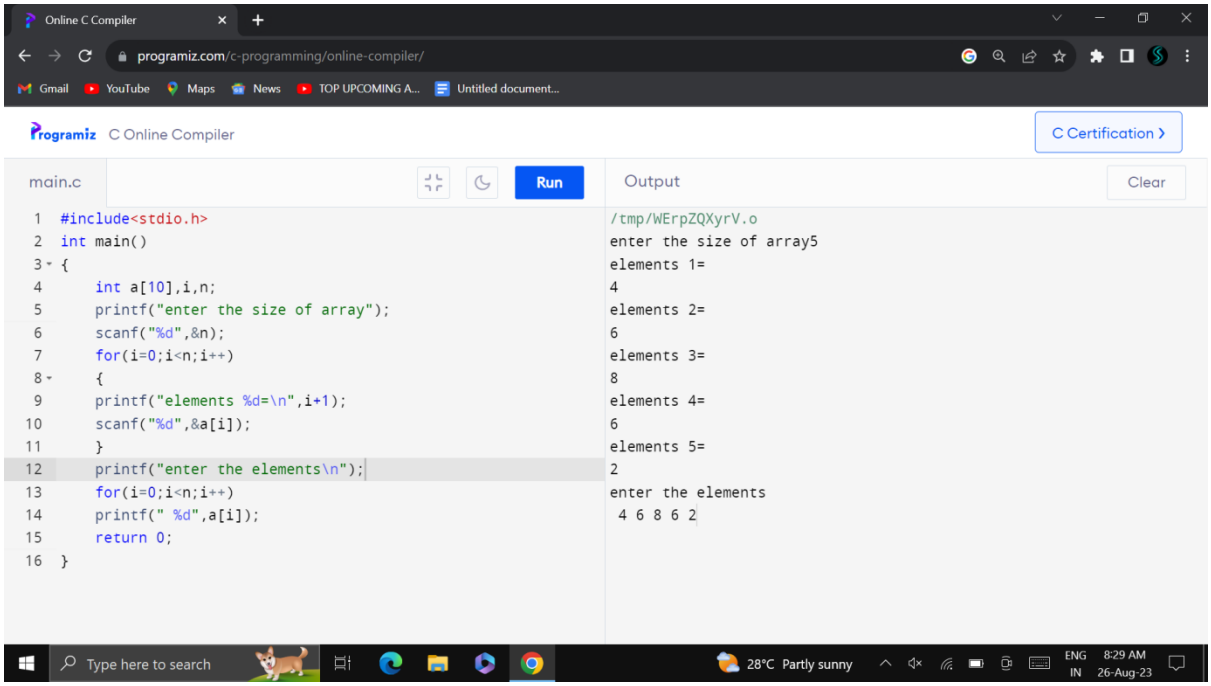
DATA STRUCTURES

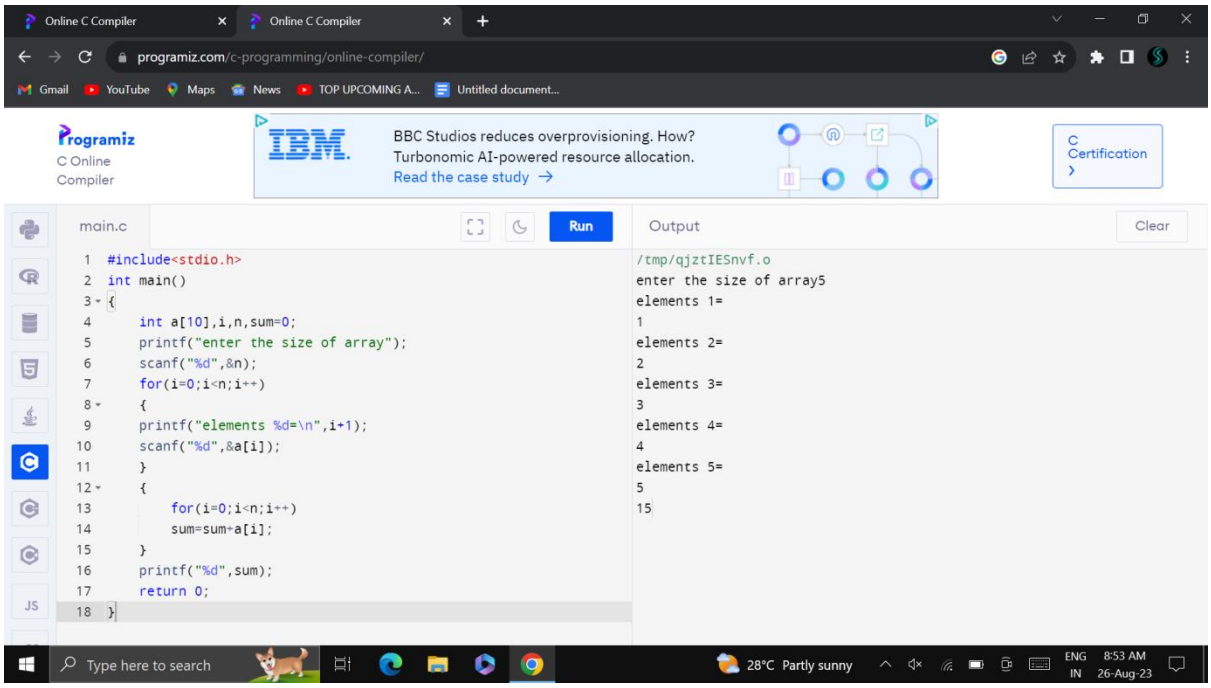
12.DYNAMICALLY INITIALIZE AND PRINT ARRAY ELEMENTS

```
#include<stdio.h>
int main()
{
        int n,a[50],i;
        printf("enter size of array");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("enter element %d=", i+1);
                scanf("%d",&a[i]);
        }
        printf("array elements are\n");
        for(i=0;i<n;i++)
        printf("%3d",a[i]);
        return 0;
}
```



