

13.write a c program to calculate sum of elements in array?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int n,a[100],i,sum=0;

    printf("enter the size of array:");

    scanf("%d",&n);

    printf("\n enter the elements in array:");

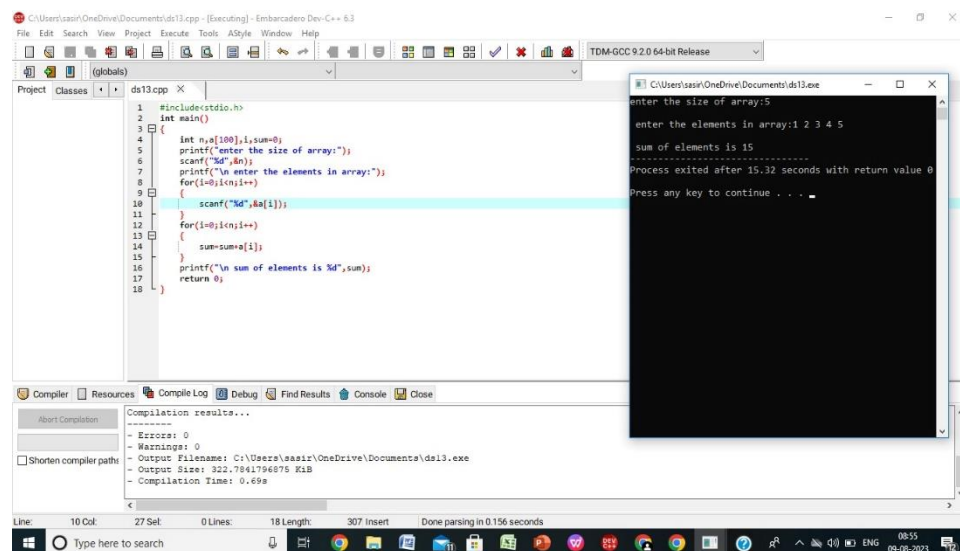
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }

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

    printf("\n sum of elements is %d",sum);

    return 0;
}
```

OUTPUT:

The screenshot shows a C program being compiled and executed. The code in the editor is the same as provided in the previous block. The console window shows the following output: "enter the size of array:5", "enter the elements in array:1 2 3 4 5", "sum of elements is 15", followed by a separator line of dashes, "Process exited after 15.32 seconds with return value 0", and "Press any key to continue . . .". The compiler window at the bottom shows "Compilation results..." with 0 errors and 0 warnings. The output filename is "C:\Users\sasir\OneDrive\Documents\ds13.exe", the output size is "322.7841796875 Kib", and the compilation time is "0.69s". The status bar at the bottom indicates "Line: 10 Col: 27 Set: 0 Lines: 18 Length: 307 Insert: Done parsing in 0.156 seconds".

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,a[100],i,sum=0;
5     printf("enter the size of array:");
6     scanf("%d",&n);
7     printf("\n enter the elements in array:");
8     for(i=0;i<n;i++)
9     {
10         scanf("%d",&a[i]);
11     }
12     for(i=0;i<n;i++)
13     {
14         sum=sum+a[i];
15     }
16     printf("\n sum of elements is %d",sum);
17     return 0;
18 }
```

enter the size of array:5
enter the elements in array:1 2 3 4 5
sum of elements is 15

Process exited after 15.32 seconds with return value 0
Press any key to continue . . .

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds13.exe
- Output Size: 322.7841796875 Kib
- Compilation Time: 0.69s

14.write a c program to merge two array?

PROGRAM:

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

```
int main()
```

```
{
```

```
    int m,n,a[100],b[100],c[100],i,j,k=0;
```

```
    printf("enter the size of first array:");
```

```
    scanf("%d",&m);
```

```
    printf("\n enter the elements in array:");
```

```
    for(i=0;i<m;i++)
```

```
    {
```

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

```
        c[i]=a[i];
```

```
    }
```

```
    k=i;
```

```
    printf("\n enter the size of second array:");
```

```
    scanf("%d",&n);
```

```
    printf("\n enter the elements in array:");
```

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

```
    {
```

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

```
        c[k]=b[i];
```

```
        k++;
```

```
    }
```

