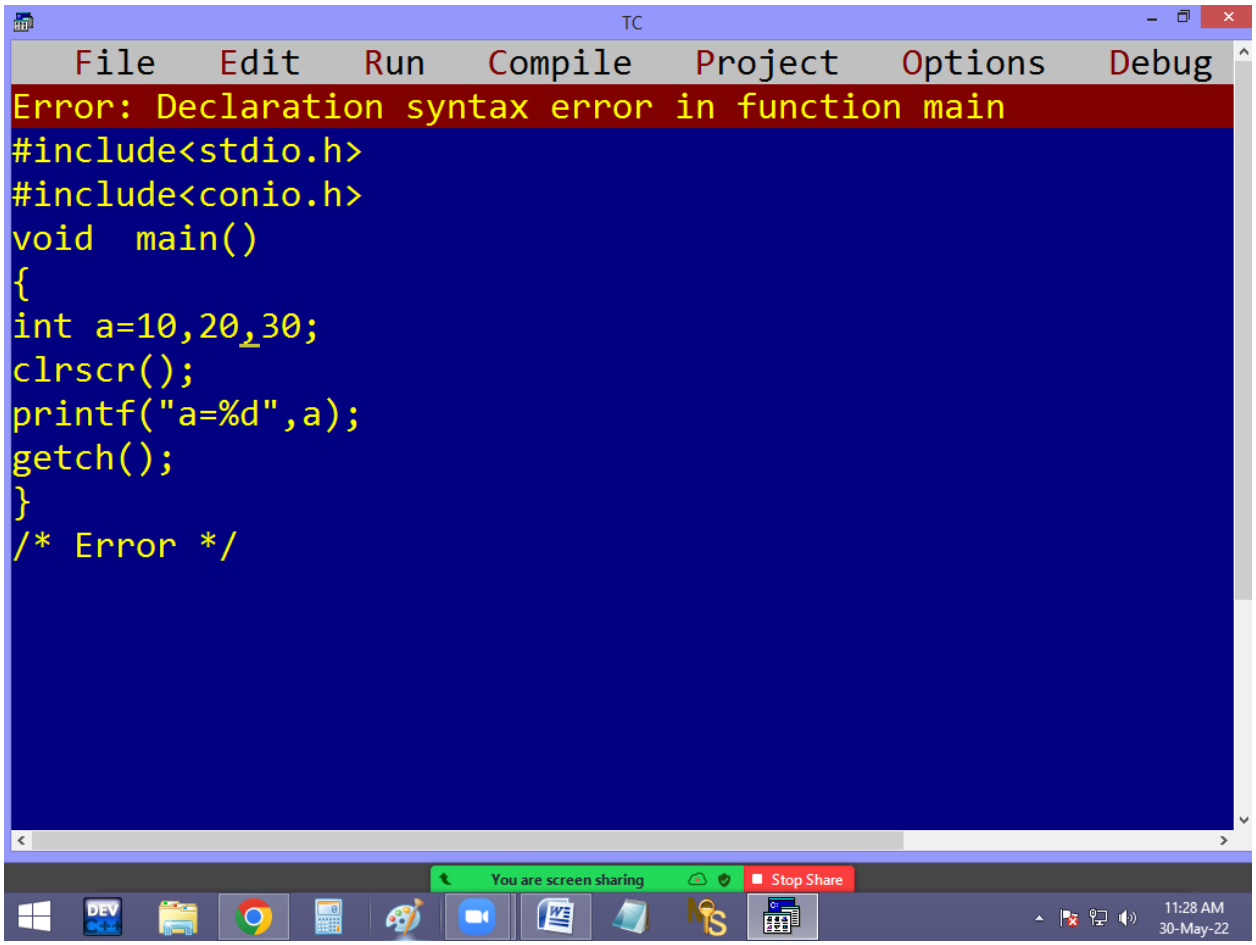
() and , separators:


TC
File Edit Run Compile Project Options Debug
Error: Declaration syntax error in function main
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10,20,30;
clrscr();
printf("a=%d",a);
getch();
}
/* Error */
You are screen sharing
Stop Share
11:28 AM
30-May-22

