**Assignment operator** [ = ]: It is used to copy the value on its right side into the variable on its left.

Left side operand should be a variable i.e. left side string variable / expressions / constants not allowed.
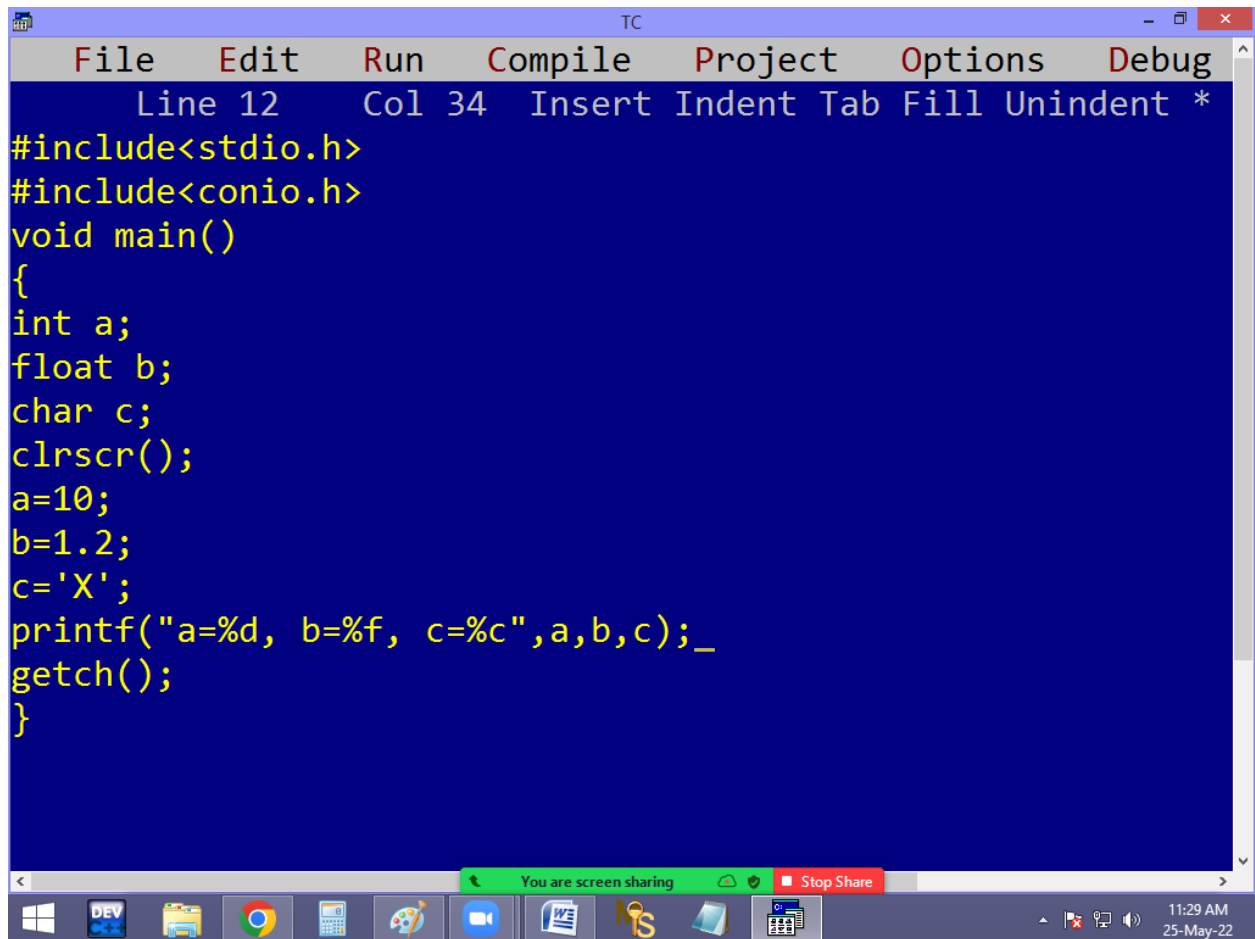
a=10;

b=1.2;

c='X';

d="abc"; ➔ error

10=20; ➔ error
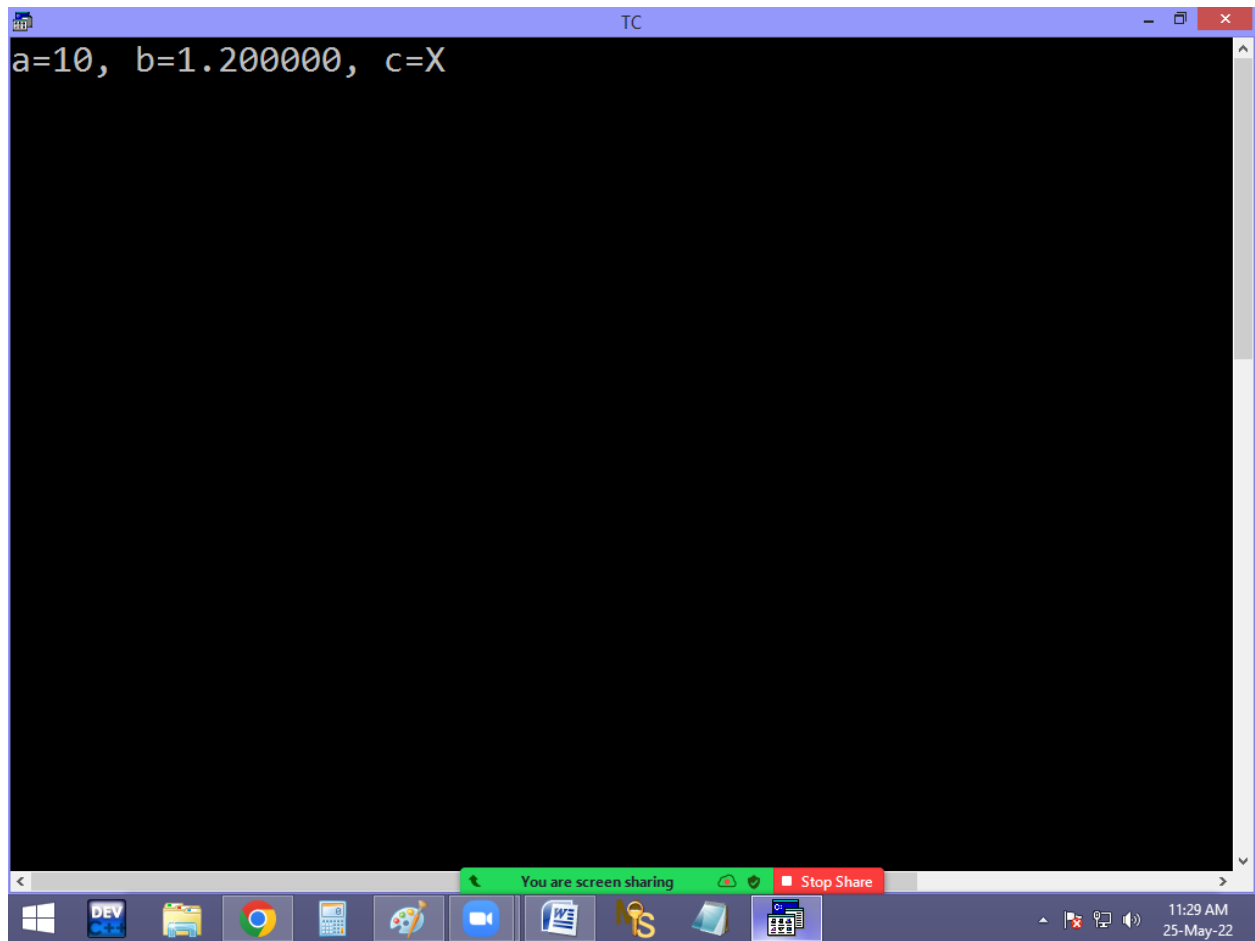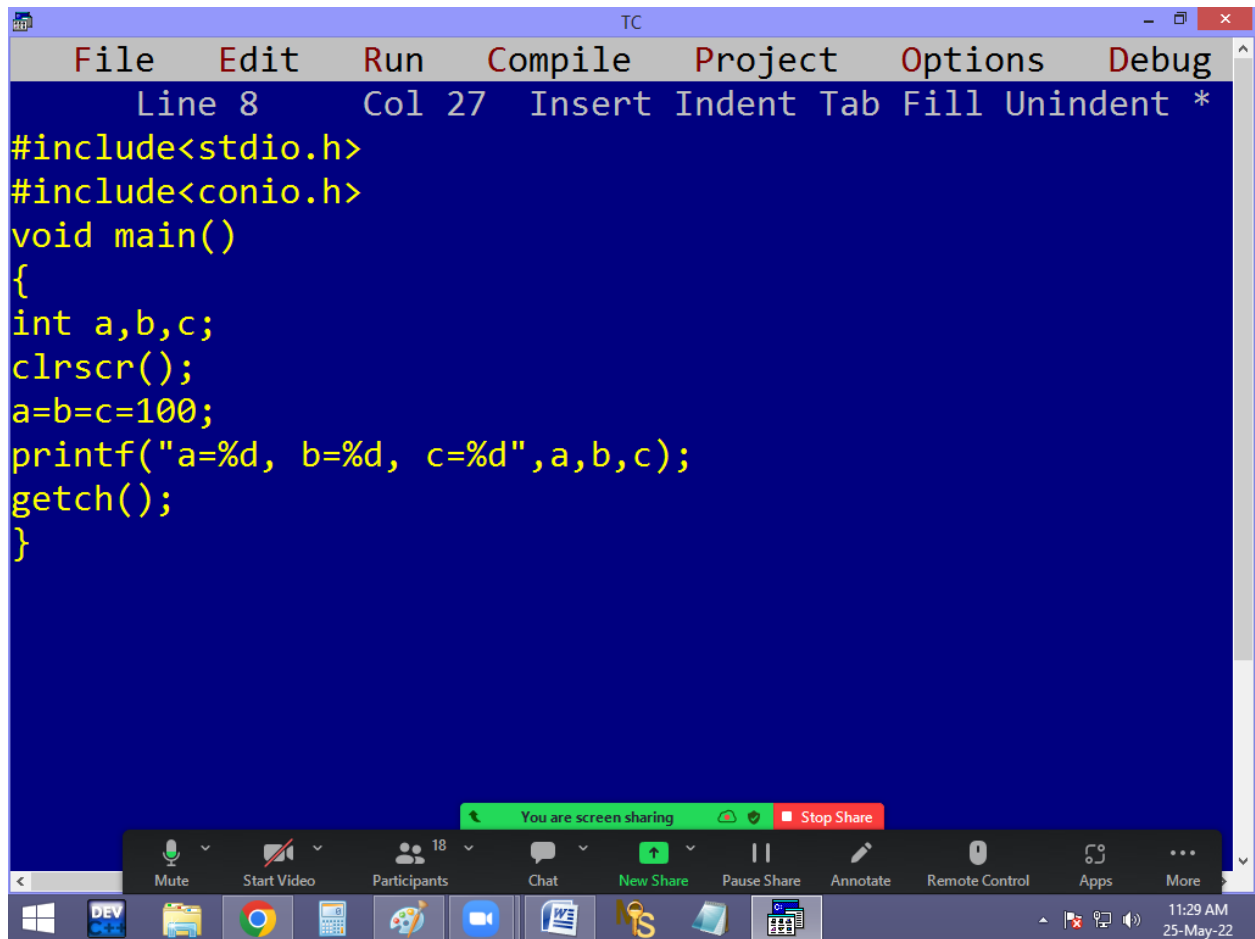
c=a+b;