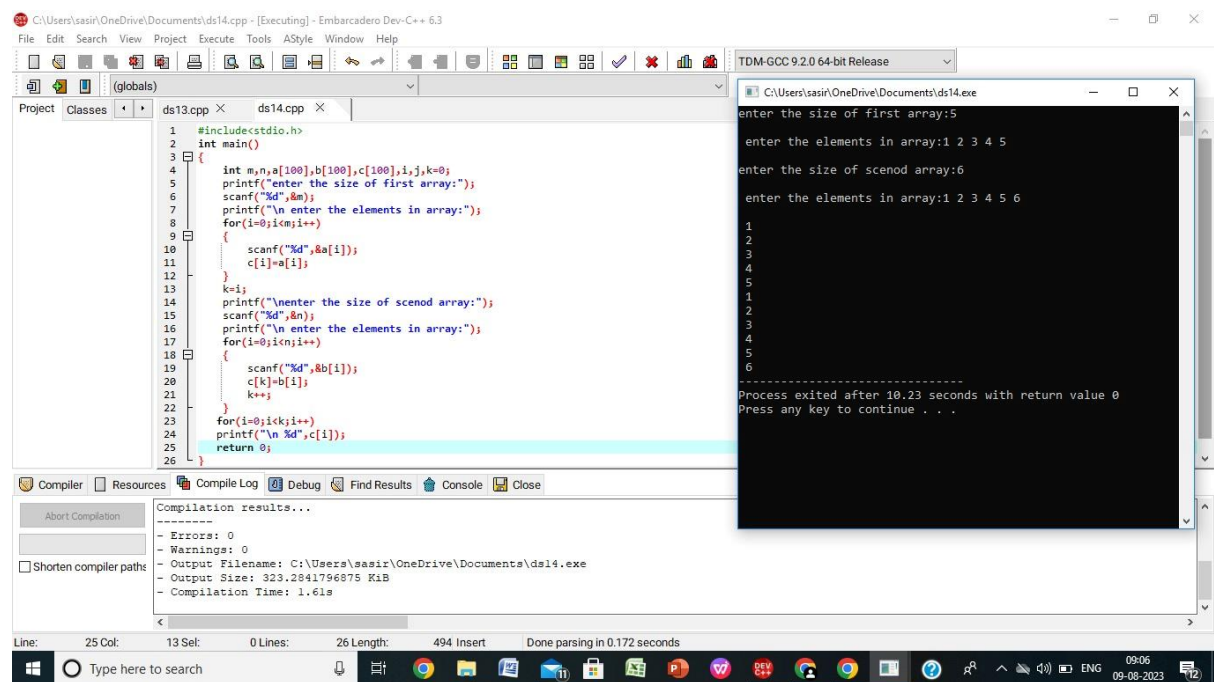
```
    for(i=0;i<k;i++)
```

```
    printf("\n %d",c[i]);
```

```
    return 0;
```

```
}
```

OUTPUT:



The screenshot displays an IDE window titled "C:\Users\sasin\OneDrive\Documents\ds14.cpp - [Executing] - Embarcadero Dev-C++ 6.3". The main editor shows the source code for `ds14.cpp`, which implements a matrix multiplication algorithm. The code includes headers, declares arrays `a`, `b`, and `c`, and uses nested loops to calculate the product. A console window on the right shows the program's execution, including prompts for array sizes and elements, and the final output of the matrix `c`.

```
1 #include<stdio.h>
2 int main()
3 {
4     int m,n,a[100],b[100],c[100],i,j,k=0;
5     printf("enter the size of first array:");
6     scanf("%d",&m);
7     printf("\n enter the elements in array:");
8     for(i=0;i<m;i++)
9     {
10         scanf("%d",&a[i]);
11         c[i]=a[i];
12     }
13     k=i;
14     printf("\n enter the size of scenod array:");
15     scanf("%d",&n);
16     printf("\n enter the elements in array:");
17     for(i=0;i<n;i++)
18     {
19         scanf("%d",&b[i]);
20         c[k]=b[i];
21         k++;
22     }
23     for(i=0;i<k;i++)
24         printf("\n %d",c[i]);
25     return 0;
26 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasin\OneDrive\Documents\ds14.exe
- Output Size: 323,2841796875 KiB
- Compilation Time: 1.61s

Line: 25 Col: 13 Sel: 0 Lines: 26 Length: 494 Insert Done parsing in 0.172 seconds

enter the size of first array:5
enter the elements in array:1 2 3 4 5
enter the size of scenod array:6
enter the elements in array:1 2 3 4 5 6
1
2
3
4
5
6

Process exited after 10.23 seconds with return value 0
Press any key to continue . . .

15.write a c program to perform insertion and deletion in the middle in an array?

PROGRAM:

```
#include <conio.h>

int main ()
{
    int arr[50];
    int pos,i,num;
    printf (" \n Enter the number of elements in an array: \n ");
    scanf ("%d",&num);
    printf ("\n Enter %d elements in array: \n ",num);
    for (i=0;i<num;i++)
    {   printf ("arr[%d]=",i);
        scanf ("%d",&arr[i]);
    }
    printf("Delete the element:\n");
    scanf ("%d",&pos);
    if (pos>=num+1)
    {
        printf (" \n Delete is not possible.");
    }
    else
    {
        for (i=pos-1;i<num-1;i++)
        {
            arr[i]=arr[i+1];
        }
        printf (" \n The resultant array is: \n");
        for (i=0;i<num-1;i++)
        {
            printf (" arr[%d] = ",i);
            printf (" %d \n",arr[i]);
        }
    }
}
```

```

    }

}

return 0;

}

```

OUTPUT:

The screenshot shows an IDE window titled "C:\Users\sasir\OneDrive\Documents\ds15.cpp - [Executing] - Embarcadero Dev-C++ 6.3". The code in the editor is as follows:

```

1 #include <stdio.h>
2 #include <conio.h>
3 int main ()
4 {
5     int arr[50];
6     int pos,i,num;
7     printf ("\n Enter the number of elements in an array: \n ");
8     scanf ("%d",&num);
9     printf ("\n Enter %d elements in array: \n ",num);
10    for (i=0;i<num;i++)
11    {
12        printf ("%d=",i);
13        scanf ("%d",&arr[i]);
14    }
15    printf("Delete the element:\n");
16    scanf ("%d",&pos);
17    if (pos>num+1)
18    {
19        printf ("\n Delete is not possible.");
20    }
21    else
22    {
23        for (i=pos-1;i<num-1;i++)
24        {
25            arr[i]=arr[i+1];
26        }
27        printf ("\n The resultant array is: \n");
28        for (i=0;i<num-1;i++)
29        {
30            printf ("%d=",i);
31            printf ("%d \n",arr[i]);
32        }
33    }
34    return 0;

```

The output window shows the following execution:

```

Enter the number of elements in an array:
5

Enter 5 elements in array:
arr[0]=1
arr[1]=2
arr[2]=3
arr[3]=4
arr[4]=5
Delete the element:
2

The resultant array is:
arr[0] = 1
arr[1] = 3
arr[2] = 4
arr[3] = 5

-----
Process exited after 7.355 seconds with return value 0
Press any key to continue . . .

```

The IDE also shows the compilation results in the bottom panel:

```

Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds15.exe
- Output Size: 323.453125 KiB
- Compilation Time: 0.61s

```

16.write a c program to reverse a string?

PROGRAM:

```
#include<stdio.h>

#include<string.h>

int main()
{
    char str[50];

    printf("enter a string to be reversed:");

    scanf("%s",str);

    printf("\n after reverse of a string:%s",strrev(str));

    return 0;
}
```

OUTPUT:

The screenshot shows the Embarcadero Dev-C++ 6.3 IDE. The main window displays the C program code for reversing a string. The code includes `<stdio.h>` and `<string.h>`, defines a character array `str` of size 50, prompts the user to enter a string, reads the input, and prints the reversed string using `strrev`. The console window shows the execution output: "enter a string to be reversed:unahb", "after reverse of a string:bhanu", and a message indicating the process exited after 5.34 seconds. The bottom status bar shows the current line and column (Line: 8, Col: 44).

```
1 #include<stdio.h>
2 #include<string.h>
3 int main()
4 {
5     char str[50];
6     printf("enter a string to be reversed:");
7     scanf("%s",str);
8     printf("\n after reverse of a string:%s",strrev(str));
9 }
10 public int __cdecl printf(const char * __restrict __Format, ...)
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds16.exe
- Output Size: 322.955078125 KiB
- Compilation Time: 1.14s

Line: 8 Col: 44 Sel: 0 Lines: 10 Length: 204 Insert Done parsing in 0.032 seconds

17.write a c program to check the given string is palindrome or not?