TC

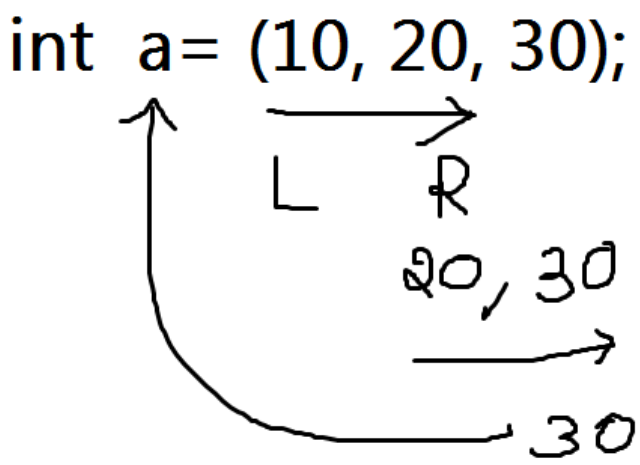
File Edit Run Compile Project Options Debug

Line 10 Col 8 Insert Indent Tab Fill Unindent *

```
#include<stdio.h>
#include<conio.h>
void  main()
{
int a=(10,20,30);
clrscr();
printf("a=%d",a);
getch();
}
/* a=30_*/
```

You are screen sharing Stop Share

11:28 AM 30-May-22

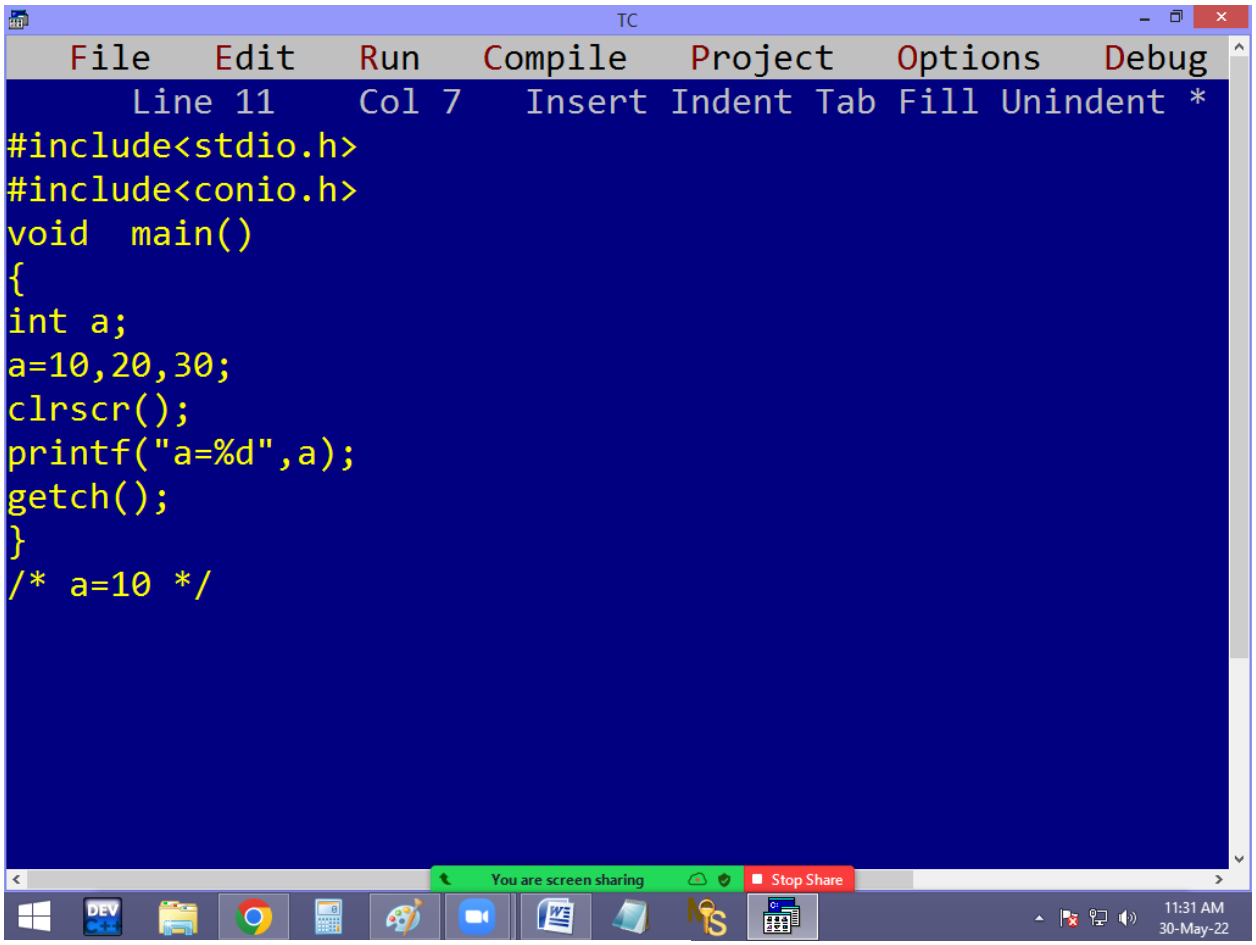


a=10;

a=20;

