

1. Write a C program to check the given number is odd or even?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int num;

    printf("enter a number:");

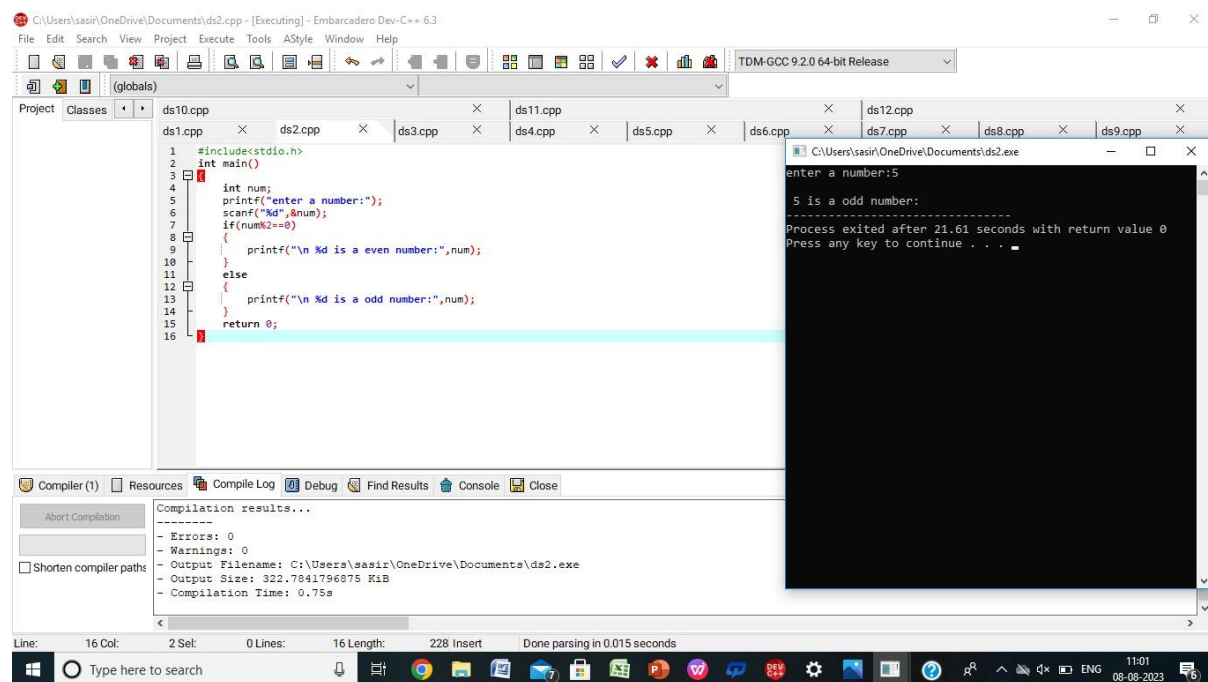
    scanf("%d",&num);