13.SUM ARRAY ELEMENTS

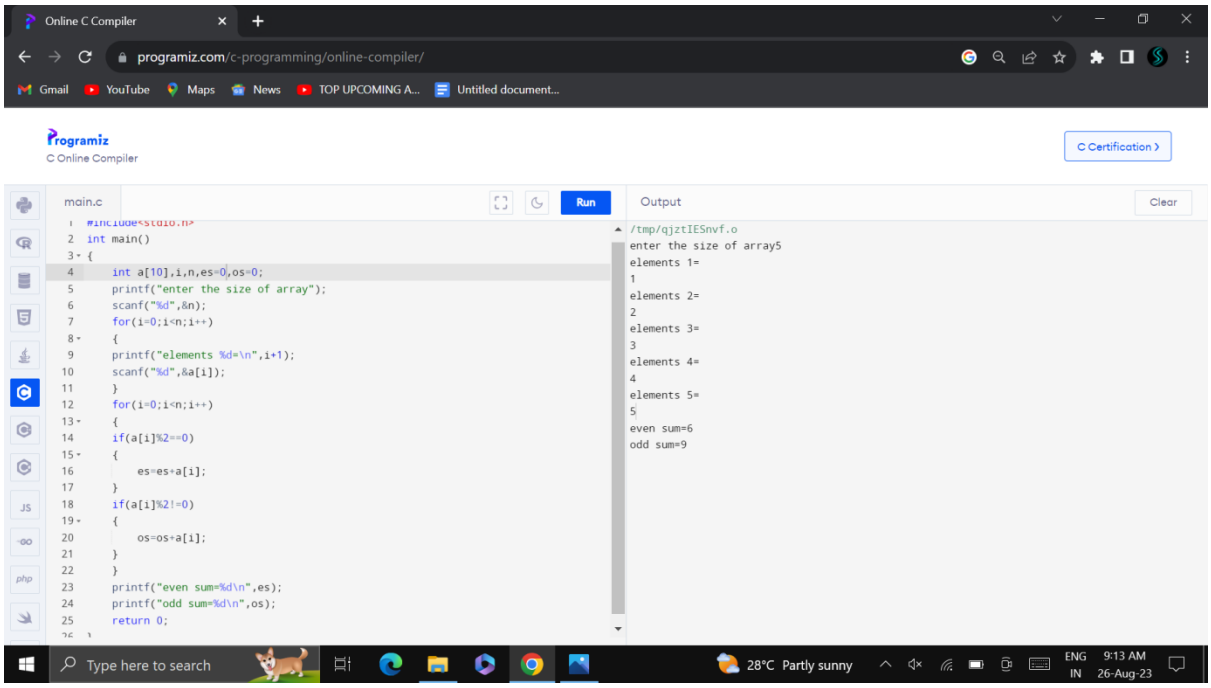
```
#include<stdio.h>
int main()
{
	int n,a[50],i,s=0;
	printf("enter size of array");
	scanf("%d",&n);
	for(i=0;i<n;i++)
	{
		printf("enter element %d=", i+1);
		scanf("%d",&a[i]);
		s=s+a[i];
	}
printf("sum=%d",s);
	return 0;
}
```



14.SUM OF ODD AND EVEN NUMBERS IN THE ARRAY

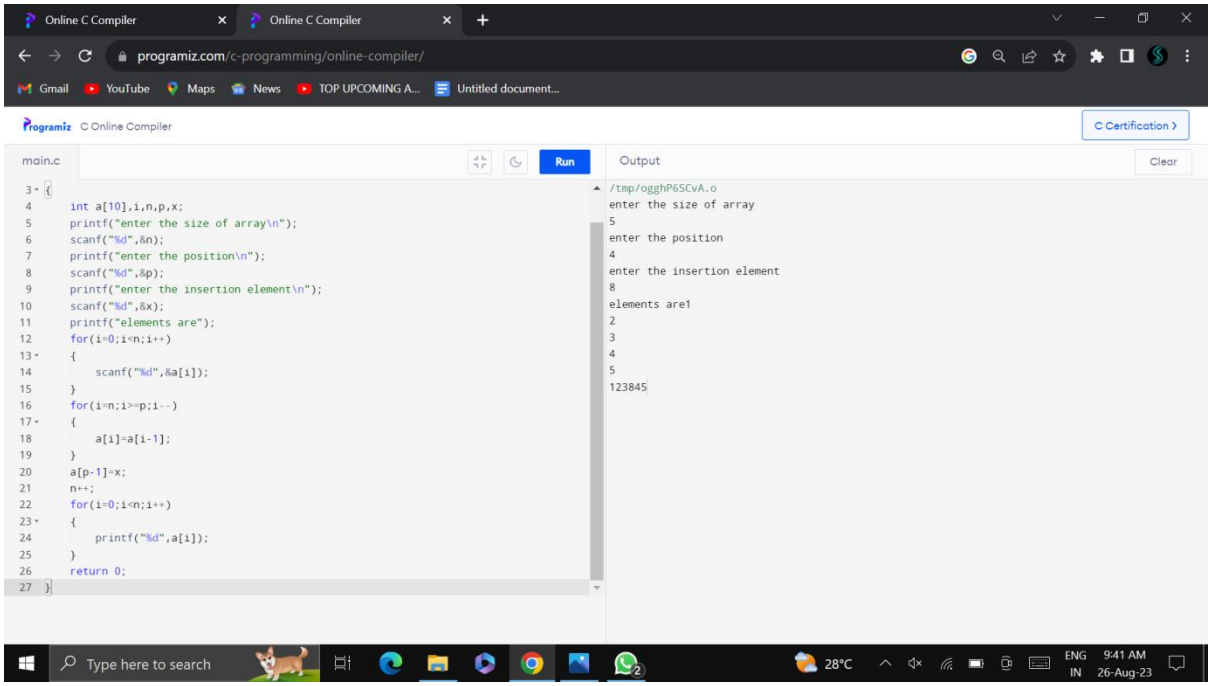
```
#include<stdio.h>
int main()
{
```

```
        int a[50],n,es=0,os=0,i;
        printf("enter size of the array");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
        printf("enter  element %d  ",i+1);
        scanf("%d",&a[i]);
  }

  for(i=0;i<n;i++)
  {
  if(i%2==0)
  es=es+a[i];
  else
  os=os+a[i];
}
  printf("evensum=%d\noddsum=%d",es,os);
  return 0;
}
```



