,r,c;
    printf("enter the size of rows:");
    scanf("%d",&r);
    printf("enter the size of coloumn:");
    scanf("%d",&c);
    printf("enter the first matrix elements:");
```

```
for(i=0;i<r;i++)
{
        for(j=0;j<c;j++)
        {
                scanf("%d",&a[i][j]);
        }
}
printf("enter the second matrix elements:");
for(i=0;i<r;i++)
{
        for(j=0;j<c;j++)
        {
                scanf("%d",&b[i][j]);
        }
}
        for(i=0;i<r;i++)
{
        for(j=0;j<c;j++)
        {
                m[i][j]=0;

                        for(k=0;k<c;k++)
                        {
                                m[i][j] += a[i][k]*b[k][j];

                }}}
        printf("the resultant array is :");
for(i=0;i<r;i++)
{
```

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

OUTPUT :