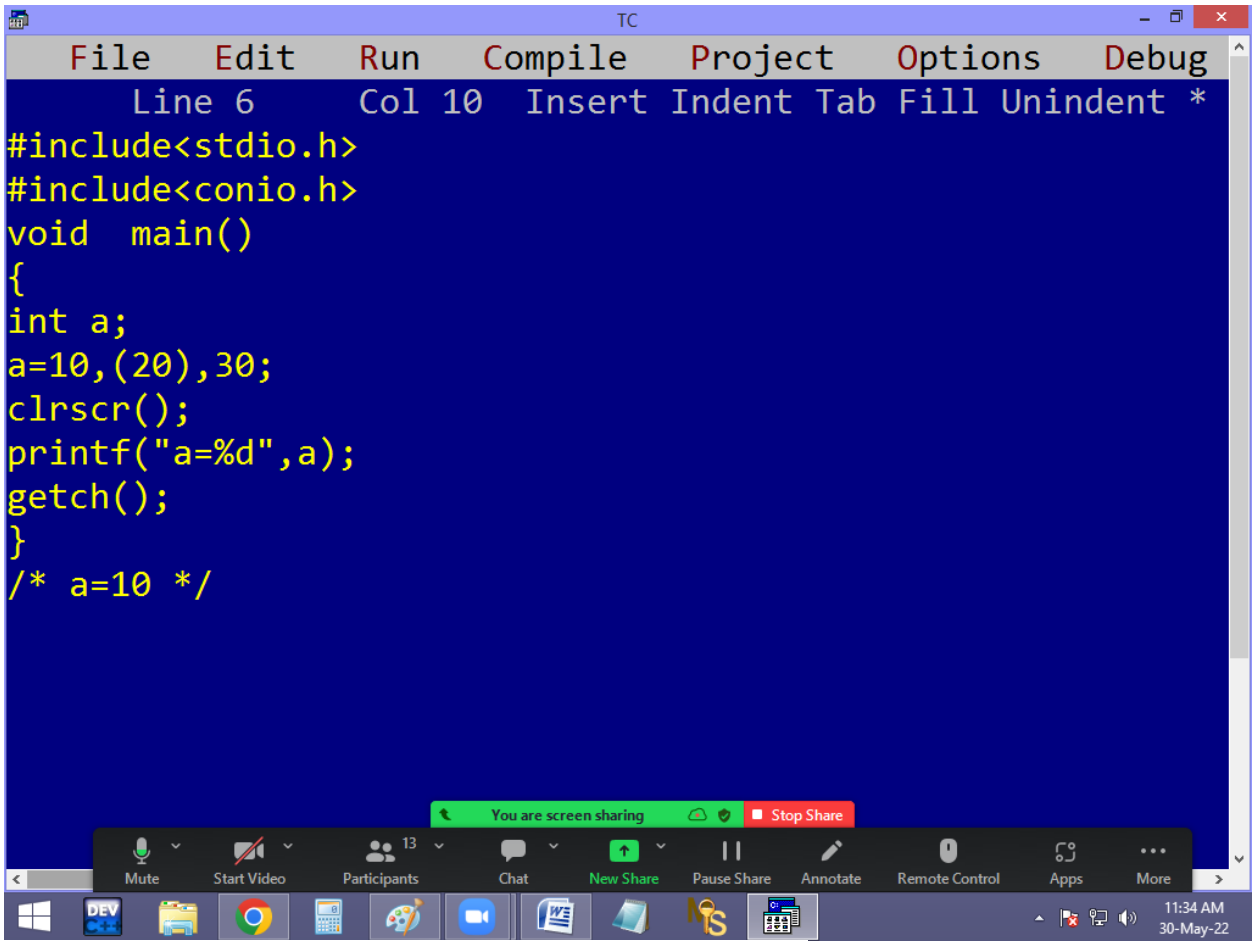
a=30;

p(a);