15.INSERTING AN ELEMENT IN AN ARRAY

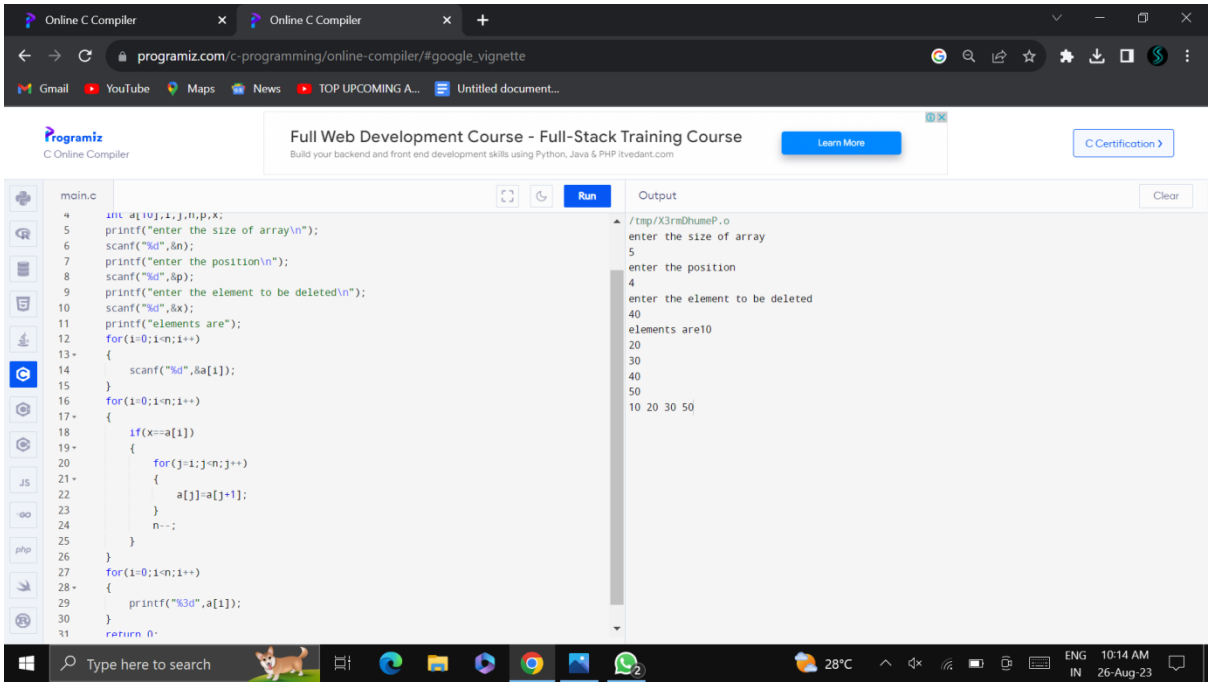
```
#include<stdio.h>
int main()
{
	int i,a[50],n,x,p;
	printf("enter array size");
	scanf("%d",&n);
	printf("enter %d values\n",n);
	for(i=0;i<n;i++)
	scanf("%d",&a[i]);
	printf("enter number to be inserted");
	scanf("%d",&x);
	printf("enter insert position");
	scanf("%d",&p);
	for(i=n;i>=p;i--)
	{
		a[i]=a[i-1];
	}
	a[p]=x;
	n++;
	for(i=0;i<n;i++)
	printf("%3d",a[i]);
	return 0;
}
```



16.DELETE AN ELEMENT IN THE ARRAY

```
#include<stdio.h>

int main()

{

        int a[10],i,j,n,x;

        printf("enter array size");

        scanf("%d",&n);

        printf("enter %d values\n",n);

        for(i=0;i<n;i++)

        scanf("%d",&a[i]);

        printf("enter number to be deleted");

        scanf("%d",&x);

        for(i=0;i<n;i++)

        {

                if(a[i]==x)

                {

                        for(j=i;j<n;j++)

                        {

                                a[j]=a[j+1];
```