    if(num%2==0)
    {
        printf("\n %d is a even number:",num);
    }

    else
    {
        printf("\n %d is a odd number:",num);
    }

    return 0;
}
```

OUTPUT:



2.write a c program for sum of first n numbers using for loop?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int num,sum=0,i;

    printf("enter the number:");

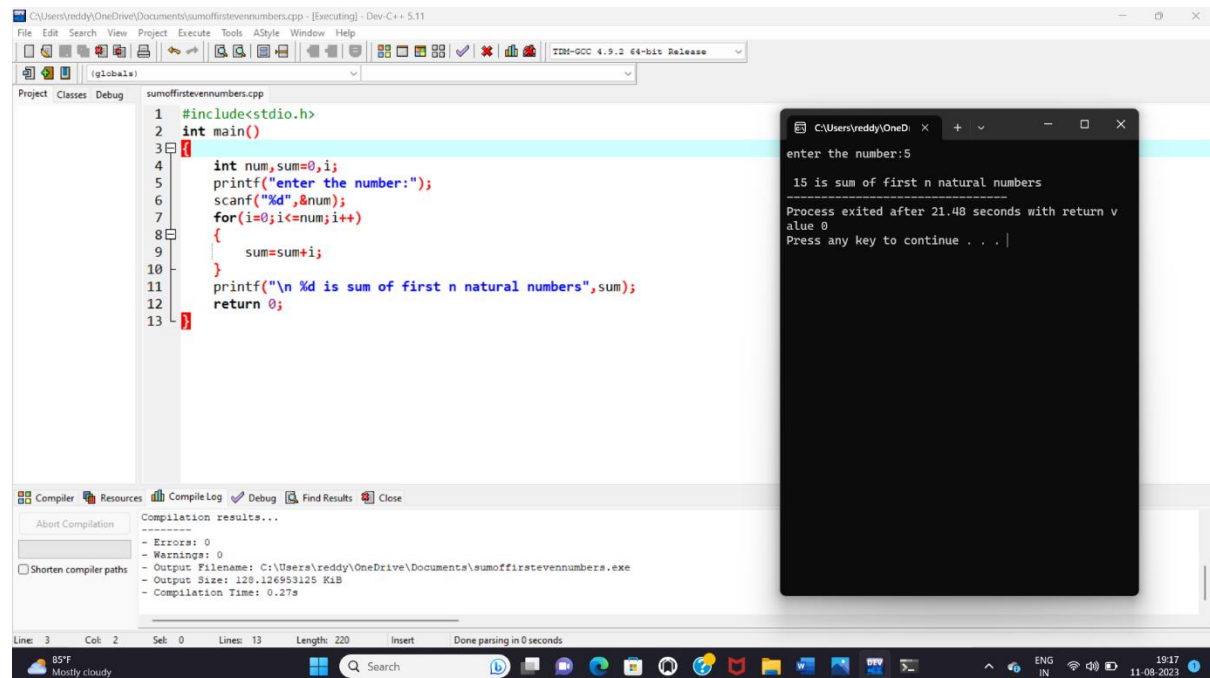
    scanf("%d",&num);

    for(i=0;i<=num;i++)
    {
        sum=sum+i;
    }

    printf("\n %d is sum of first n natural numbers",sum);

    return 0;
}
```

OUTPUT:



The screenshot displays the Dev-C++ IDE with a C program for calculating the sum of the first n natural numbers. The source code is shown in the main editor window, and the output window on the right shows the program's execution. The program prompts the user to enter a number, and the output shows the sum of the first 5 natural numbers (15) and the process exit message.

```
1 #include<stdio.h>
2 int main()
3 {
4     int num,sum=0,i;
5     printf("enter the number:");
6     scanf("%d",&num);
7     for(i=0;i<=num;i++)
8     {
9         sum=sum+i;
10    }
11    printf("\n %d is sum of first n natural numbers",sum);
12    return 0;
13 }
```

Output:

```
enter the number:5
15 is sum of first n natural numbers
Process exited after 21.48 seconds with return value 0
Press any key to continue . . .
```

3.write a c program of sum of even numbers using while loop?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int num,sum=0,i=0;

    printf("enter the number:");

    scanf("%d",&num);

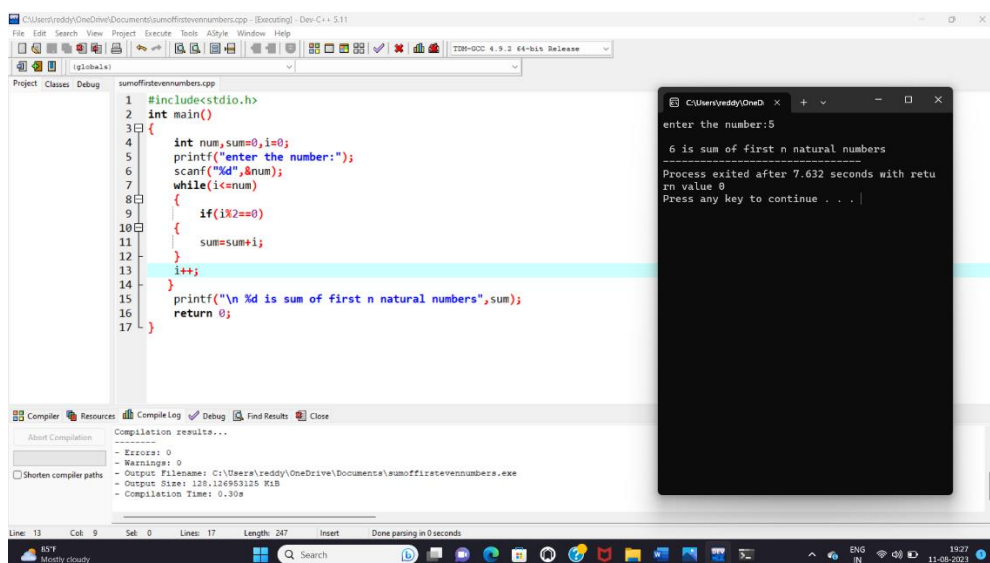
    while(i<=num)
    {
        if(i%2==0)
        {
            sum=sum+i;
        }