a+b=c; ➔ error a+b is expression
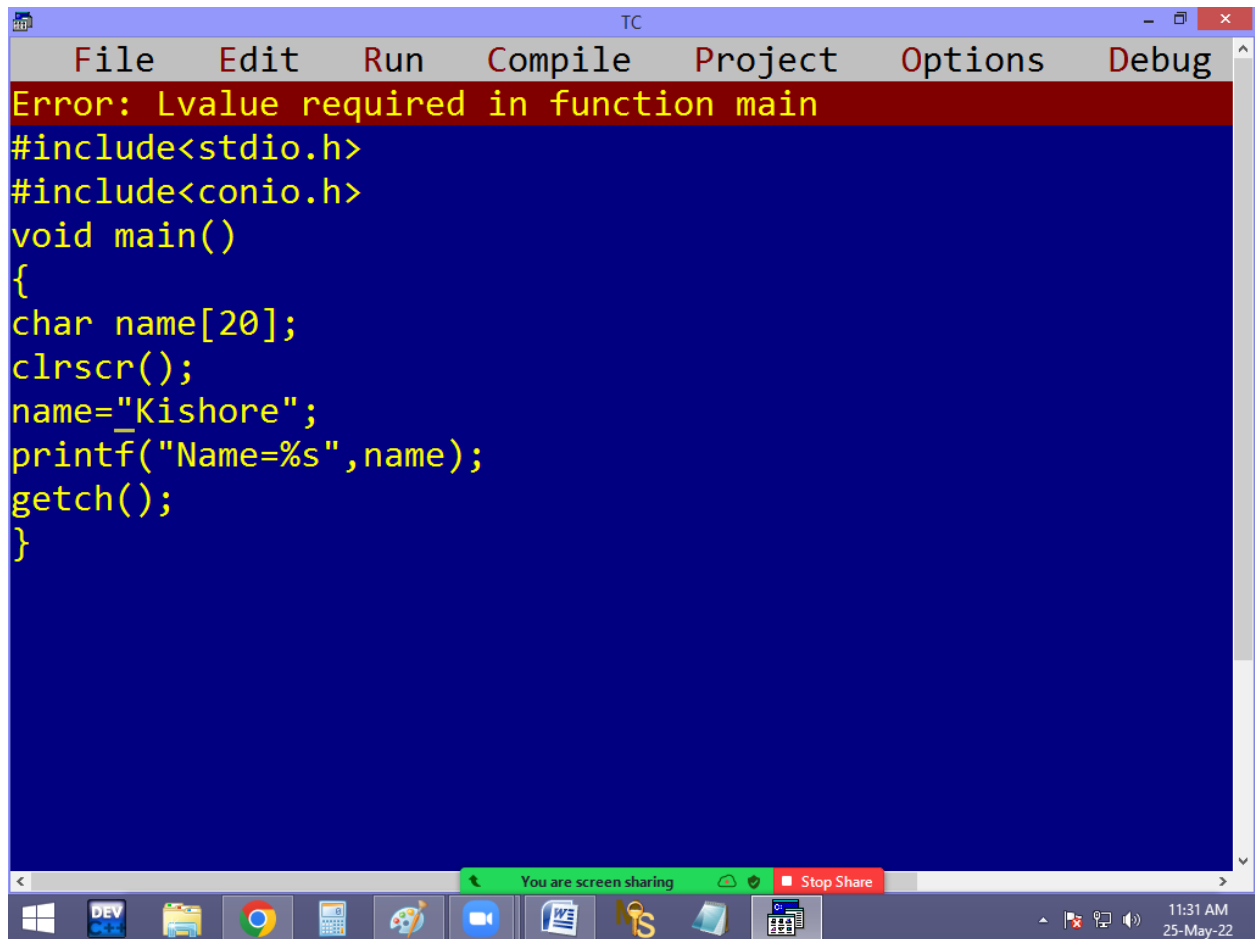
a=b=c=100;

File    Edit    Run    Compile    Project    Options    Debug

Line 12    Col 34    Insert    Indent    Tab    Fill    Unindent    *

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
float b;
char c;
clrscr();
a=10;
b=1.2;
c='X';
printf("a=%d, b=%f, c=%c",a,b,c);_
getch();
}
```

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25-May-22

```
a=10, b=1.200000, c=X
```

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
a=b=c=100;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}
```