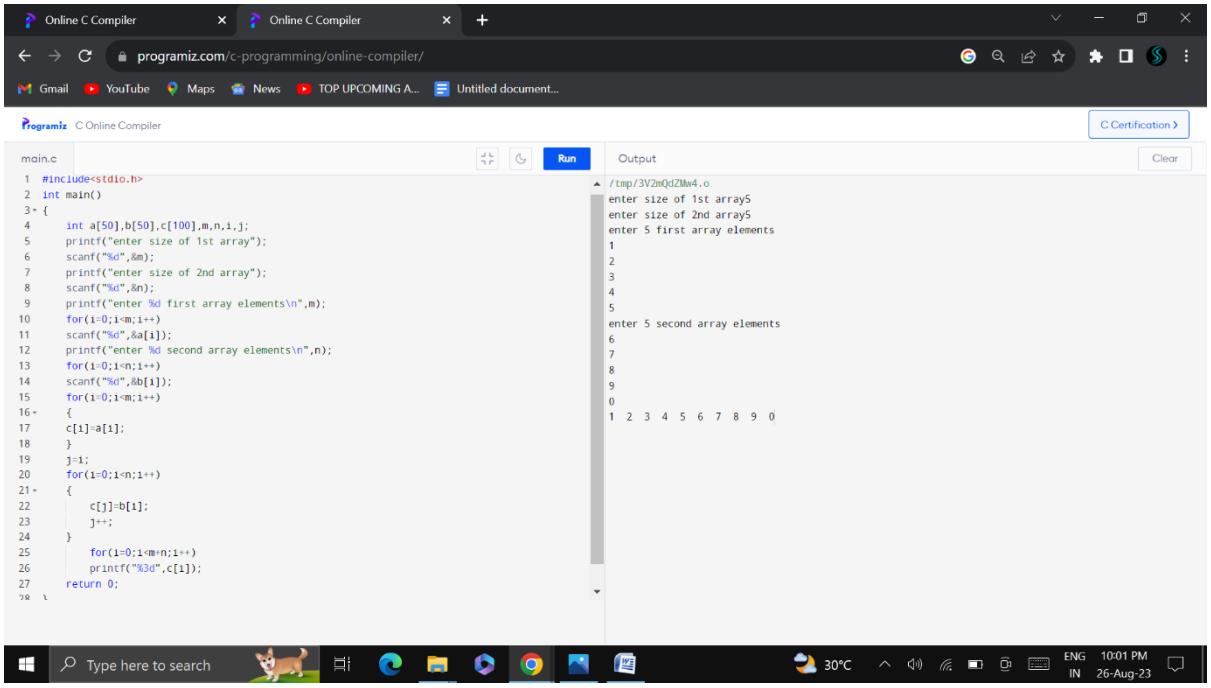
```
                    }
                    n--;
                }
        }
        for(i=0;i<n;i++)
        printf("%3d",a[i]);
}
```



17.MERGING TWO ARRYS

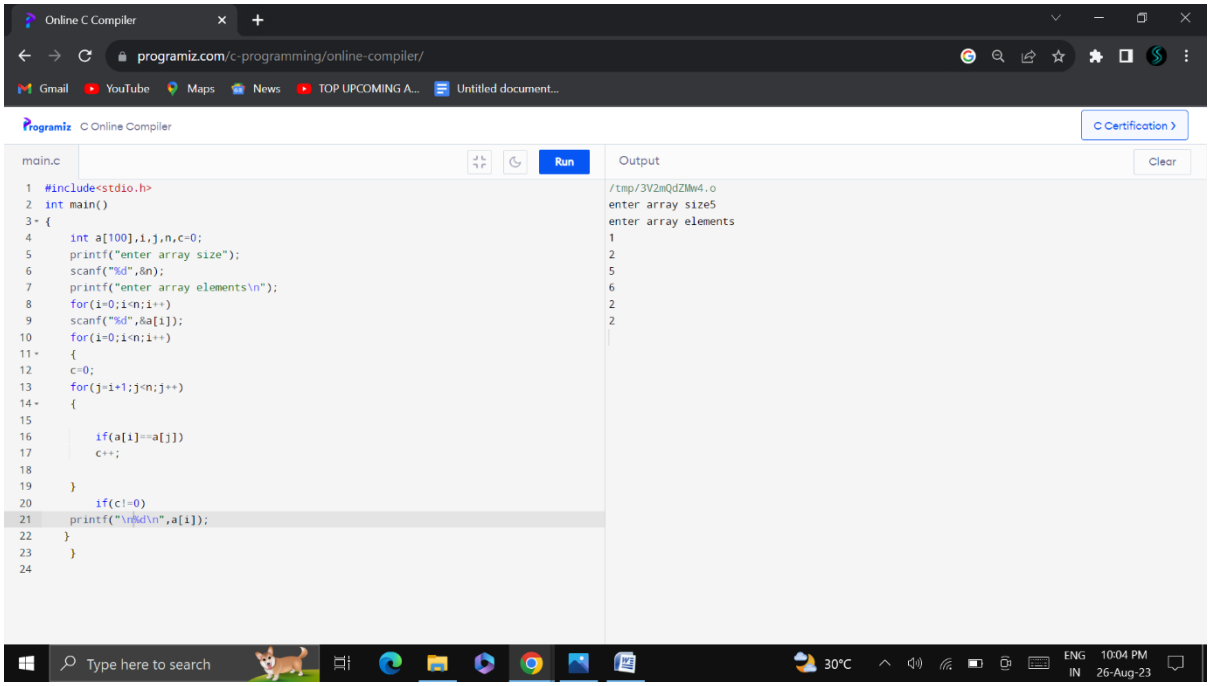
```
#include<stdio.h>
int main()
{
        int a[50],b[50],c[100],m,n,i,j;
        printf("enter size of 1st array");
        scanf("%d",&m);
        printf("enter size of 2nd array");
        scanf("%d",&n);
        printf("enter %d first array elements\n",m);
        for(i=0;i<m;i++)
```

```
        scanf("%d",&a[i]);
        printf("enter %d second array elements\n",n);
        for(i=0;i<n;i++)
        scanf("%d",&b[i]);
        for(i=0;i<m;i++)
        {
        c[i]=a[i];
  }
        j=i;
        for(i=0;i<n;i++)
        {
                c[j]=b[i];
                j++;
        }
                for(i=0;i<m+n;i++)
                printf("%3d",c[i]);
        return 0;
}
```