        i++;
    }

    printf("\n %d is sum of first n natural numbers",sum);

    return 0;
}
```

OUTPUT:



The screenshot displays a C++ IDE with the source code for a program that calculates the sum of even numbers from 1 to a given number. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int num,sum=0,i=0;
5     printf("enter the number:");
6     scanf("%d",&num);
7     while(i<=num)
8     {
9         if(i%2==0)
10        {
11            sum=sum+i;
12        }
13        i++;
14    }
15    printf("\n %d is sum of first n natural numbers",sum);
16    return 0;
17 }
```

The output window shows the program's execution with the input 5, resulting in a sum of 6. The output text is:

```
enter the number:5
6 is sum of first n natural numbers
Process exited after 7.632 seconds with return value 0
Press any key to continue . . .
```

The IDE also shows the compilation results, indicating that the program compiled successfully with no errors or warnings.

4.write a c program to reverse a number?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int num,q,result=0,rem;

    printf("enter a number:");

    scanf("%d",&num);

    q=num;

    while(q!=0)
    {
        rem=q%10;

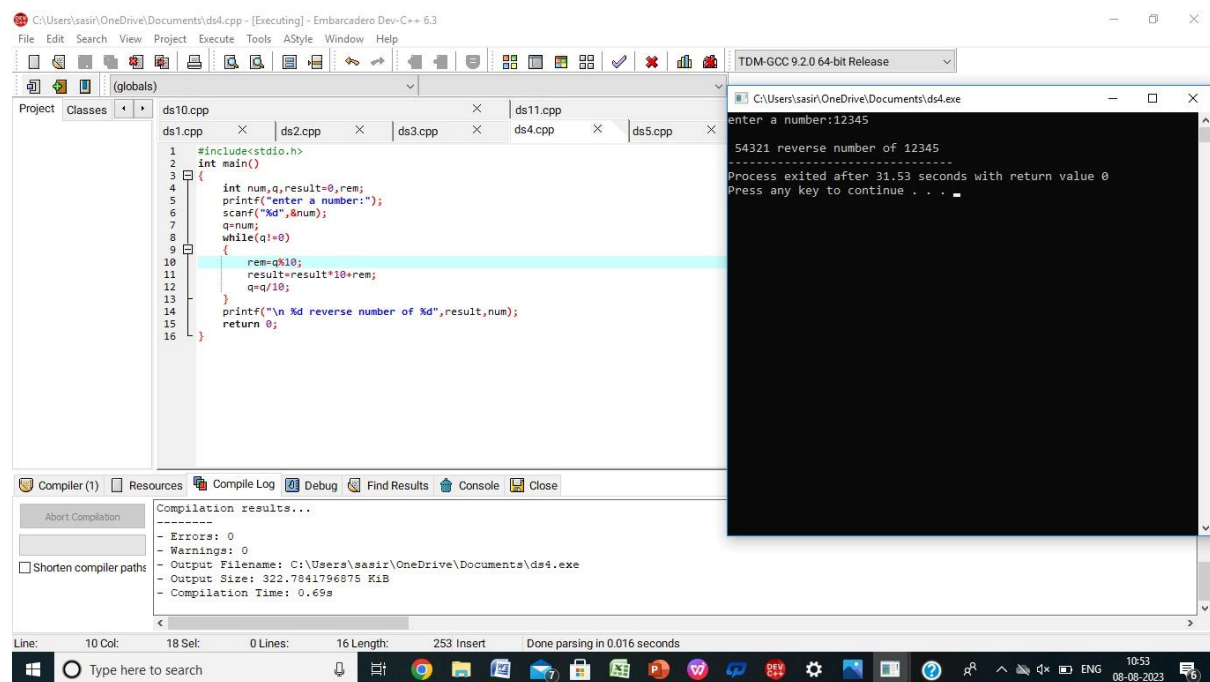
        result=result*10+rem;