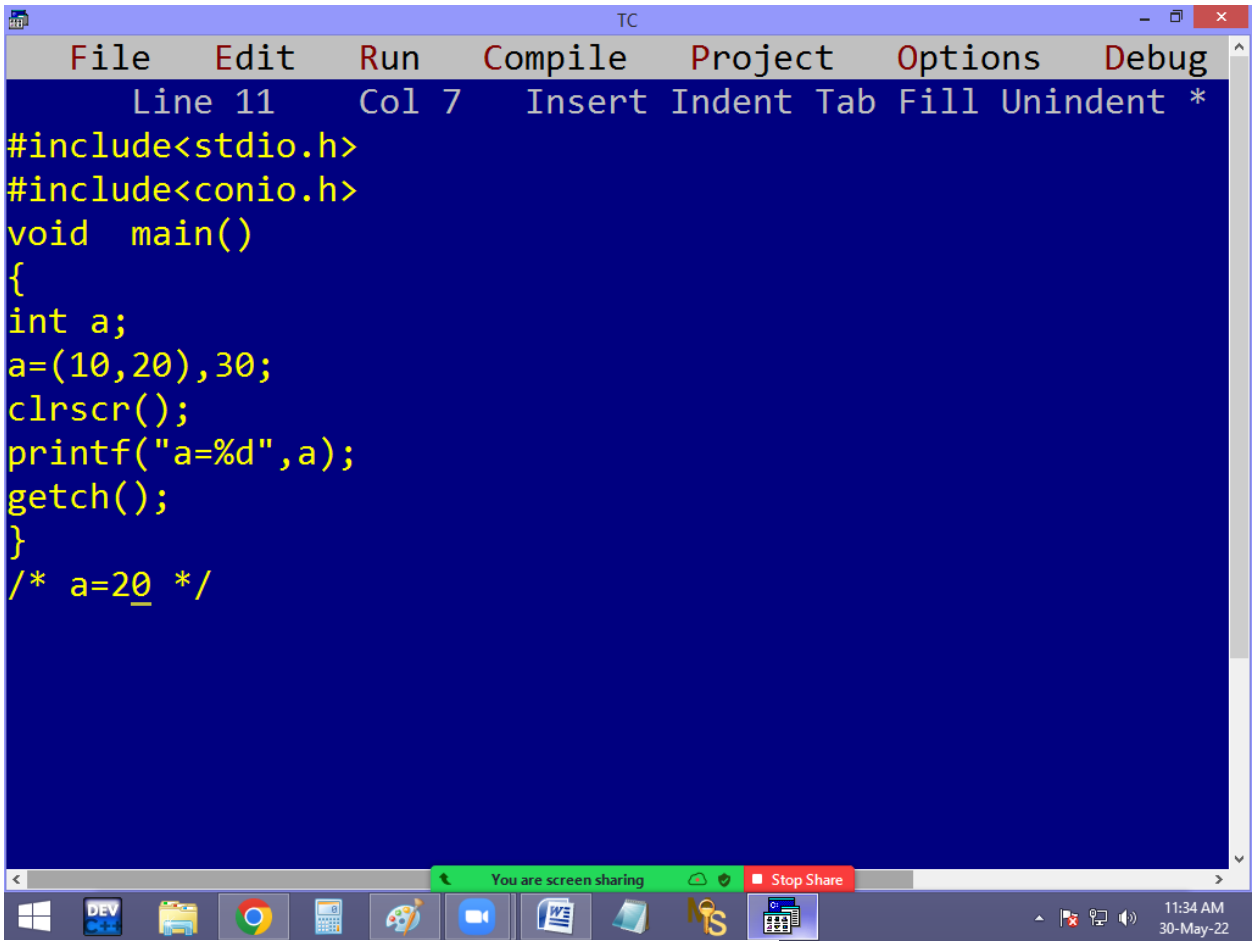
a = 10, 20, 30;

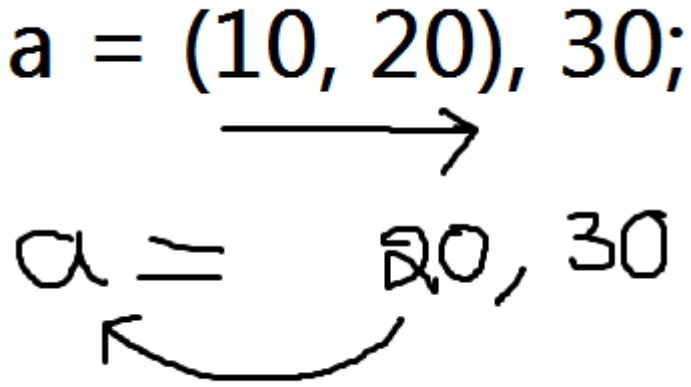
Note: Here = have more priority than , operator.