18.FINDING DUPLICATE ELEMENTS

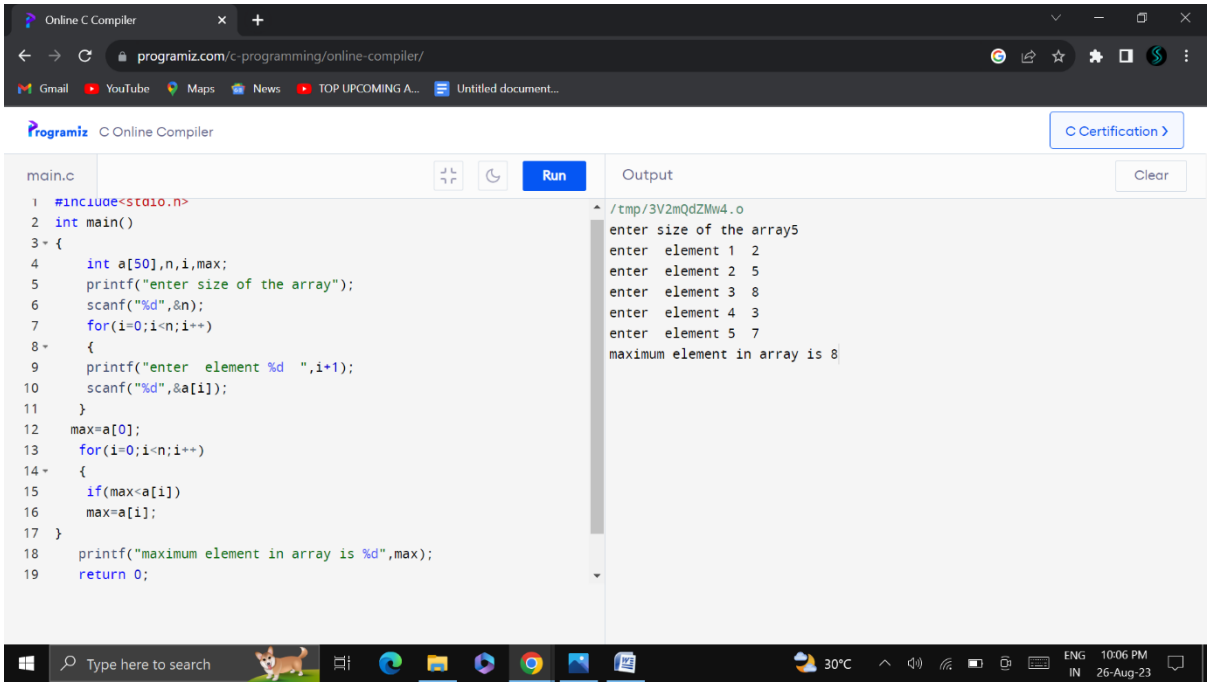
```
#include<stdio.h>
int main()
{
        int a[100],i,j,n,c=0;
        printf("enter array size");
        scanf("%d",&n);
        printf("enter array elements\n");
        for(i=0;i<n;i++)
        scanf("%d",&a[i]);
        for(i=0;i<n;i++)
        {
        c=0;
        for(j=i+1;j<n;j++)
      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

                if(a[i]==a[j])
                c++;

        }
                if(c!=0)
        printf("\n%d\n",a[i]);
  }
        }
```



19.FINDING GREATEST ELEMENT IN AN ARRAY

```
#include<stdio.h>
int main()
{
        int a[50],n,i,max;
        printf("enter size of the array");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
        printf("enter  element %d  ",i+1);
        scanf("%d",&a[i]);
  }
 max=a[0];
  for(i=0;i<n;i++)
  {
   if(max<a[i])
   max=a[i];
}
```

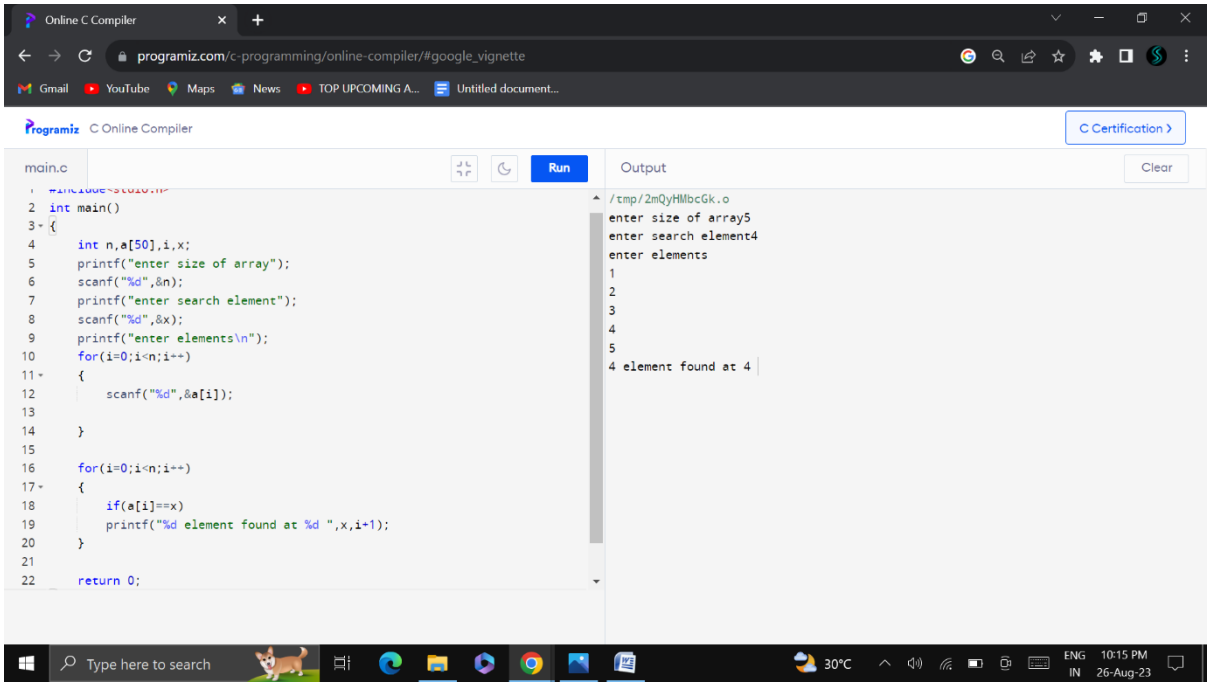
```
    printf("maximum element in array is %d",max);
    return 0;
}
```



