

```
/**diamond with space**/
```

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

```
int main()
```

```
{
```

```
    int i,j,k;
```

```
    for(i=0;i<3;i++)
```

```
    {
```

```
        for(j=0;j<2*(2-i);j++)
```

```
            printf(" ");
```

```
        for(k=0;k<2*i+1;k++)
```

```
            printf("* ");
```

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

```
    }
```

```
    for(i=2;i>0;i--)
```

```
    {
```

```
        for(j=0;j<2*(3-i);j++)
```

```
            printf(" ");
```

```
        for(k=0;k<2*i-1;k++)
```

```
            printf("* ");
```

```
        printf("\n");
    }
    return 0;

}
```

/addition of n numbers by using factorial & recursion**/**

```
#include<stdio.h>

int fact(int);

int main()
{
    int n,p;
    printf("enter the value of n\n");
    scanf("%d",&n);
    p=fact(n);
    printf("result :%d",p);
    return 0;
}

int fact(int x)
{
    if(x==0 | x==1)
        return 1;
    else
        return x+fact(x-1);
}
```

```
C:\Users\HP\OneDrive\Documents\addition using factorial & recursion.exe
result :8
-----
Process exited after 0.007362 seconds with return value 0
Press any key to continue . . .
```

`/sum of even no using function*/`**

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

```
int even(int);
```

```
int main()
```

```
{
```

```
    int i,n,sum=0;
```

```
    printf("enter the value of n\n");
```

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

```
    for(i=1;i<=n;i++)
```

```
    {
```

```
        if(even(i)==2)
```

```
        sum=sum+i;
```

```
    }
```

```
    return 0;
```

```
}
```

```
int even(int x)
```

```
{
```

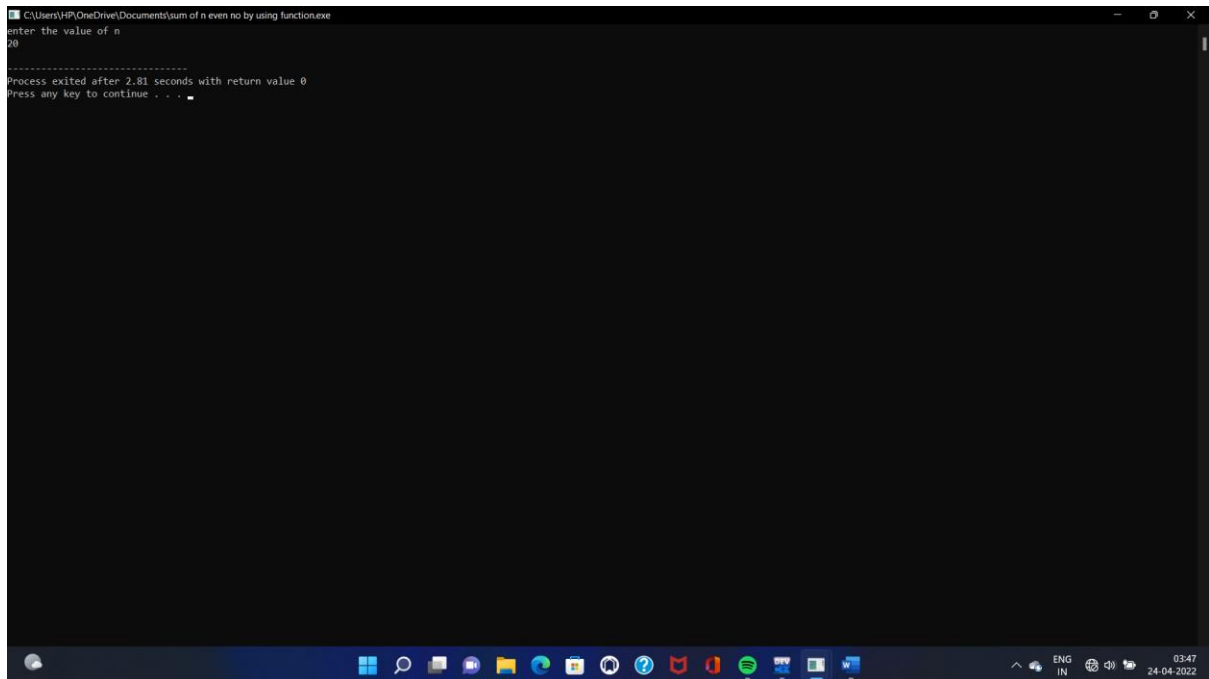
```
    if(x%2==0)
```

```
        return 2;

    else

        return 1;

}
```



```
C:\Users\HP\OneDrive\Documents\sum of n even no by using function.exe
enter the value of n
20
-----
Process exited after 2.81 seconds with return value 0
Press any key to continue . . .
```