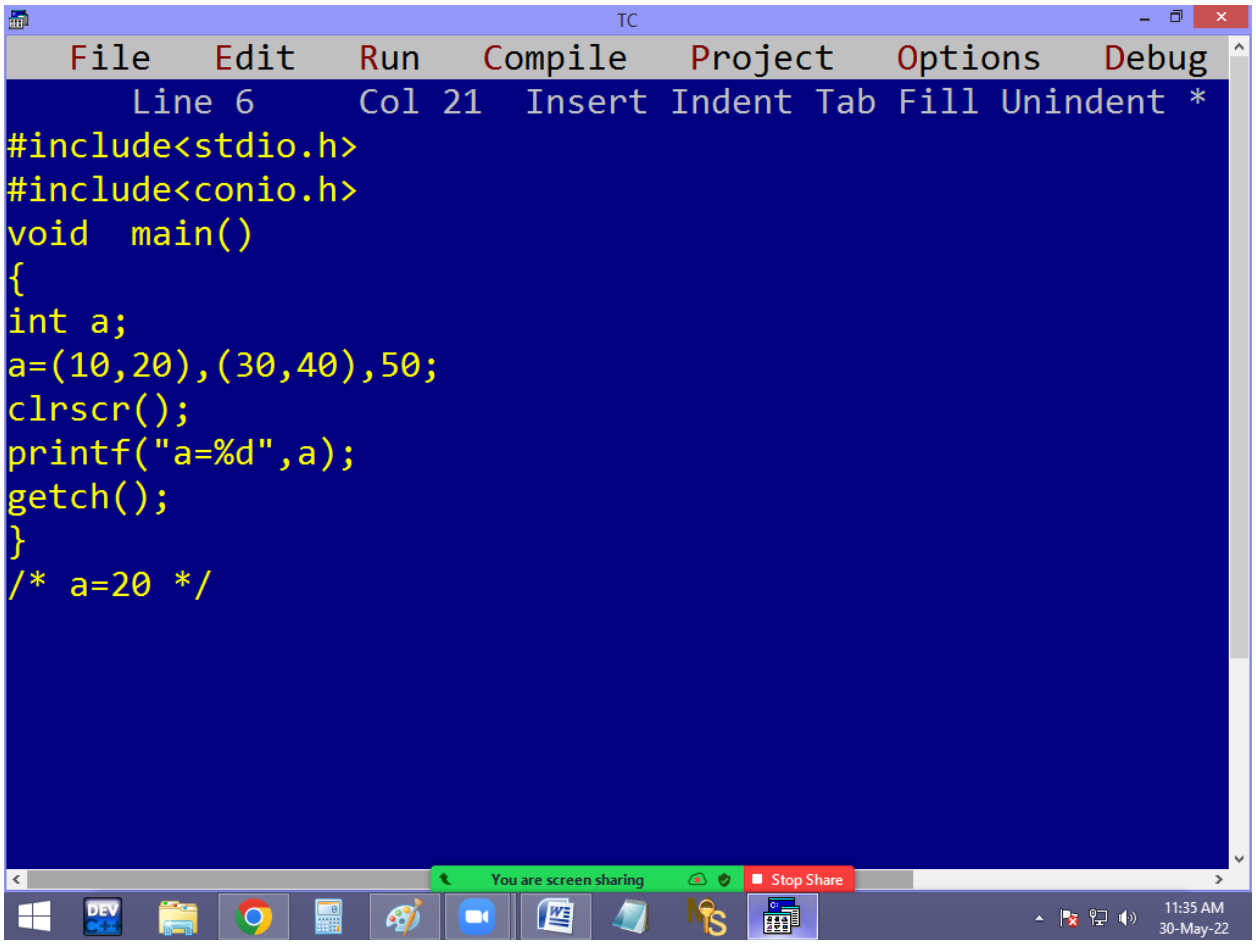


a = 10 , (20), 30;

a = 10, 20, 30;


TC
File Edit Run Compile Project Options Debug
Line 11 Col 7 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
a=(10,20),30;
clrscr();
printf("a=%d",a);
getch();
}
/* a=20 */
You are screen sharing
Stop Share
11:34 AM
30-May-22