20.LINEAR SEARCH

```
#include<stdio.h>
int main()
{
        int n,a[50],i,x;
        printf("enter size of array");
        scanf("%d",&n);
        printf("enter elements\n");
        for(i=0;i<n;i++)
        {
                scanf("%d",&a[i]);

        }
        printf("enter search element");
        scanf("%d",&x);
        for(i=0;i<n;i++)
```

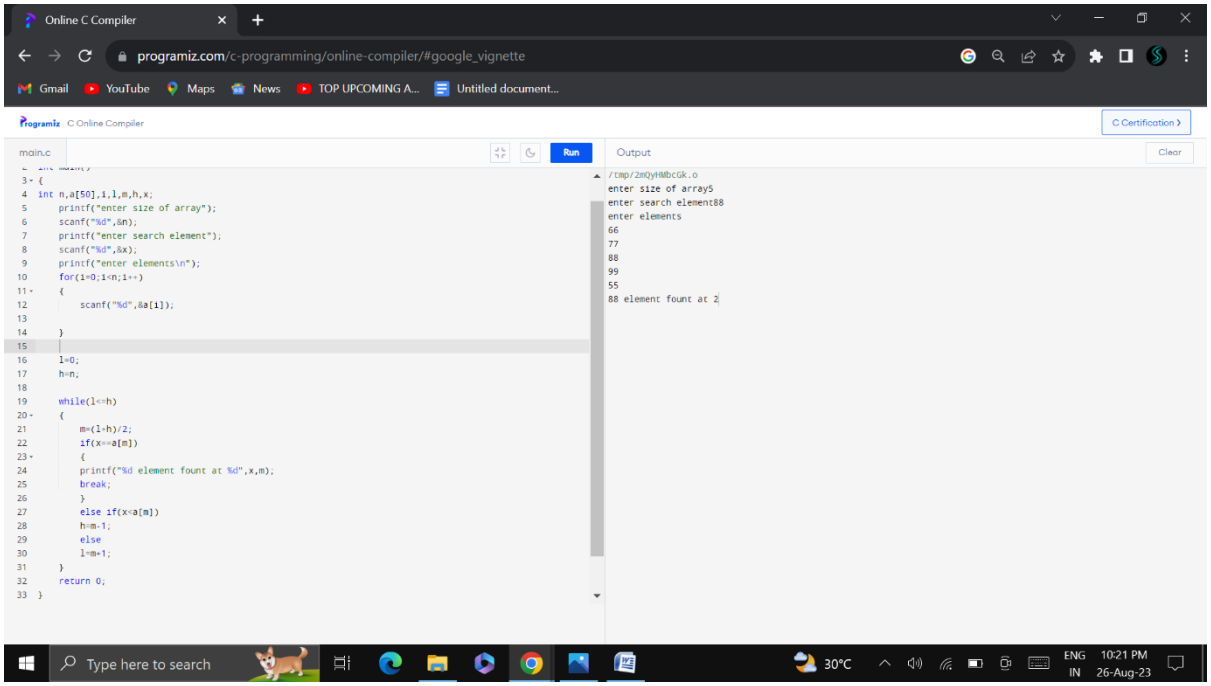
```
    {
        if(a[i]==x)
        printf("%d element found at %d ",x,i+1);
    }

    return 0;
}
```



21BINARY SEARCH

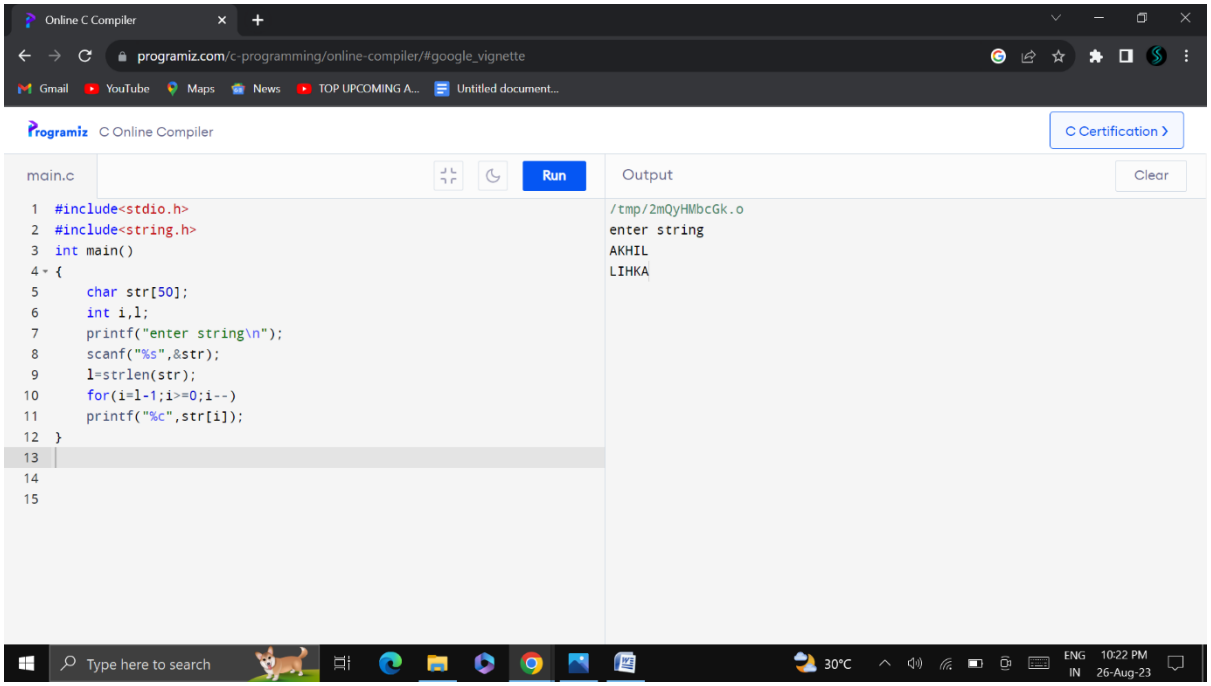
```
#include<stdio.h>

int main()

{

int n,a[50],i,l,m,h,x;

        printf("enter size of array");

        scanf("%d",&n);

        printf("enter elements\n");

        for(i=0;i<n;i++)

        {

                scanf("%d",&a[i]);
```

```
        }
        printf("enter search element");
        scanf("%d",&x);
        l=0;
        h=n;

        while(l<=h)
        {
                m=(l+h)/2;
                if(x==a[m])
                {
                printf("%d element found at %d",x,m);
                break;
           }
           else if(x<a[m])
           h=m-1;
           else
           l=m+1;
        }
        return 0;
}
```