//*factorial by using function & recursion*//

```
#include<stdio.h>

int fact(int);

int main()
{
    int n,p;

    printf("enter the value of n\n");

    scanf("%d",&n);

    p=fact(n);

    printf("result : %d",p);

    return 0;

}

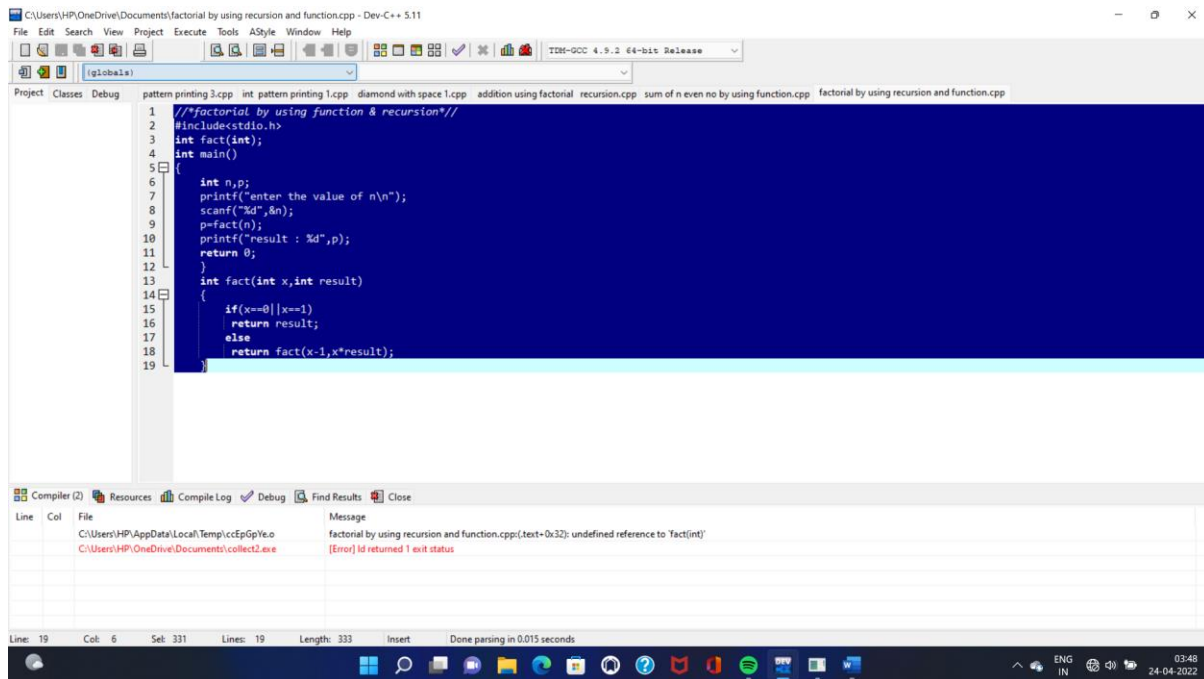
int fact(int x,int result)
{
    if(x==0 || x==1)
```

```
return result;

else

return fact(x-1,x*result);

}
```



The screenshot shows the Dev-C++ IDE with a C++ program for calculating factorial using recursion. The program is named "factorial by using recursion and function.cpp". The code is as follows:

```
1  /*factorial by using function & recursion*/
2  #include<stdio.h>
3  int fact(int);
4  int main()
5  {
6      int n,p;
7      printf("enter the value of n\n");
8      scanf("%d",&n);
9      p=fact(n);
10     printf("result : %d",p);
11     return 0;
12 }
13
14 int fact(int x,int result)
15 {
16     if(x==0||x==1)
17         return result;
18     else
19         return fact(x-1,x*result);
20 }
```

The IDE shows a compiler error message in the "Compiler (2)" window:

Line	Col	File	Message
		C:\Users\HP\AppData\Local\Temp\ccEgGpYe.o	factorial by using recursion and function.cpp(,text-0x32): undefined reference to 'fact(int)'
		C:\Users\HP\OneDrive\Documents\collect2.exe	[Error] ld returned 1 exit status

The status bar at the bottom indicates "Line: 19, Col: 6, Sel: 331, Lines: 19, Length: 333, Insert, Done parsing in 0.015 seconds". The system tray shows the date and time as "24-04-2022 03:48".