PROGRAM:

```
#include<stdio.h>

#include<string.h>

int main()
{
    char s[50];

    int i,n,c=0;

    printf("enter a string :");

    gets(s);

    n=strlen(s);

    for(i=0;i<n;i++)
    {
        if(s[i]==s[n-i-1])
            c++;
    }

    if(c==i)

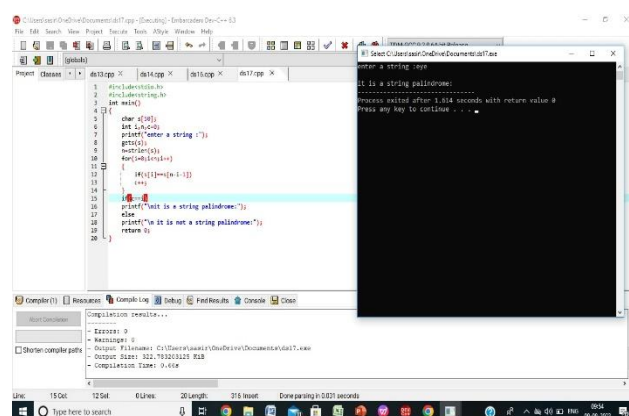
        printf("\nit is a string palindrome:");

    else

        printf("\n it is not a string palindrome:");

    return 0;
}
```

OUTPUT:



18.write a c program to search a particular character in given string?

PROGRAM:

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

```
#include <string.h>
```

```
int main() {
```

```
    char str[100];
```

```
    char key;
```

```
    int i, len;
```

```
    int found = 0;
```

```
    printf("Enter a string: ");
```

```
    scanf("%s", str);
```

```
    printf("Enter the element to search: ");
```

```
    scanf(" %c", &key);
```

```
    len = strlen(str);
```

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

```
        if (str[i] == key) {
```

```
            found = 1;
```

```
            break;
```

```
        }
```

```
    }
```

```
    if (found) {
```

```
        printf("%c is found at position %d in the string\n", key, i+1);
```

```
    } else {
```

```
        printf("%c is not found in the string\n", key);
```

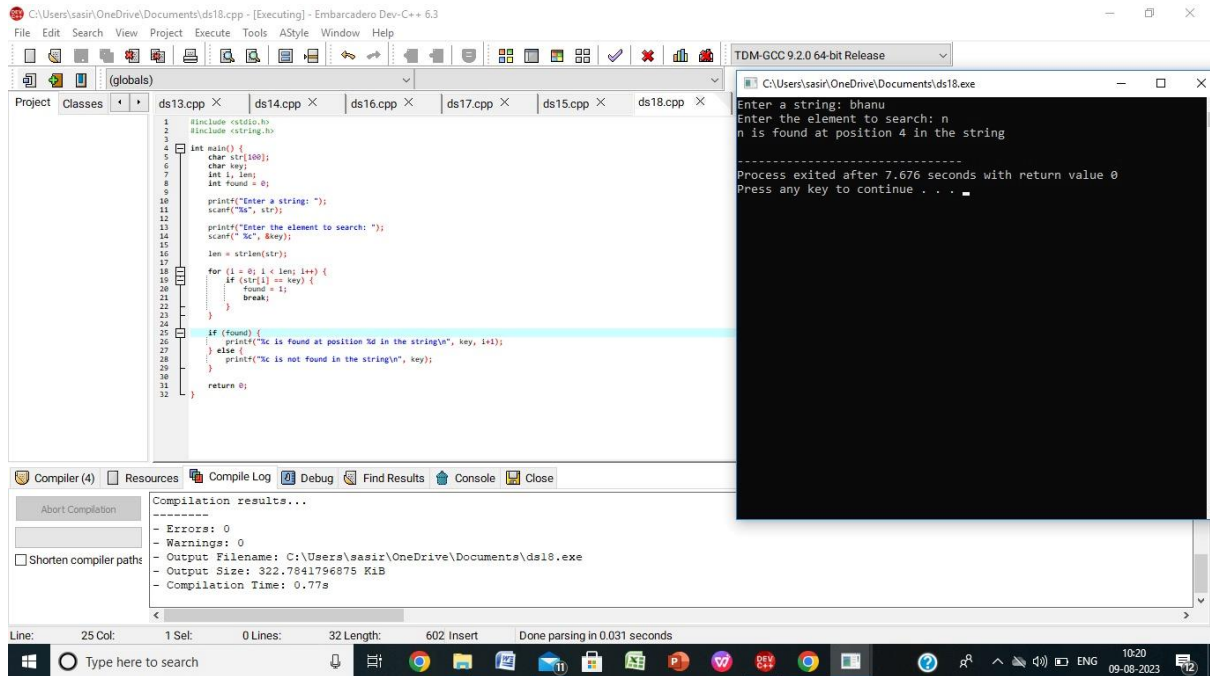
```
    }
```



```
return 0;
```

```
}
```