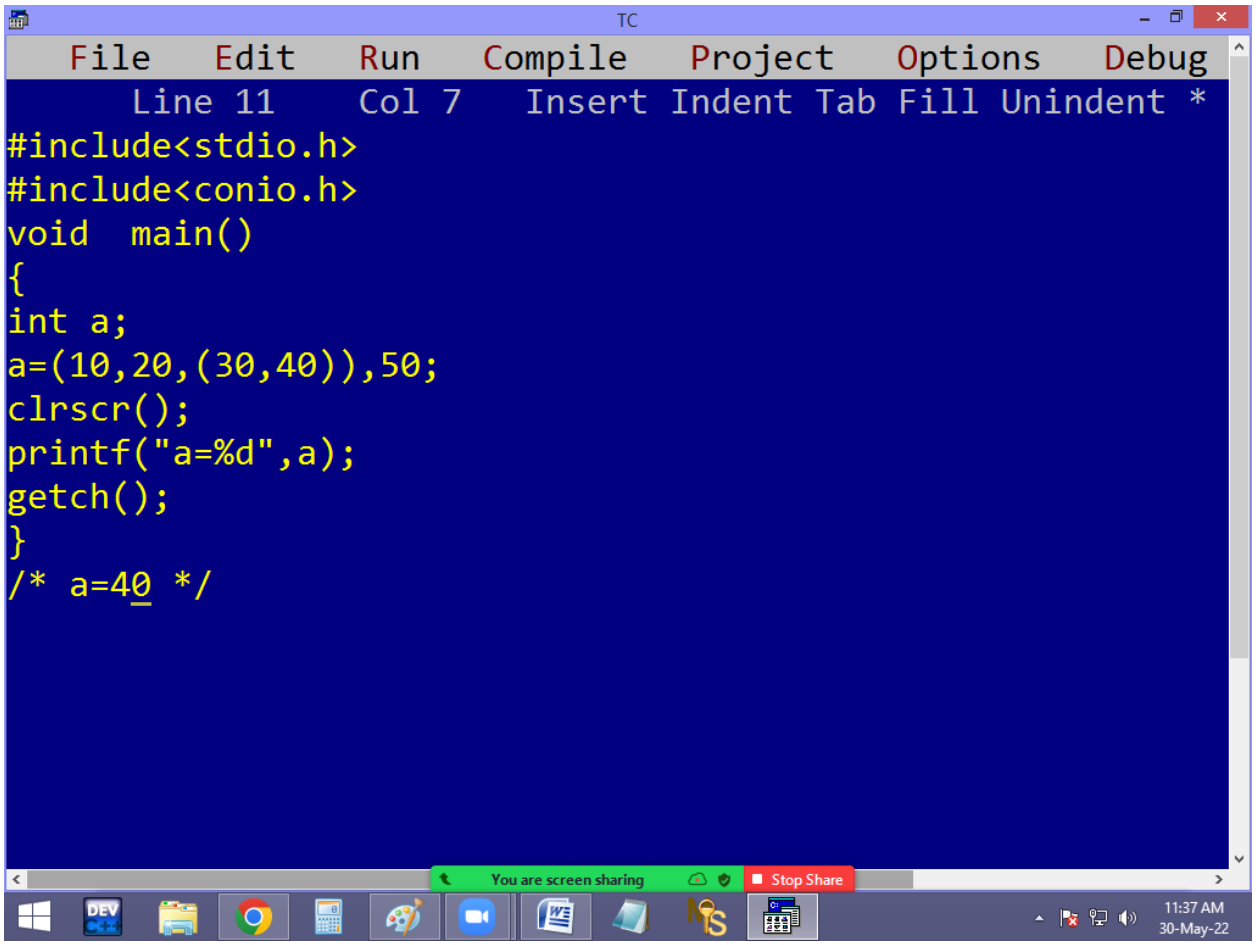

a = (10, 20), 30;
a = 20, 30

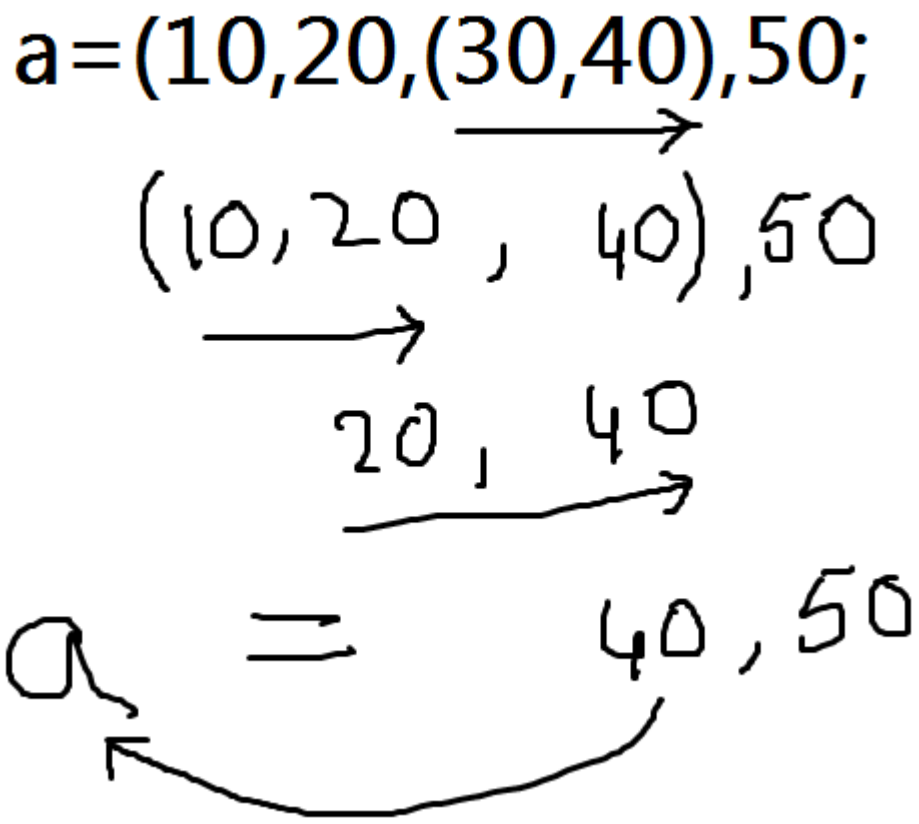