        q=q/10;
    }

    printf("\n %d reverse number of %d",result,num);

    return 0;
}
```

OUTPUT:

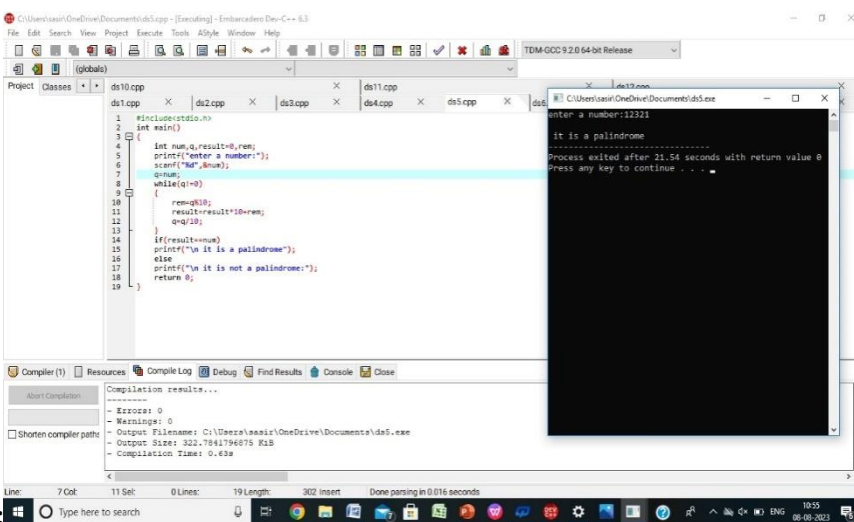


5.write a c program to check whether a number is palindrome or not?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int num,q,result=0,rem;
    printf("enter a number:");
    scanf("%d",&num);
    q=num;
    while(q!=0)
    {
        rem=q%10;
        result=result*10+rem;
        q=q/10;
    }
    if(result==num)
        printf("\n it is a palindrome");
    else
        printf("\n it is not a palindrome:");
    return 0;
}
```



The screenshot shows a Windows IDE with a C program being executed. The code in the editor is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int num,q,result=0,rem;
5     printf("enter a number:");
6     scanf("%d",&num);
7     q=num;
8     while(q!=0)
9     {
10         rem=q%10;
11         result=result*10+rem;
12         q=q/10;
13     }
14     if(result==num)
15         printf("\n it is a palindrome");
16     else
17         printf("\n it is not a palindrome:");
18     return 0;
19 }
```

The console output shows the program running with the input 12321. The output is "it is a palindrome". The console also shows "Process exited after 21.54 seconds with return value 0" and "Press any key to continue . . .".

OUTPUT:

6.write a c program to check whether it is a Armstrong or not?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int q,num,count=0,result=0,mul=1,cnt,rem;
    printf("enter a number:");
    scanf("%d",&num);
    q=num;
    while(q!=0)
    {
        q=q/10;
        count++;
    }
    cnt=count;
    q=num;
    while(q!=0)
    {
        rem=q%10;
        while(cnt!=0)
        {
            mul=mul*rem;
            cnt--;
        }

        result=result+mul;
        cnt=count;
        q=q/10;
        mul=1;
    }

    if(result==num)
```

```

{

    printf("\n %d is a armstrong number",num);

}

else

{

    printf("\n it is not a armstrong number:");

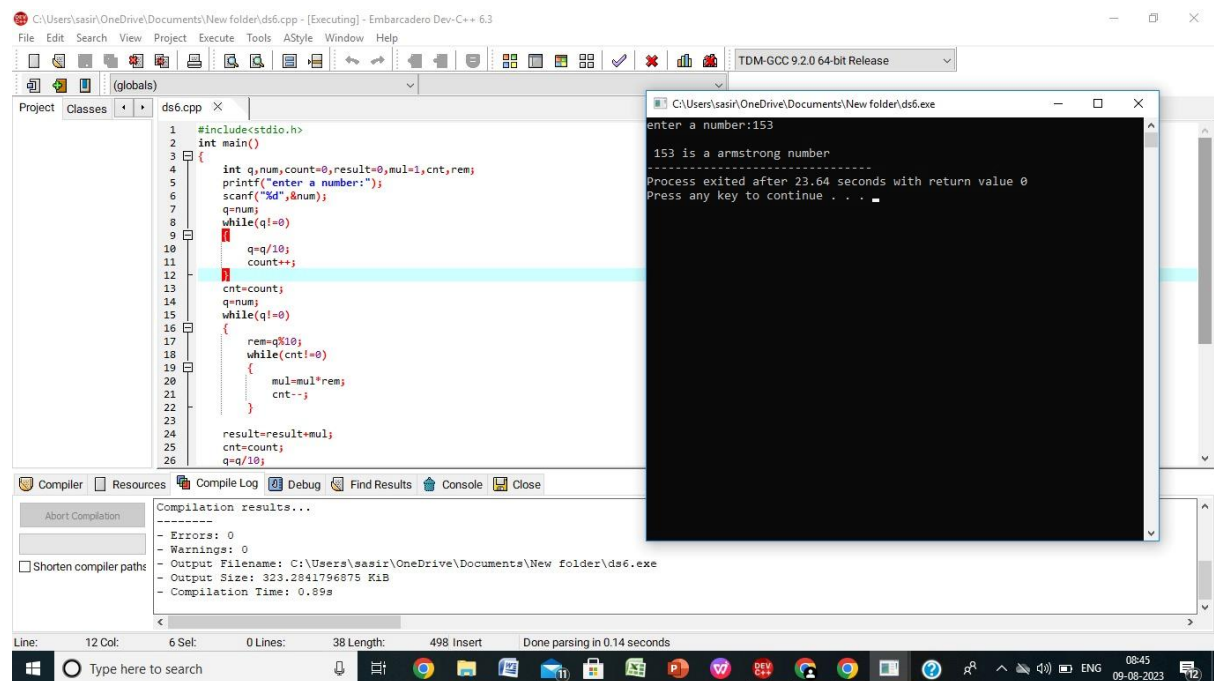
}

return 0;

}