OUTPUT:



19.write a c program to count number of times a,e,l,o,u present in given string?

PROGRAM:

```
#include<stdio.h>

#include<string.h>

int main()
{
    int c=0,count=0;

    char s[1000];

    printf(" enter the string:");

    gets(s);

    while (s[c]!='\0')
    {
        if(s[c]=='a' || s[c]=='A' || s[c]=='e' || s[c]=='E' || s[c]=='i' || s[c]=='I' ||
s[c]=='o' || s[c]=='O' || s[c]=='u' || s[c]=='U')

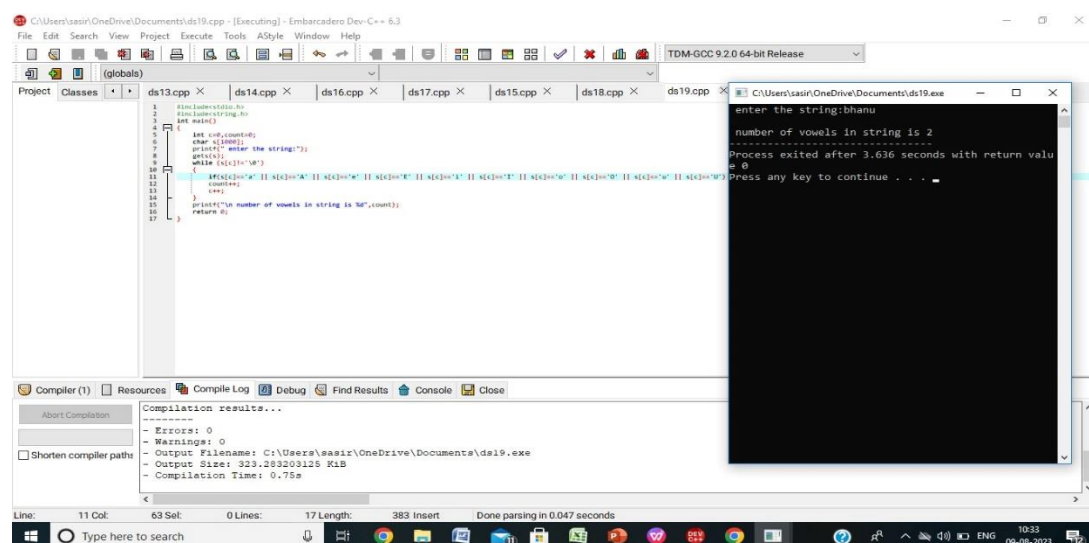
            count++;

        c++;
    }

    printf("\n number of vowels in string is %d",count);

    return 0;
}
```

OUTPUT:



20.write a c program to perform matrix multiplication?

PROGRAM:

```
#include<stdio.h>

#include<stdlib.h>

int main(){

int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;

system("cls");

printf("enter the number of row=");

scanf("%d",&r);

printf("enter the number of column=");

scanf("%d",&c);

printf("enter the first matrix element=\n");

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

{

for(j=0;j<c;j++)

{

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

}

}

printf("enter the second matrix element=\n");

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

{

for(j=0;j<c;j++)

{

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

}

}

printf("multiply of the matrix=\n");
```

```
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
mul[i][j]=0;
for(k=0;k<c;k++)
{
mul[i][j]+=a[i][k]*b[k][j];
}
}
}
//for printing result
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
printf("%d\t",mul[i][j]);
}
printf("\n");
}
return 0;
}
```

The screenshot shows a Windows desktop with a Visual Studio IDE. The main window displays a C++ program for matrix multiplication. The program prompts the user to enter the number of rows and columns for two matrices, then enters the elements of each matrix, and finally prints the resulting matrix. The program has been compiled successfully, and the output window shows the execution results, including the input values and the resulting matrix.