a = (10,20), (30,40), 50;

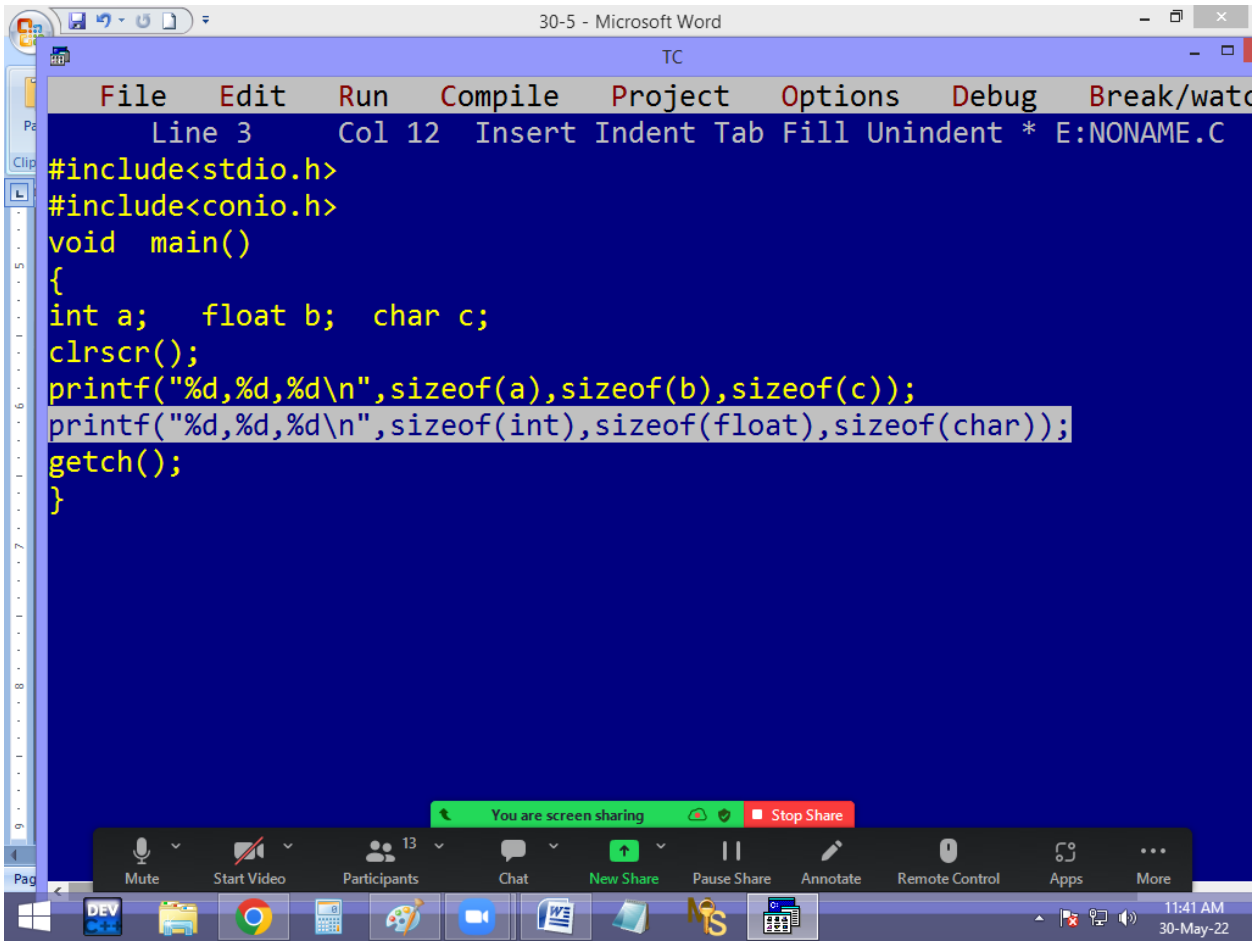
20, (30,40), 50;