```

OUTPUT:



7.write a c program to find factorial of given number without recursion?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int n,i;

    unsigned long long fact=1;

    printf("enetr a number:");

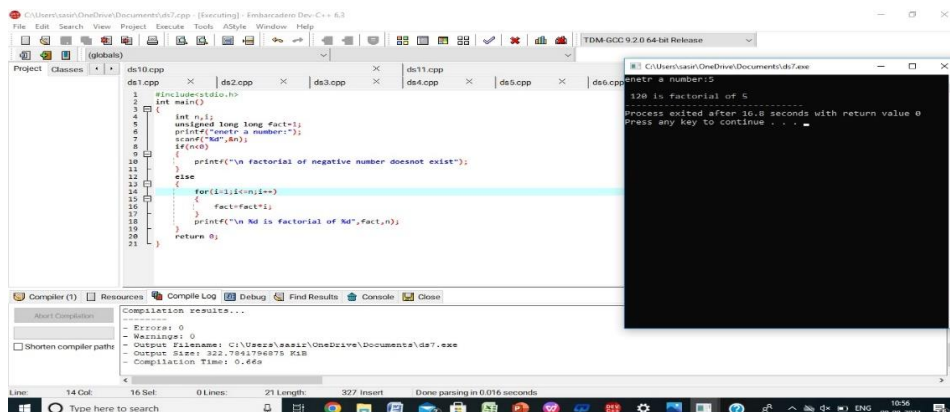
    scanf("%d",&n);

    if(n<0)
    {
        printf("\n factorial of negative number doesnot exist");
    }
    else
    {
        for(i=1;i<=n;i++)
        {
            fact=fact*i;
        }