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a=100, b=100, c=100
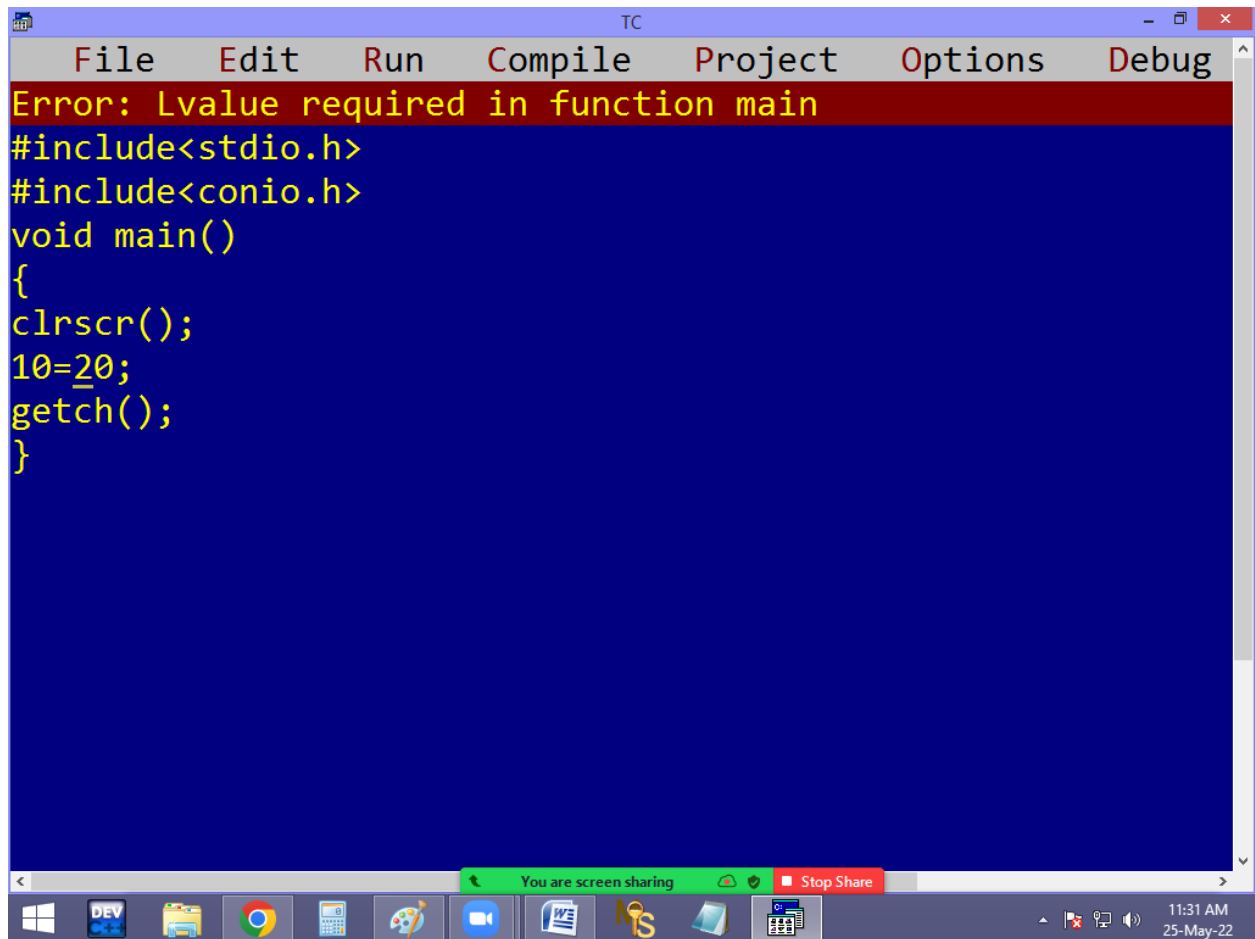
Error: Lvalue required in function main

```c
#include<stdio.h>
#include<conio.h>
void main()
{
char name[20];
clrscr();
name="Kishore";
printf("Name=%s",name);
getch();
}
```
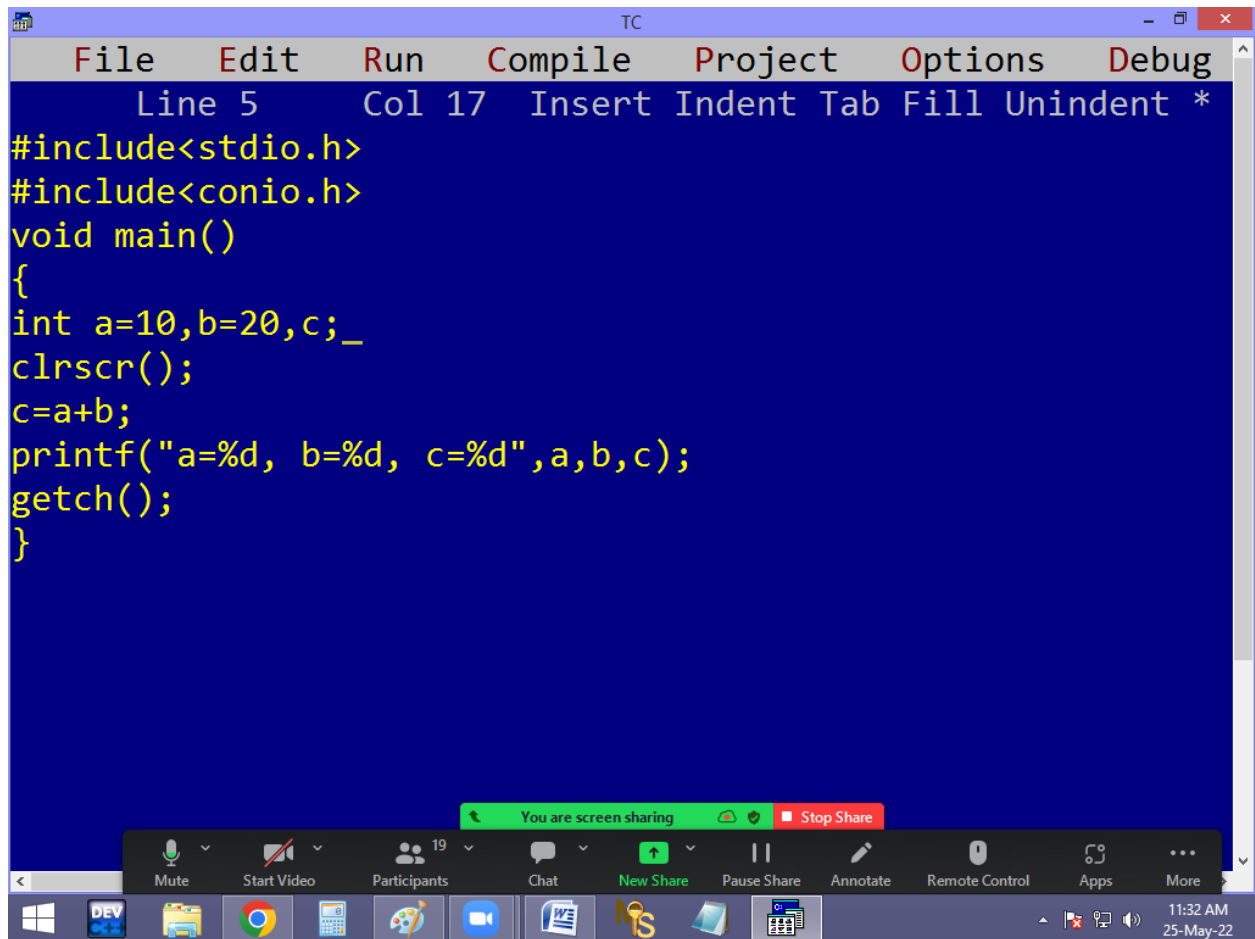
You are screen sharing    Stop Share

Error: Lvalue required in function main

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
10=20;
getch();
}
```

You are screen sharing     Stop Share

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10,b=20,c;_
clrscr();
c=a+b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}
```

```
a=10, b=20, c=30
```