21.REVERSING THE GIVEN STRING

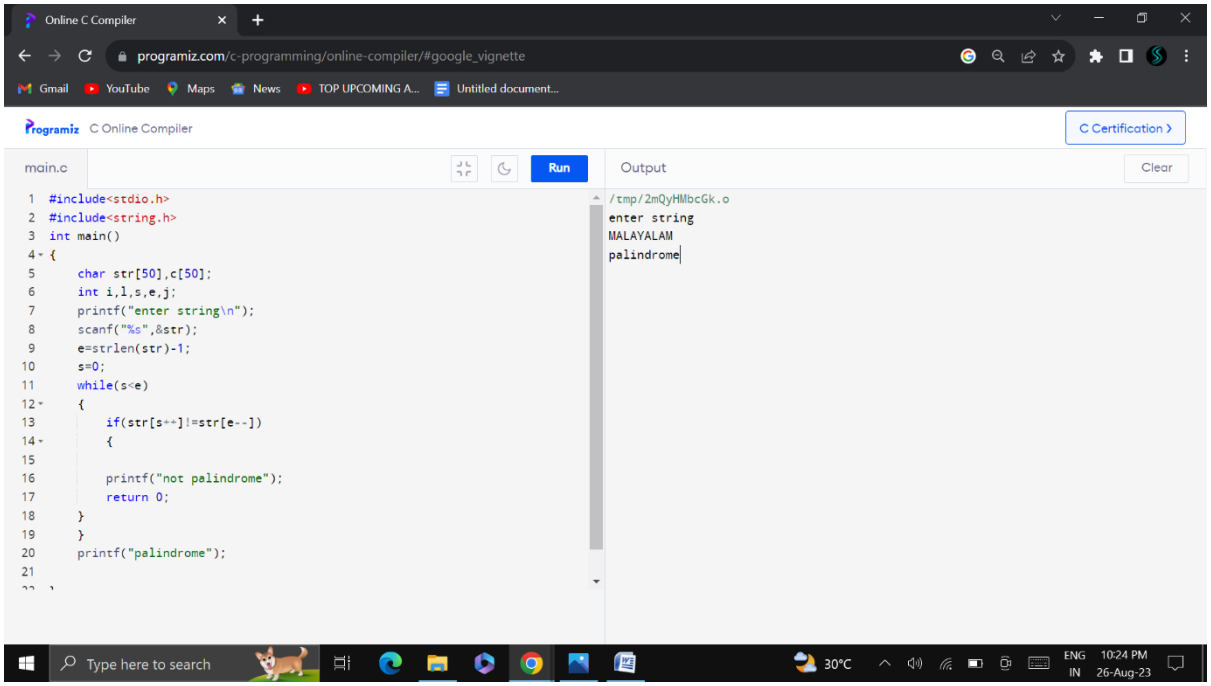
```
#include<stdio.h>

#include<string.h>

int main()

{

        char str[50];

        int i,l;

        printf("enter string\n");

        scanf("%s",&str);

        l=strlen(str);

        for(i=l-1;i>=0;i--)

        printf("%c",str[i]);

}
```



22.STRING PALINDROME

```
#include<stdio.h>
#include<string.h>
int main()
{
        char str[50],c[50];
        int i,l,s,e,j;
        printf("enter string\n");
        scanf("%s",&str);
        e=strlen(str)-1;
        s=0;
        while(s<e)
        {
                if(str[s++]!=str[e--])
                {

                printf("not palindrome");
                return 0;
        }
```

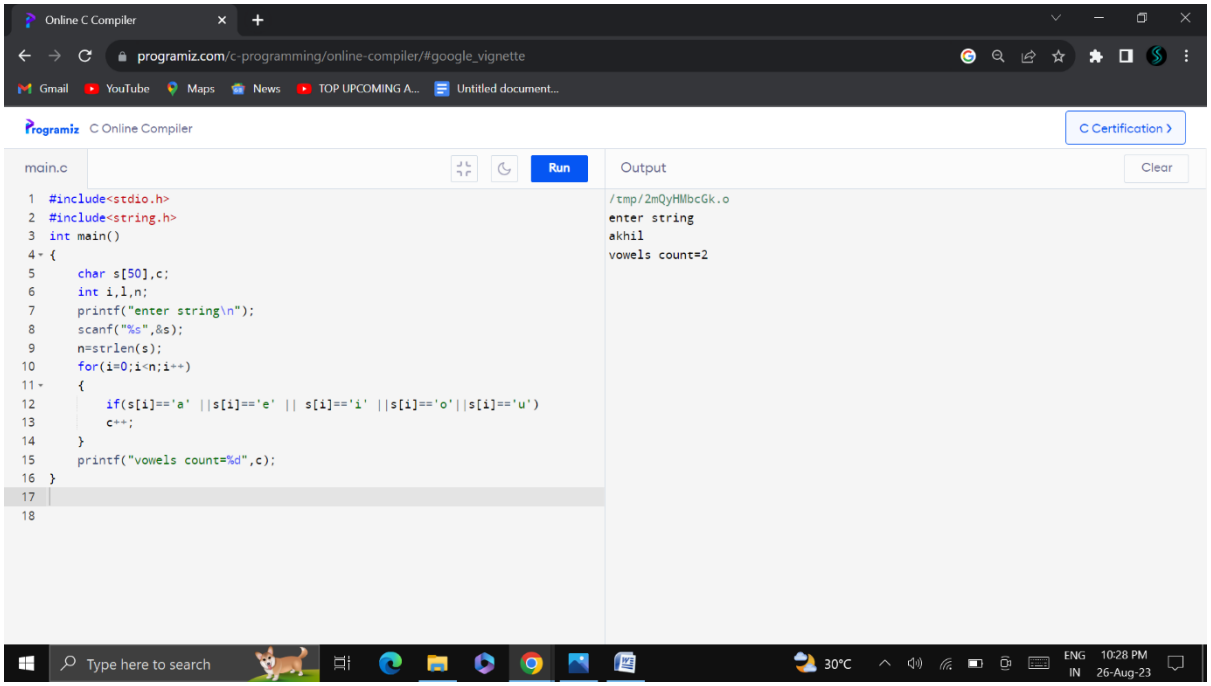
```
        }
    printf("palindrome");


}
```