Code Snippet (ds20.cpp):

```

1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int r1,c1,r2,c2;
6     cout<<"Enter the number of rows="<<endl;
7     cin>>r1;
8     cout<<"Enter the number of columns="<<endl;
9     cin>>c1;
10    int a[r1][c1];
11    for(int i=0;i<r1;i++)
12        for(int j=0;j<c1;j++)
13            a[i][j]=rand()%100;
14
15    cout<<"Matrix A is:"<<endl;
16    for(int i=0;i<r1;i++)
17        for(int j=0;j<c1;j++)
18            cout<<a[i][j]<<" ";
19
20    //Enter print log result
21    for(int i=0;i<r1;i++)
22        for(int j=0;j<c1;j++)
23            cout<<a[i][j]<<" ";
24
25    //Enter print log result
26    for(int i=0;i<r1;i++)
27        for(int j=0;j<c1;j++)
28            cout<<a[i][j]<<" ";
29
30    //Enter print log result
31    for(int i=0;i<r1;i++)
32        for(int j=0;j<c1;j++)
33            cout<<a[i][j]<<" ";
34
35    //Enter print log result
36    for(int i=0;i<r1;i++)
37        for(int j=0;j<c1;j++)
38            cout<<a[i][j]<<" ";
39
40    //Enter print log result
41    for(int i=0;i<r1;i++)
42        for(int j=0;j<c1;j++)
43            cout<<a[i][j]<<" ";
44
45    //Enter print log result
46    for(int i=0;i<r1;i++)
47        for(int j=0;j<c1;j++)
48            cout<<a[i][j]<<" ";
49
50    return 0;
51 }

```

Output Window:

```

C:\Users\sasir\OneDrive\Documents\ds20.exe
Enter the number of rows=3
Enter the number of columns=3
Enter the first matrix element=
1 2 3 4 5 6 7 8 9
Enter the second matrix element=
1 2 3 4 5 6 7 8 9
Multiply of the matrix=
30 36 42
66 81 96
102 126 150

Process exited after 29.58 seconds with return value 0
Press any key to continue . . .

```

Compilation Results:

```

Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds20.exe
- Output Size: 324.2958984375 KiB
- Compilation Time: 0.94s

```

21.write a c program to perform on string manipulation?

PROGRAM:

```
#include <stdio.h>

#include <string.h>

int main() {
    char str1[100];
    char str2[100];
    char str3[100];
    int len;

    printf("enter the string name1:");
    scanf("%s",&str1);
    printf("\n enter the string name2:");
    scanf("%s",&str2);
    strcat(str1, str2);
    printf("str1 after concatenation: %s\n", str1);
    strcpy(str3, str1);
    printf("str3 after copying: %s\n", str3);
    len = strlen(str1);
    printf("length of str1: %d\n", len);
    if (strcmp(str1, str2) == 0) {
        printf("str1 and str2 are equal\n");
    } else {
        printf("str1 and str2 are not equal\n");
    }

    return 0;
}
```

OUTPUT:

```
1 #include <stdio.h>
2 #include <string.h>
3
4 int main() {
5     char str1[100];
6     char str2[100];
7     char str3[100];
8     int len;
9
10    printf("enter the string name1:");
11    scanf("%s", &str1);
12    printf("\n enter the string name2:");
13    scanf("%s", &str2);
14    strcat(str1, str2);
15    printf("str1 after concatenation: %s\n", str1);
16    strcpy(str3, str1);
17    printf("str3 after copying: %s\n", str3);
18    len = strlen(str1);
19    printf("length of str1: %d\n", len);
20    if (strcmp(str1, str2) == 0) {
21        printf("str1 and str2 are equal\n");
22    }
23    else {
24        printf("str1 and str2 are not equal\n");
25    }
26    return 0;
27 }
```

enter the string name1:bhanu
enter the string name2:teja
str1 after concatenation: bhanuteja
str3 after copying: bhanuteja
length of str1: 9
str1 and str2 are not equal

Process exited after 27.8 seconds with return value 0
Press any key to continue . . .

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds21.exe
- Output Size: 323.9658203125 KiB
- Compilation Time: 1.80s