| File | Edit | Run | Compile | Project | Options | Debug |

Error: Lvalue required in function main

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10,b=20,c;
clrscr();
a+b=c;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}
```

**Arithmetic operators [ +, -, \*, %, / ]**: They are used to perform mathematical calculations.

Eg: a+b, a-b, a\*b,…

**% - modulus [ Remainder ]:**

5 % 2 = 1

$$2 \overline{)\, 5 \,} ( 2 \leftarrow \, / \text{ Quotient}$$
$$\phantom{2)}\, \underline{4}$$
$$\%_0 \rightarrow 1 \text{ Remainder}$$

2%5=2

<span style="background-color: yellow">Note</span>:  if the divisor is bigger than dividend then dividend is the answer.
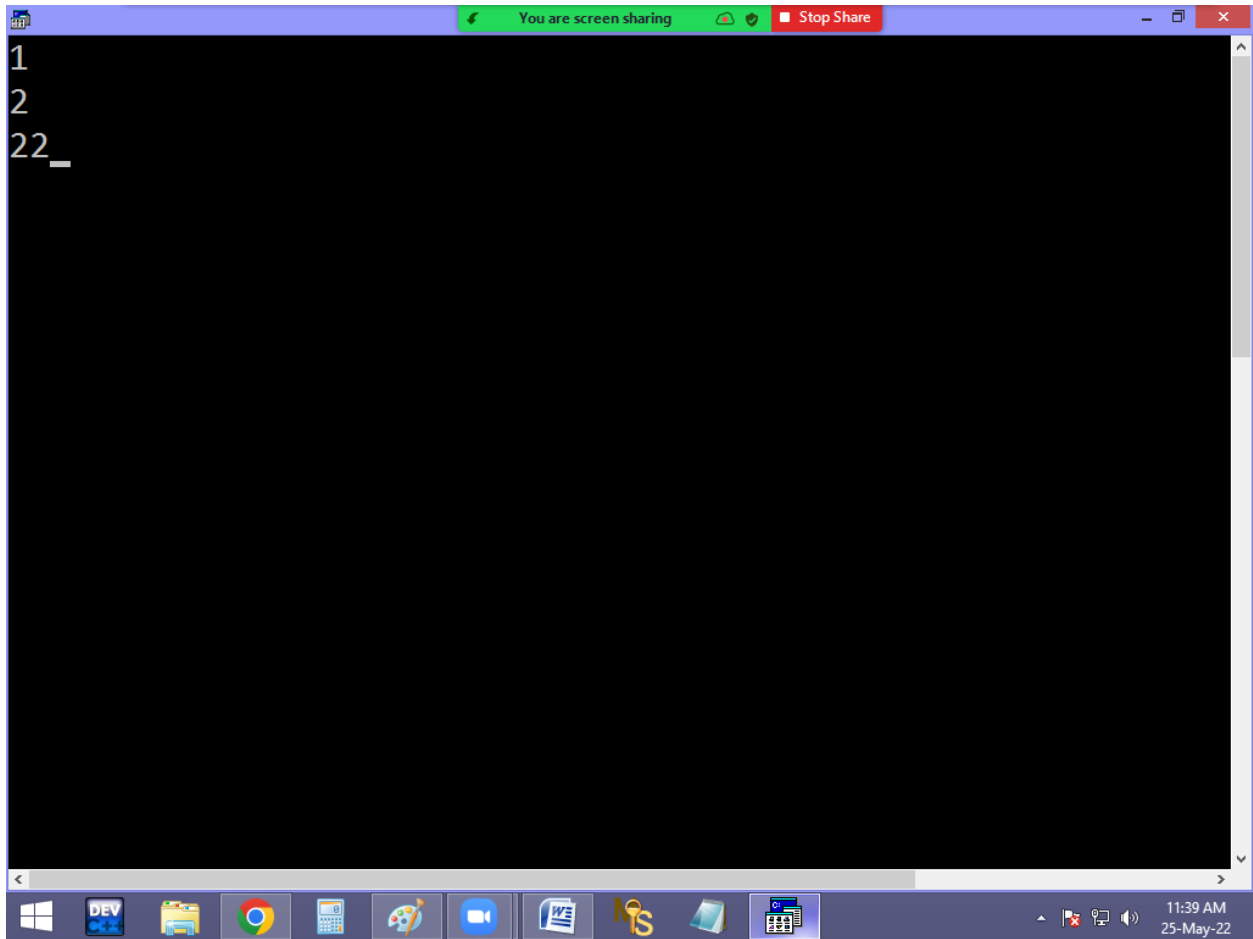
File    Edit    Run    Compile    Project    Options    Debug

Line 8    Col 20    Insert Indent Tab Fill Unindent *

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n",5%2);
printf("%d\n",2%5);
printf("%d",22%55);
getch();
}
```

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```
1
2
22
```

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d, %d, %d",-5%2, 5%-2,-5%-2);
getch();
}
/* -1, 1, -1
Note:
if the numerator is negative then result also negative
*/
```
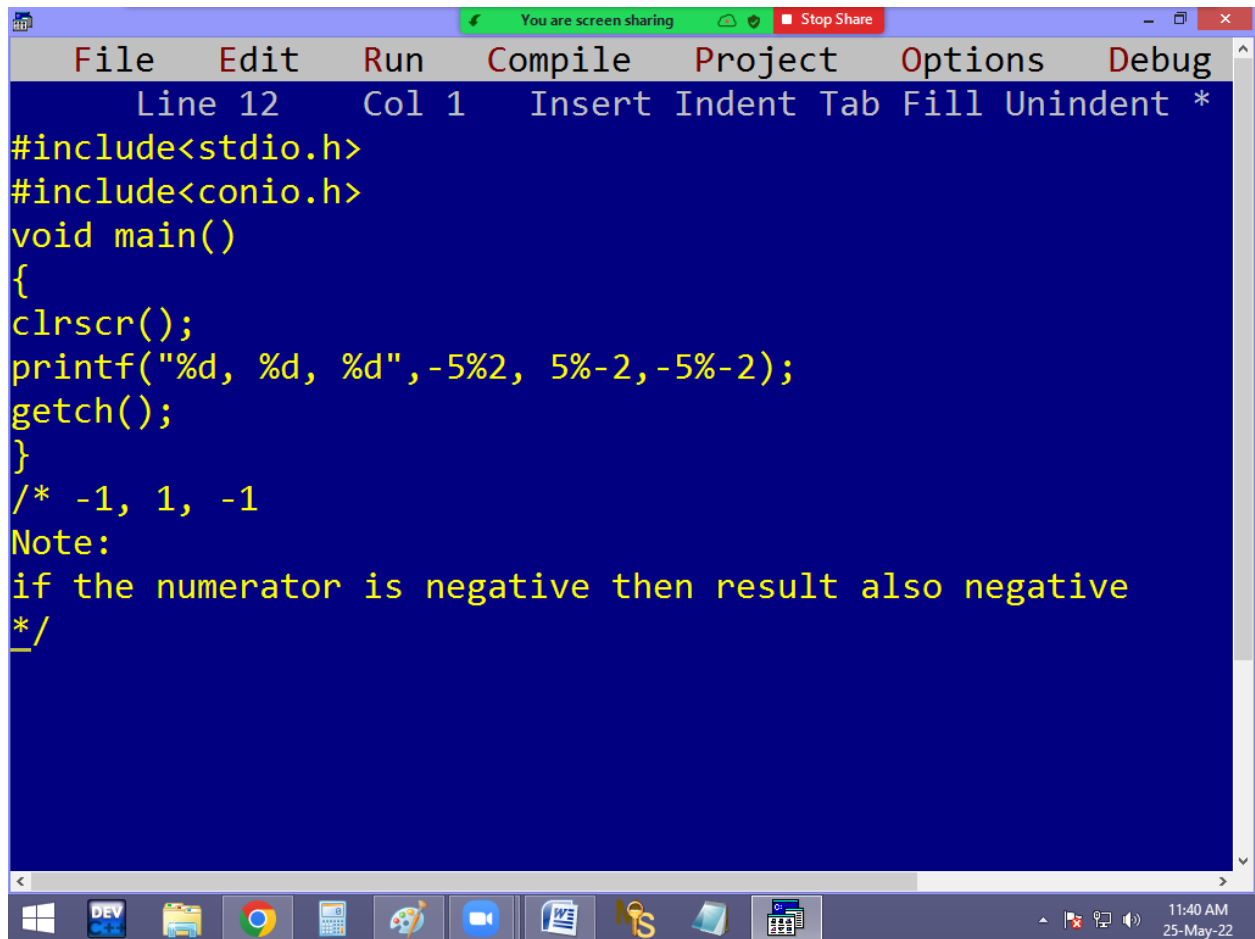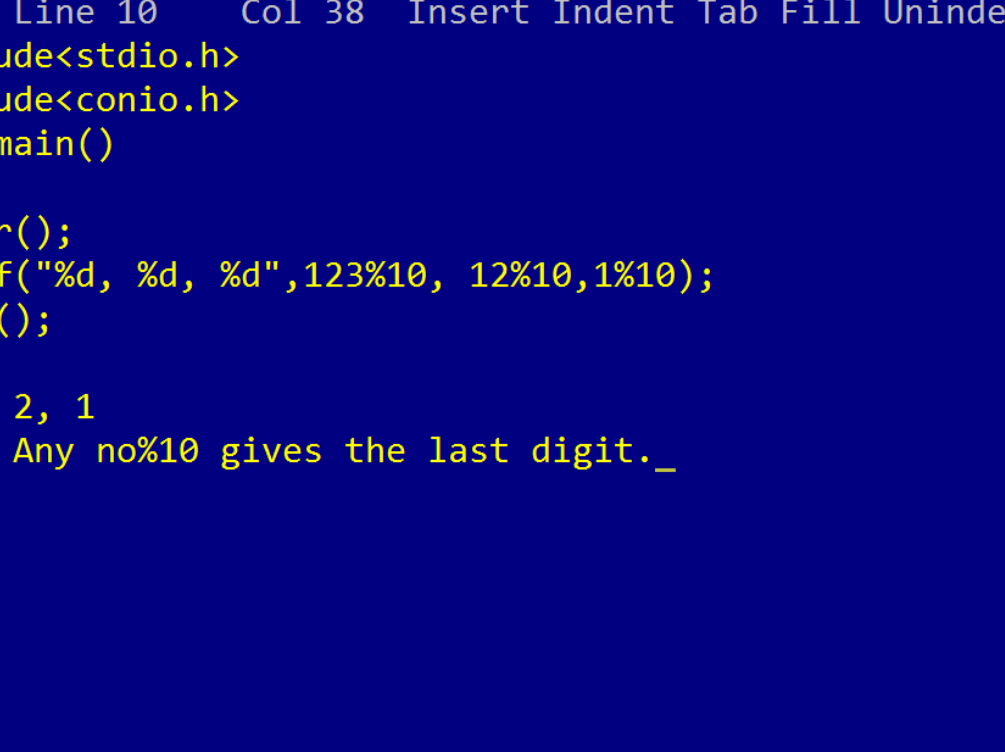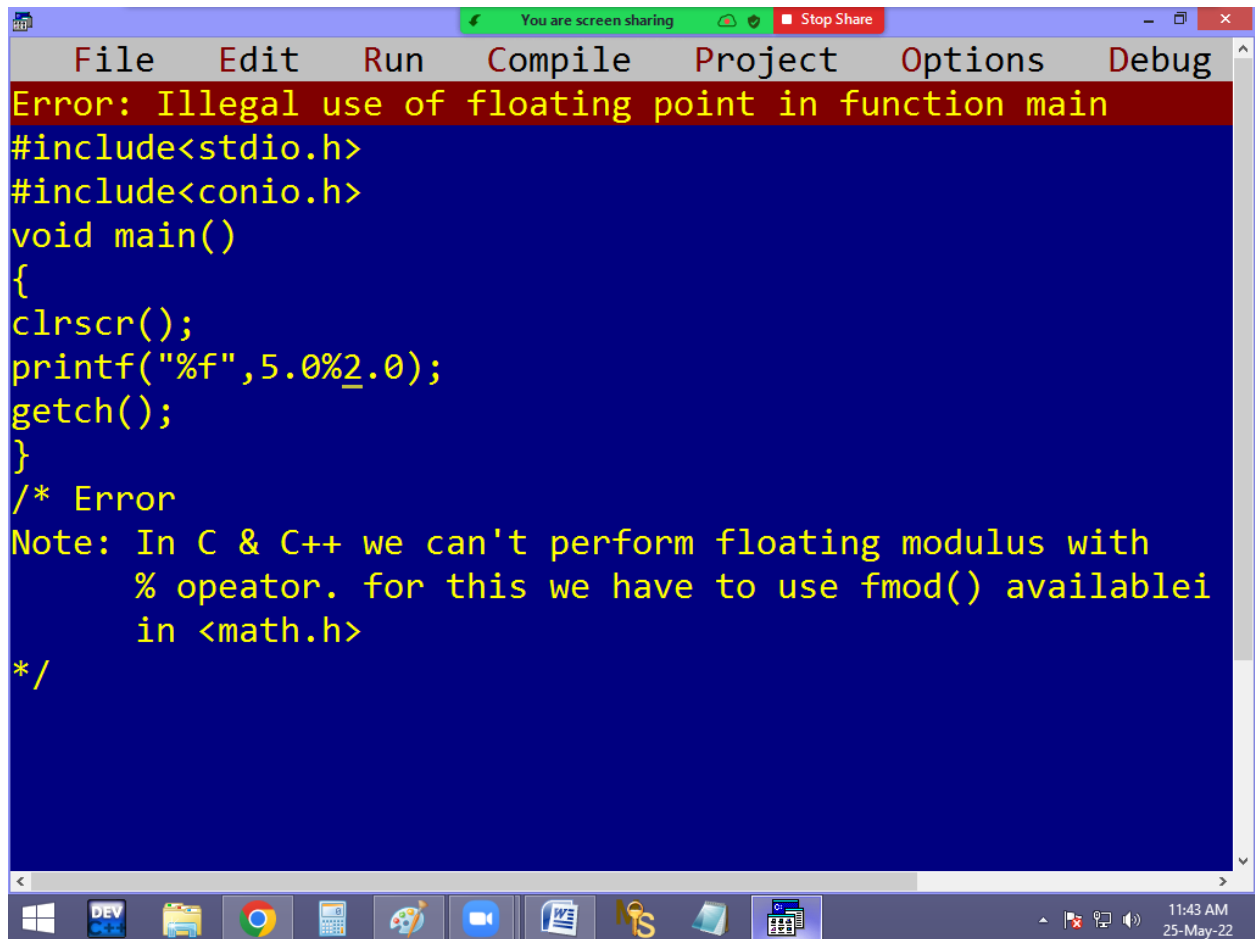
File    Edit    Run    Compile    Project    Options    Debug