23.VOWELS COUNT IN A STRING

```
#include<stdio.h>
#include<string.h>
int main()
{
        char s[50],c;
        int i,l,n;
        printf("enter string\n");
        scanf("%s",&s);
        n=strlen(s);
        for(i=0;i<n;i++)
        {
                if(s[i]=='a' ||s[i]=='e' || s[i]=='i' ||s[i]=='o'||s[i]=='u')
                c++;
        }
```

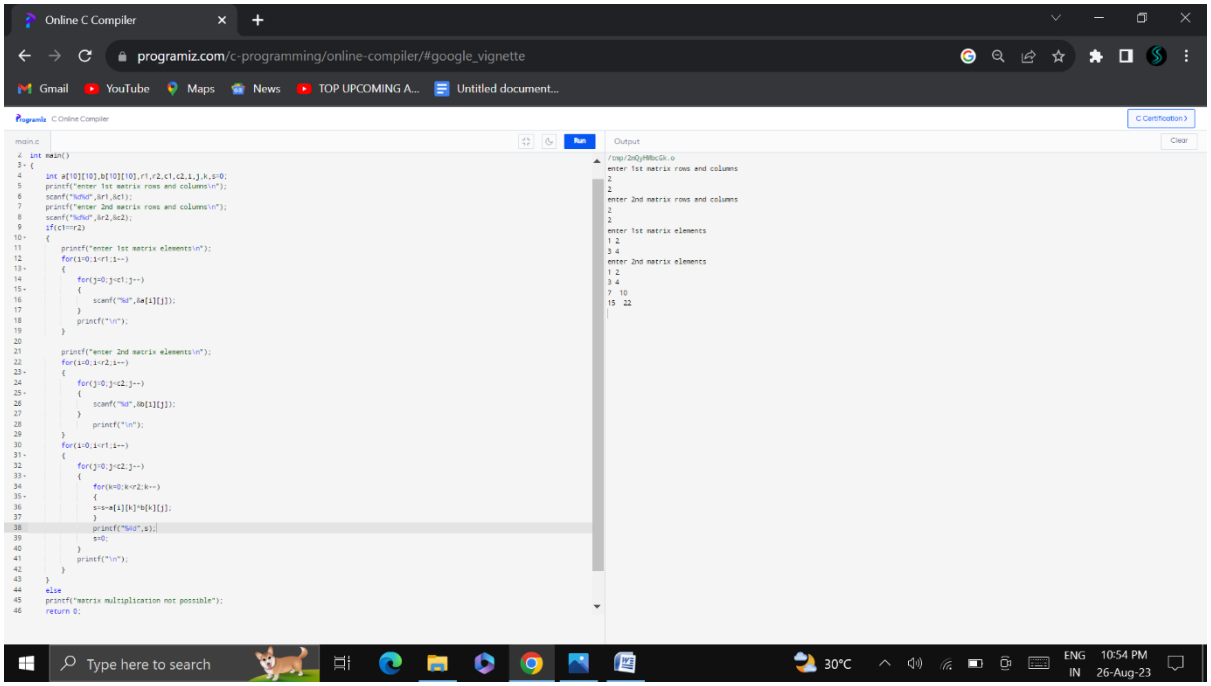
```
    printf("vowels count=%d",c);
}
```



24.MATRIX MULTIPLICATION

```
#include<stdio.h>
int main()
{
    int a[10][10],b[10][10],r1,r2,c1,c2,i,j,k,s=0;
    printf("enter 1st matrix rows and columns\n");
    scanf("%d%d",&r1,&c1);
    printf("enter 2nd matrix rows and columns\n");
    scanf("%d%d",&r2,&c2);
    if(c1==r2)
    {
        printf("enter 1st matrix elements\n");
        for(i=0;i<r1;i++)
        {
            for(j=0;j<c1;j++)
            {
                scanf("%d",&a[i][j]);
```

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

    printf("enter 2nd matrix elements\n");
            for(i=0;i<r2;i++)
            {
                for(j=0;j<c2;j++)
                {
                    scanf("%d",&b[i][j]);
                }
                    printf("\n");
            }
            for(i=0;i<r1;i++)
            {
                for(j=0;j<c2;j++)
                {
                    for(k=0;k<r2;k++)
                    {
                    s=s+a[i][k]*b[k][j];
                    }
                    printf("%4d",s);
                    s=0;
                }
                printf("\n");
            }
        }
        else
        printf("matrix multiplication not possible");
        return 0;
}
```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Gmail
YouTube
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News
TOP UPCOMING A...
Untitled document...
Programiz C Online Compiler
C Certification
main.c
Run
Output
Clear
/tmp/2mQyH8bcGk.o
enter 1st matrix rows and columns
2
2
enter 2nd matrix rows and columns
2
2
enter 1st matrix elements
1 2
3 4
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1 2
3 4
7 10
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