        printf("\n %d is factorial of %d",fact,n);
    }

    return 0;
}
```

OUTPUT:



8. write a c program to find factorial with recursion?

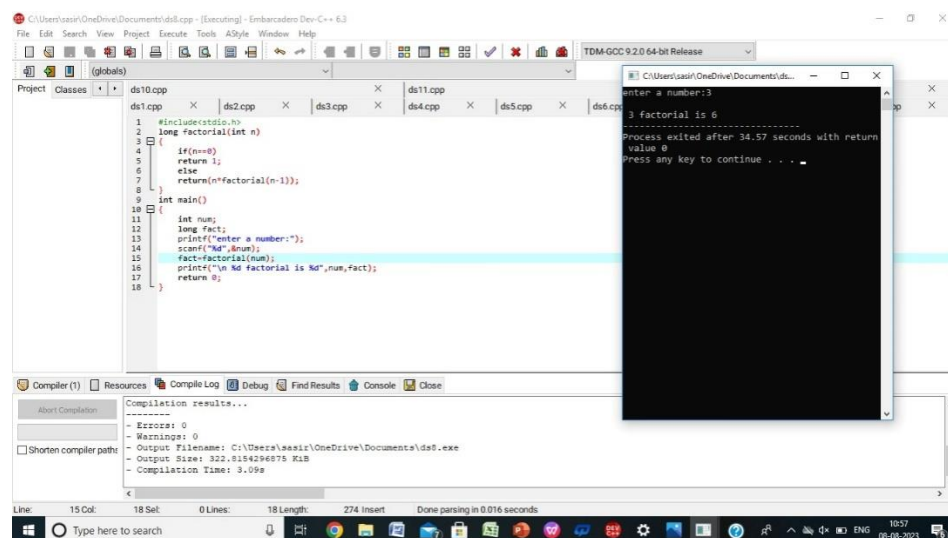
PROGRAM:

```
#include<stdio.h>

long factorial(int n)
{
    if(n==0)
        return 1;
    else
        return(n*factorial(n-1));
}

int main()
{
    int num;
    long fact;
    printf("enter a number:");
    scanf("%d",&num);
    fact=factorial(num);
    printf("\n %d factorial is %d",num,fact);
    return 0;
}
```

OUTPUT:



9.write a c program to generate fibanocci series without recursion?

PROGRAM:

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

```
int main()
```

```
{
```

```
    int n,a,b,c,i;
```

```
    printf("enter the number of terms:");
```

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

```
    a=0;
```

```
    b=1;
```

```
    while(i<n)
```

```
    {
```

```
        printf("\n%d",a);
```

```
        c=a+b;
```

```
        a=b;
```

```
        b=c;
```

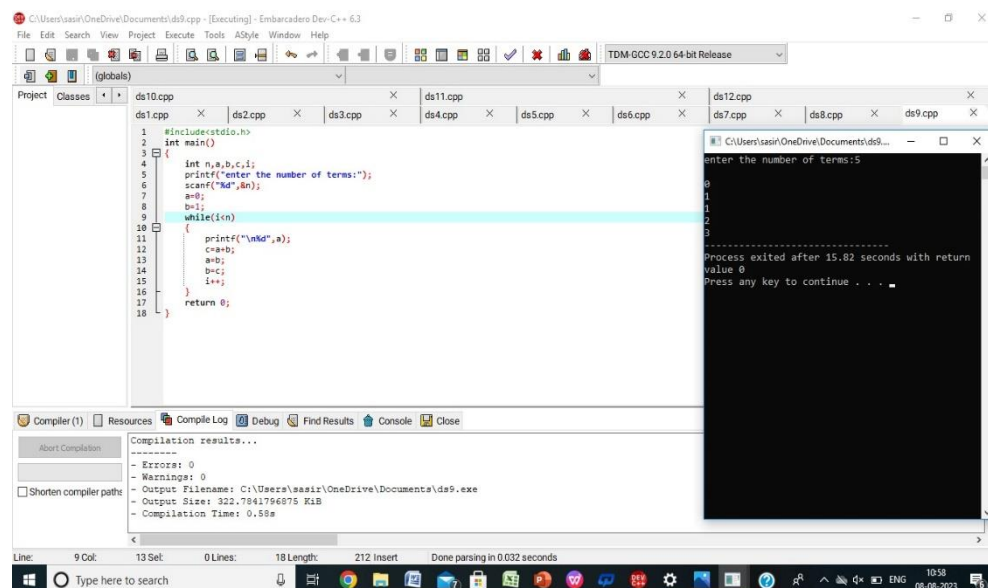
```
        i++;
```

```
    }
```

```
    return 0;
```

```
}
```

OUTPUT:



10.write a c program to generate fibanocci series with recursion?

PROGRAM:

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