Line 10    Col 38    Insert Indent Tab Fill Unindent *

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d, %d, %d",123%10, 12%10,1%10);
getch();
}
/* 3, 2, 1
Note: Any no%10 gives the last digit._
*/
```

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```
Error: Illegal use of floating point in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%f",5.0%2.0);
getch();
}
/* Error
Note: In C & C++ we can't perform floating modulus with
      % opeator. for this we have to use fmod() availablei
      in <math.h>
*/
```

```
File    Edit    Run    Compile    Project    Options    Debug
        Line 13      Col 1    Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
clrscr();
printf("%f\n",fmod(5.0,2.0));
printf("%f",fmod(5,2));
getch();
}
/*
1.000000
1.000000
*/
```

**/ - division [ Quotient ]**:

5/2=2  [int/int=int]

5.0/2=2.500000

Note: Only int/int=int remaining all combinations floating result.

(float)5/2=2.500000 [ explicit type casting ]

Float  a=6;➜6.000000 [ implicit type casting ]

Int a=2.3; ➜ 2 [ implicit type casting ]

5/(float)2➜2.500000

(float)(5/2)=2.000000

```c
#include<stdio.h>
#include<conio.h>
void main()
{
float a=6;
int   b=2.3;
clrscr();
printf("a=%f\n",a);
printf("b=%d\n",b);
printf("%d\n",5/2);
printf("%f\n",5.0/2);
printf("%f\n",5/2.0);
printf("%f\n",(float)5/2);
printf("%f\n",(float)(5/2));
getch();
}
```

```
a=6.000000
b=2
2
2.500000
2.500000
2.500000
2.000000
```
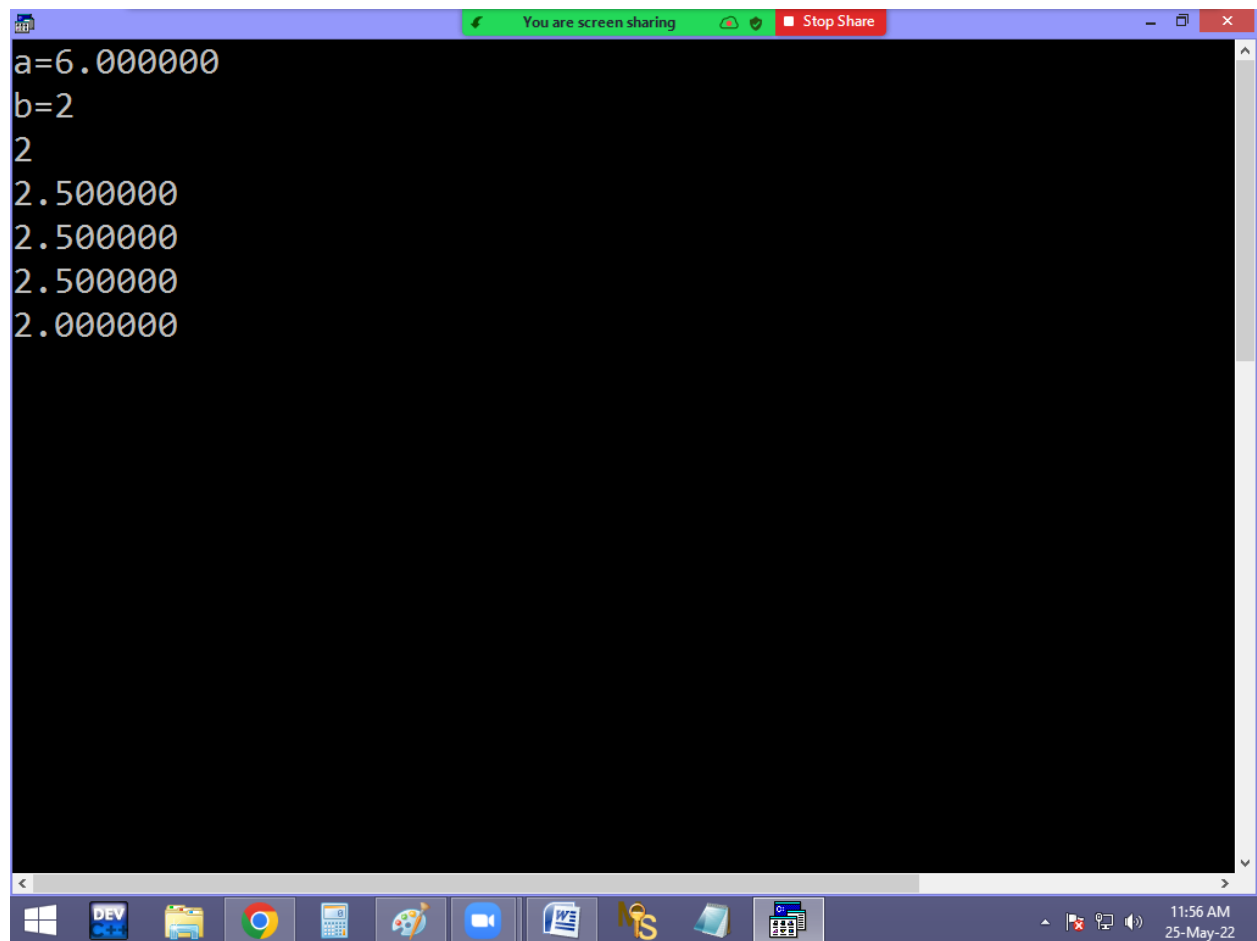
File    Edit    Run    Compile    Project    Options    Debug

Line 12    Col 47    Insert Indent Tab Fill Unindent *

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d,%d,%d",-5/2,5/-2,-5/-2);
getch();
}
/* -2,-2,2

In Division any one operand negative then result also
negative. both are negative result is positive

*/
```
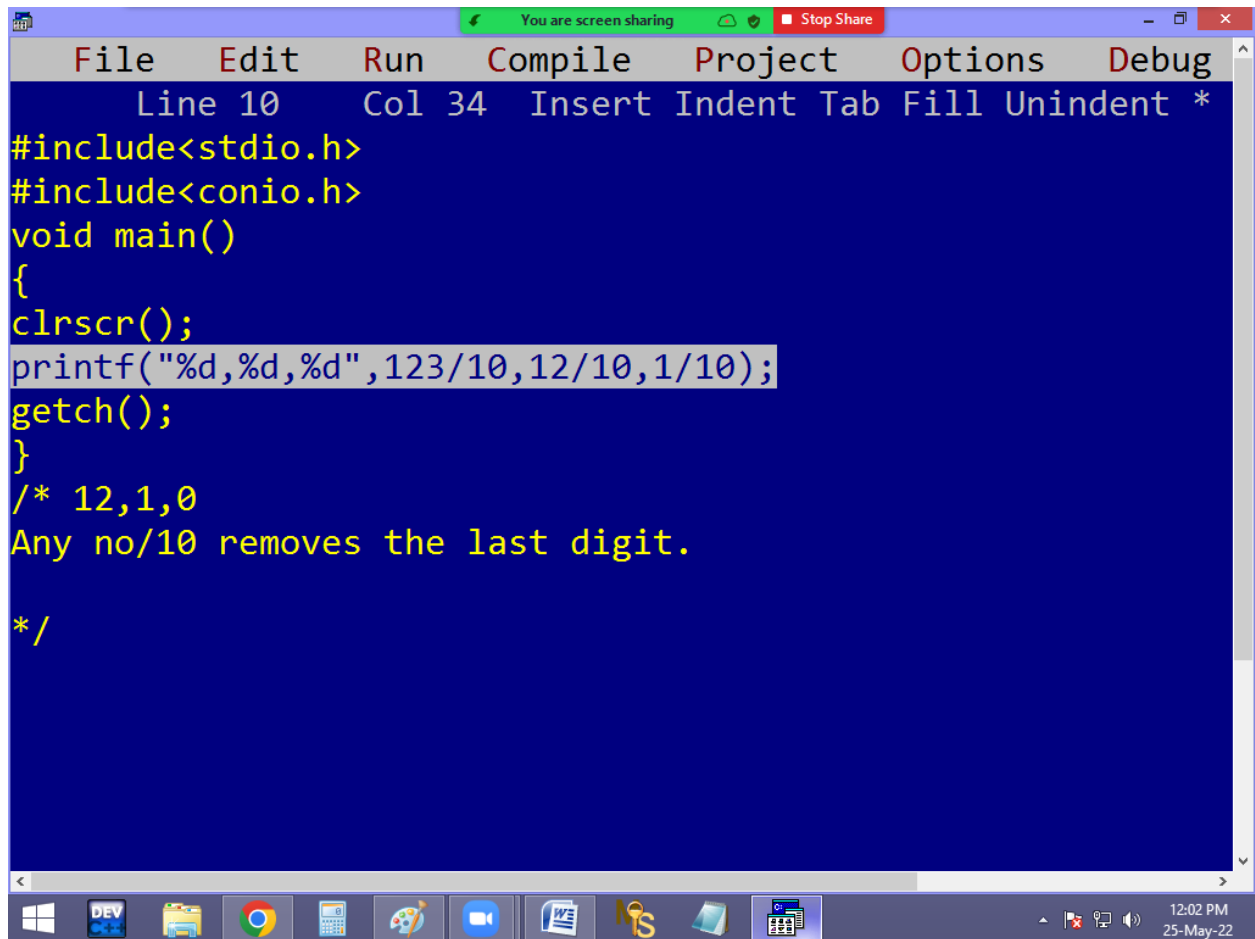
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File    Edit    Run    Compile    Project    Options    Debug

Line 10    Col 34    Insert Indent Tab Fill Unindent *

```c
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d,%d,%d",123/10,12/10,1/10);
getch();
}
/* 12,1,0
Any no/10 removes the last digit.

*/
```

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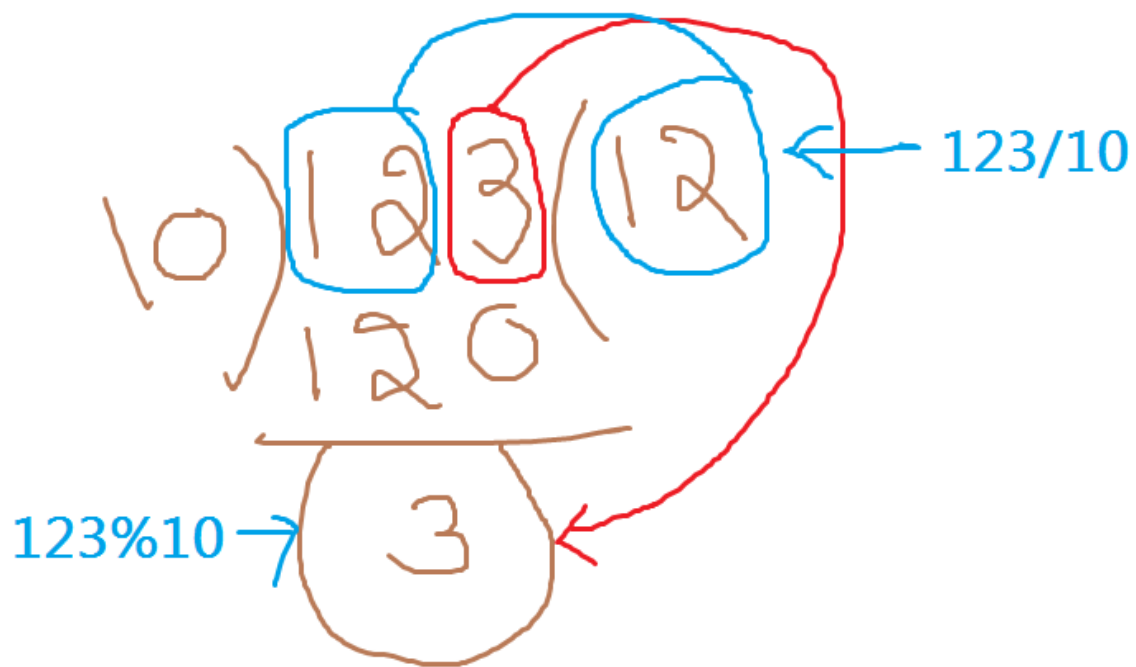
**Eg. print a 3 digit no in reverse order without using loop.**

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int  n=123;
clrscr();
printf("%d reverse is %d",n,n%10); /*123 rev is 123%10=3 */
n=n/10; /* last digit 3 deleted i.e. n=12 */
printf("%d%d",n%10,n/10);/*12%10=2, 12/10=1 */
getch();
}
```

```
123 reverse is 321_
```
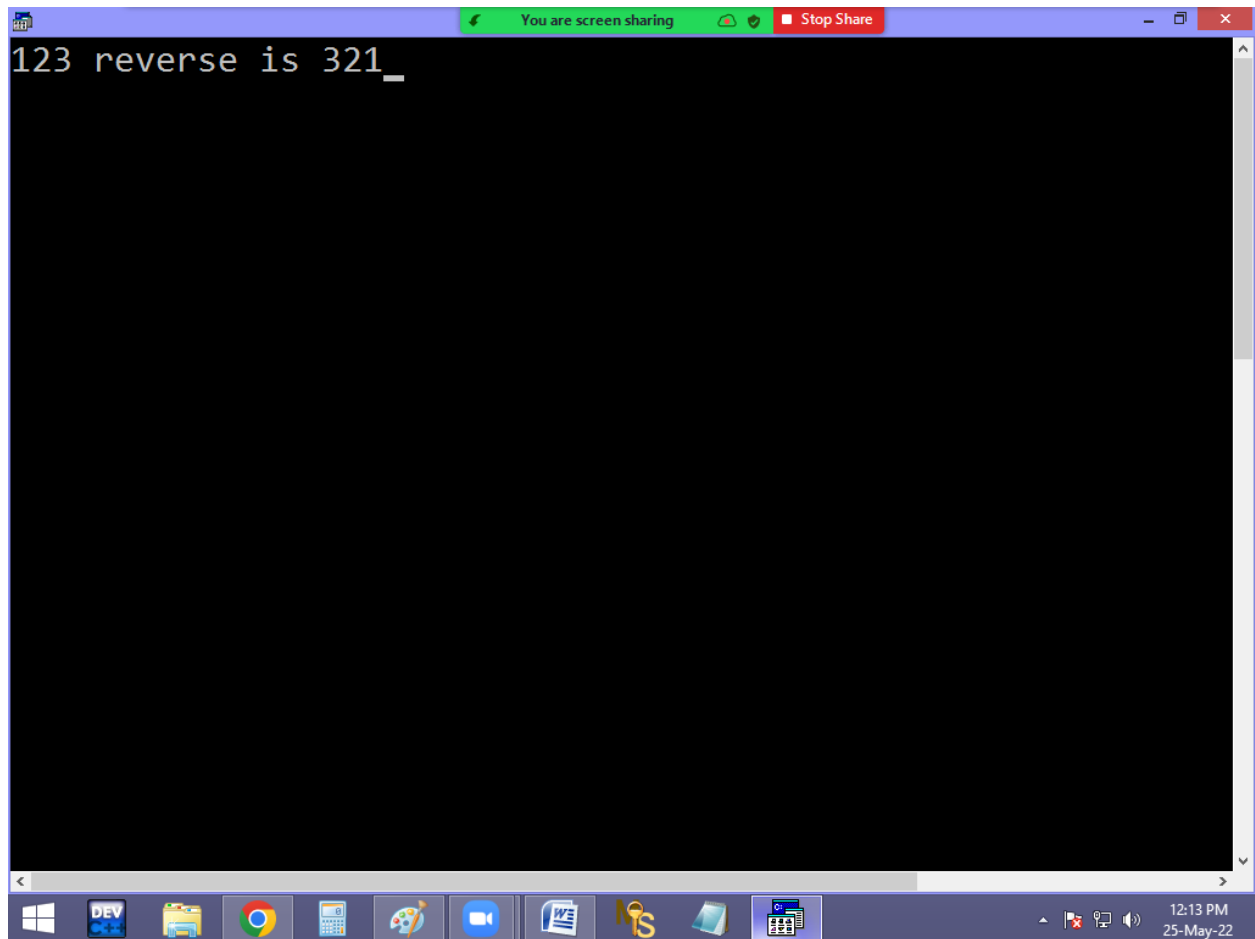
Eg. Read two numbers and do all arithmetic operations [ +, -, *, %, / ].