```
int fibanocci(int n)
```

```
{
```

```
    static int a=0,b=1,c;
```

```
    if(n>0)
```

```
    {
```

```
        printf("\n%d",a);
```

```
        c=a+b;
```

```
        a=b;
```

```
        b=c;
```

```
        fibanocci(n-1);
```

```
    }
```

```
}
```

```
int main()
```

```
{
```

```
    int n;
```

```
    printf("enter the number of terms:");
```

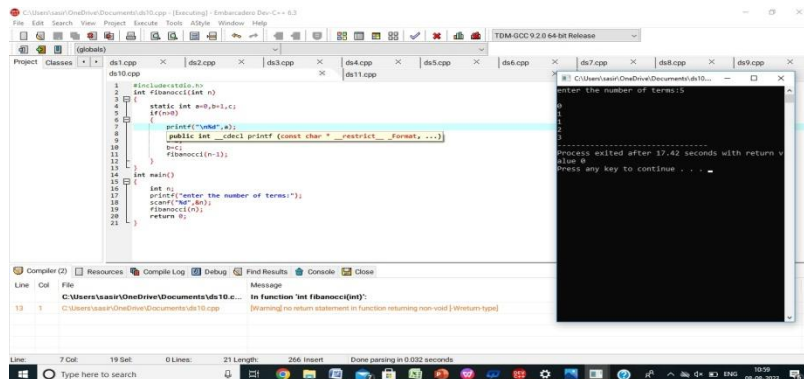
```
    scanf("%d",&n);
```

```
    fibanocci(n);
```

```
    return 0;
```

```
}
```

OUTPUT:



11.write a c program to search particular element in array using linear search?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int n,a[100],i,num;
    printf("enter the size of array:");
    scanf("%d",&n);
    printf("enter the elements in array:");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("\n enter a number to search using linear search");
    scanf("%d",&num);
    for(i=0;i<n;i++)
    {
        if(a[i]==num)
        {
            printf("\n number %d found at index %d",num,i);
            break;
        }
    }
    if(i==n)
    {
        printf("\n number %d is not present");
    }
    return 0;
}
```

OUTPUT:

The screenshot displays an IDE window titled "C:\Users\sasir\OneDrive\Documents\ds11.cpp - [Executing] - Embarcadero Dev-C++ 6.3". The main editor shows the source code for a linear search program in ds11.cpp. The code prompts the user for the size of an array, the elements of the array, and a number to search for. It then performs a linear search and prints the result. The output window on the right shows the program's execution with the following input and output:

```
enter the size of array:5
enter the elements in array:6 7 8 9 10
enter a number to search using linear search:8
number 8 found at index 2
Process exited after 25.57 seconds with return value 0
Press any key to continue . . .
```

The bottom of the IDE shows the compilation results, indicating that the program compiled successfully with no errors or warnings. The output filename is C:\Users\sasir\OneDrive\Documents\ds11.exe, and the compilation time was 0.58s.

12.write a c program to search particular element in array using binary search?

PROGRAM:

```
#include<stdio.h>

int main()
{
    int i,low,high,mid,n,key,a[100];
    printf("enter the size of array");
    scanf("%d",&n);
    printf("\n enter the elements:");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("\n enter the value to find:");
    scanf("%d",&key);
    low=0;
    high=n-1;
    mid=(low+high)/2;
    while(low<=high)
    {
        if(a[mid]<key)
            low=mid+1;
        else if(a[mid]==key)
        {
            printf("\n %d found at loaction %d",key,mid);
            break;
        }
        else
            high=mid-1;
        mid=(low+high)/2;
    }
}
```

```

        if(low>high)
        {

            printf("\n not found %d",key);

        }

        return 0;

    }
}

```

OUTPUT:

The screenshot shows an IDE with the following components:

- Editor:** Displays the C++ code for a binary search algorithm. The code includes a `scanf` for the array size, a `scanf` for the value to find, and a `while` loop for the search process. A `printf` statement is highlighted on line 23: `printf("\n %d found at loaction %d",key,mid);`. A tooltip for `printf` is visible.
- Console:** Shows the program's output:


```

enter the size of array6
enter the elements:8 9 7 6 5 4
enter the value to find:5
5 found at loaction 2
-----
Process exited after 27.02 seconds with return value 0
Press any key to continue . . .
            
```
- Compiler Output:** Shows the compilation results:


```

Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\sasir\OneDrive\Documents\ds12.exe
- Output Size: 323.2841796875 KiB
- Compilation Time: 0.61s
            
```
- Status Bar:** Displays "Line: 23 Col: 56 Sel: 0 Lines: 36 Length: 582 Insert Done parsing in 0.032 seconds".