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a=5, b=2;
clrscr();
printf("sum=%d\n",a+b);
printf("sub=%d\n",a-b);
printf("Pro=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%d",a/b);
getch();
}
```

```
sum=7
sub=3
Pro=10
Mod=1
Div=2
```

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a=5, b=2;
clrscr();
printf("sum=%d\n",a+b);
printf("sub=%d\n",a-b);
printf("Pro=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%f",(float)a/b); /* explicit type casting*/
getch();
}
```

```
sum=7
sub=3
Pro=10
Mod=1
Div=2.500000
```

Error: Illegal use of floating point in function main

```c
#include<stdio.h>
#include<conio.h>
void main()
{
float a=5.3, b=2.77;
scr();
printf("sum=%f\n",a+b);
printf("sub=%f\n",a-b);
printf("Pro=%f\n",a*b);
printf("Mod=%f\n",a%b);
printf("Div=%f",a/b);
getch();
}
```

```c
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
float a=5.3, b=2.77;
clrscr();
printf("sum=%f\n",a+b);
printf("sub=%f\n",a-b);
printf("Pro=%f\n",a*b);
printf("Mod=%f\n",fmod(a,b));
printf("Div=%f",a/b);
getch();
}
```
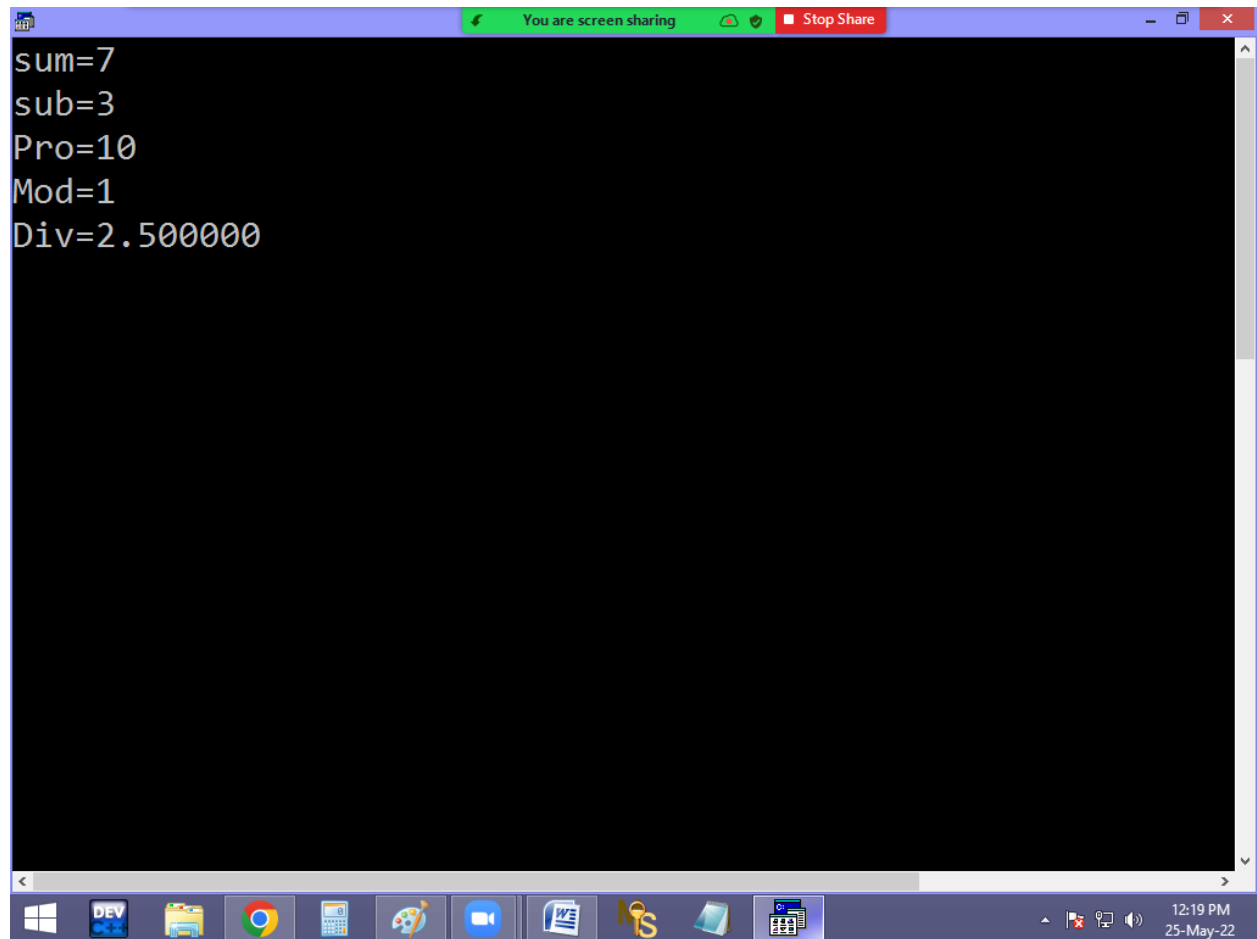
```
sum=8.070000
sub=2.530000
Pro=14.681000
Mod=2.530000
Div=1.913357
```

File     Edit     Run     Compile     Project     Options     Debug

Line 12     Col 16     Insert Indent Tab Fill Unindent *

```c
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
float a=5.3, b=2.77;
clrscr();
printf("sum=%.2f\n",a+b);
printf("sub=%.2f\n",a-b);
printf("Pro=%.2f\n",a*b);
printf("Mod=%.2f\n",fmod(a,b));
printf("Div=%.2f",a/b);
getch();
}
```

```
sum=8.07
sub=2.53
Pro=14.68
Mod=2.53
Div=1.91_
```
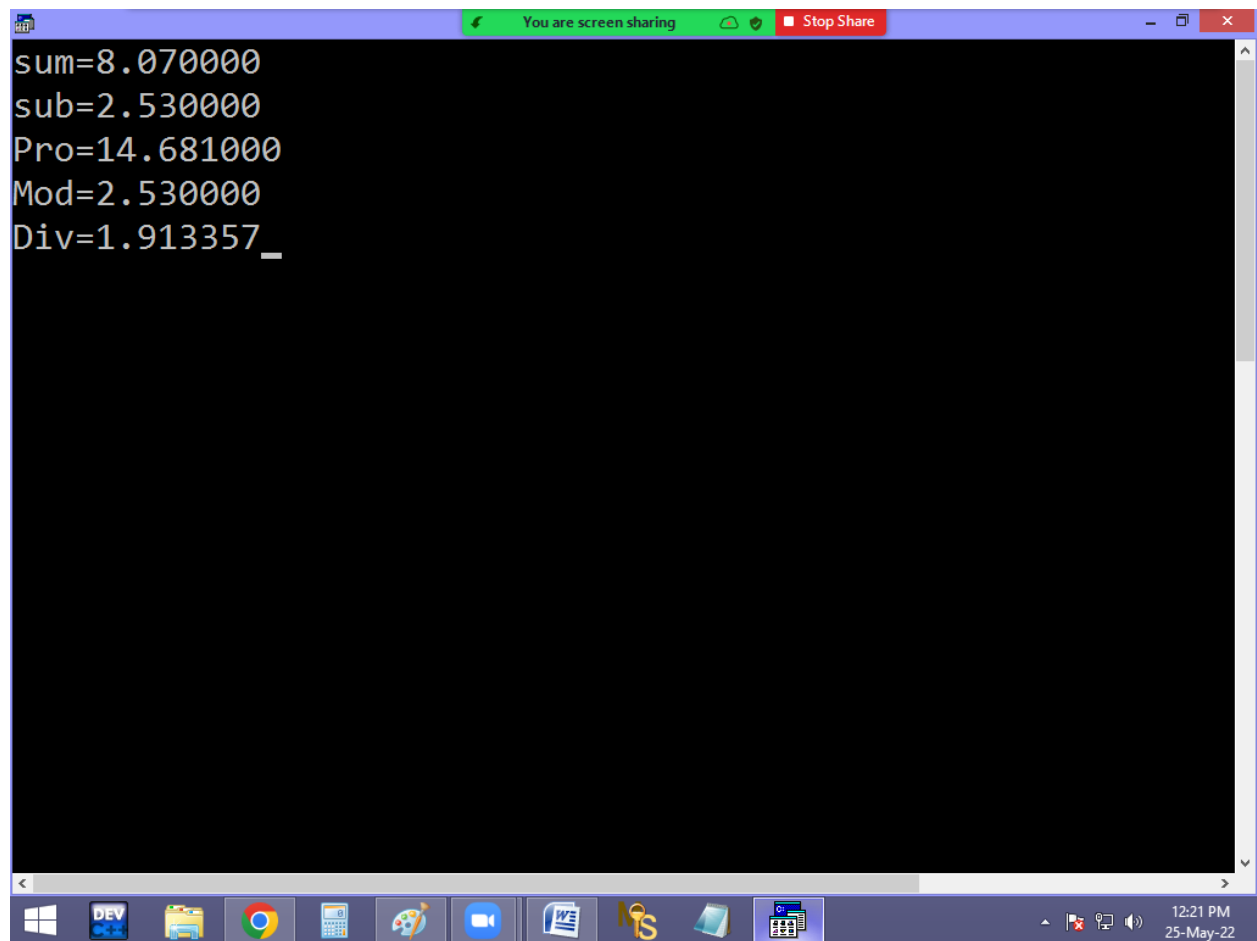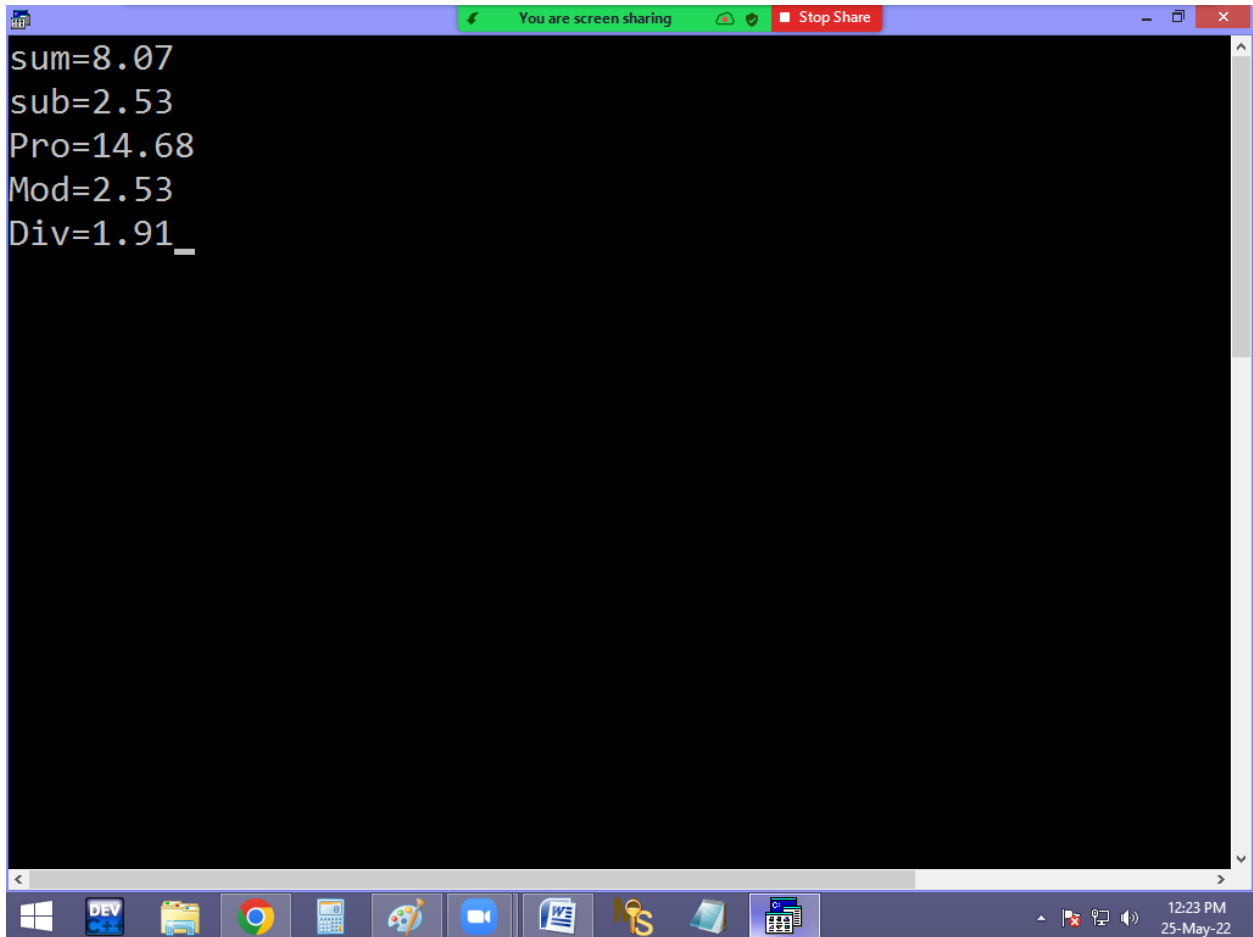
## Relational operators [ ==(comparison), <, >, <=, >=, !=( not equal ) ]:

They are used to check the given condition or expression is true or false. If condition true it return always 1. If condition false always it return 0.

```c
#include<stdio.h>#include<conio.h>
void main()
{
clrscr();
printf("%d\n",9==9);
printf("%d\n",9==19);
printf("%d\n",9!=19);
printf("%d\n",9==9.0);
printf("%d\n",'a'==65); /* 'a' ascii 97==65==>false==>0*/
printf("%d\n",'a'==97);
printf("%d\n",'a'=='A'+32); /*97==65+32*/
printf("%d\n",0.1 > .1);
printf("%d\n",'a' <= 'z'); /* 97<=122 */
printf("%d\n", 5+3/2==4); /*3/2=1 + 5=6==4==>false==>0*/
printf("%d\n", (5+3)/2==4);
printf("%d\n", 5/5%5==0);getch();
}
```

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25-May-22

```
1
0
1
1
0
1
1
0
1
0
1
0
```