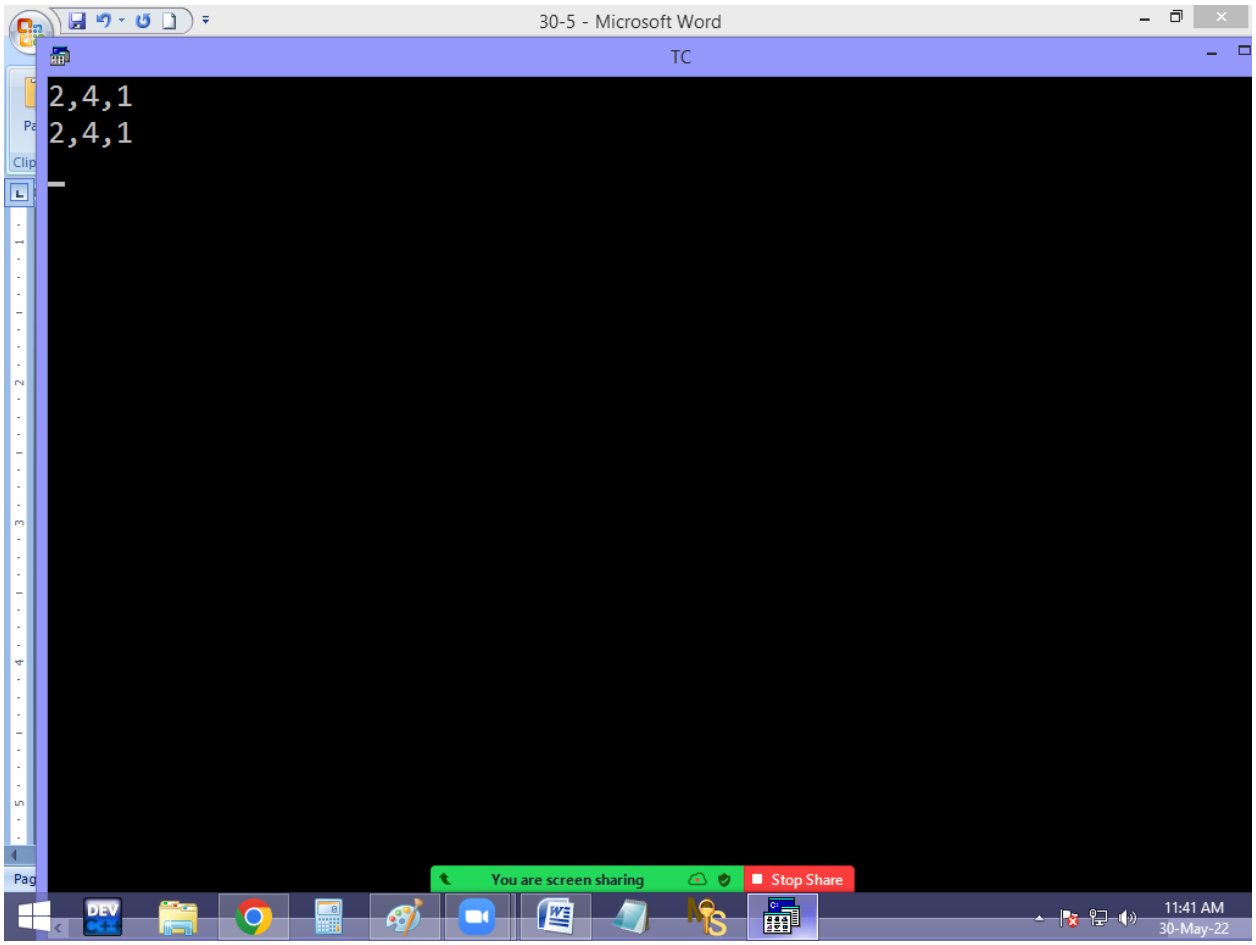
a = 20, 40, 50;

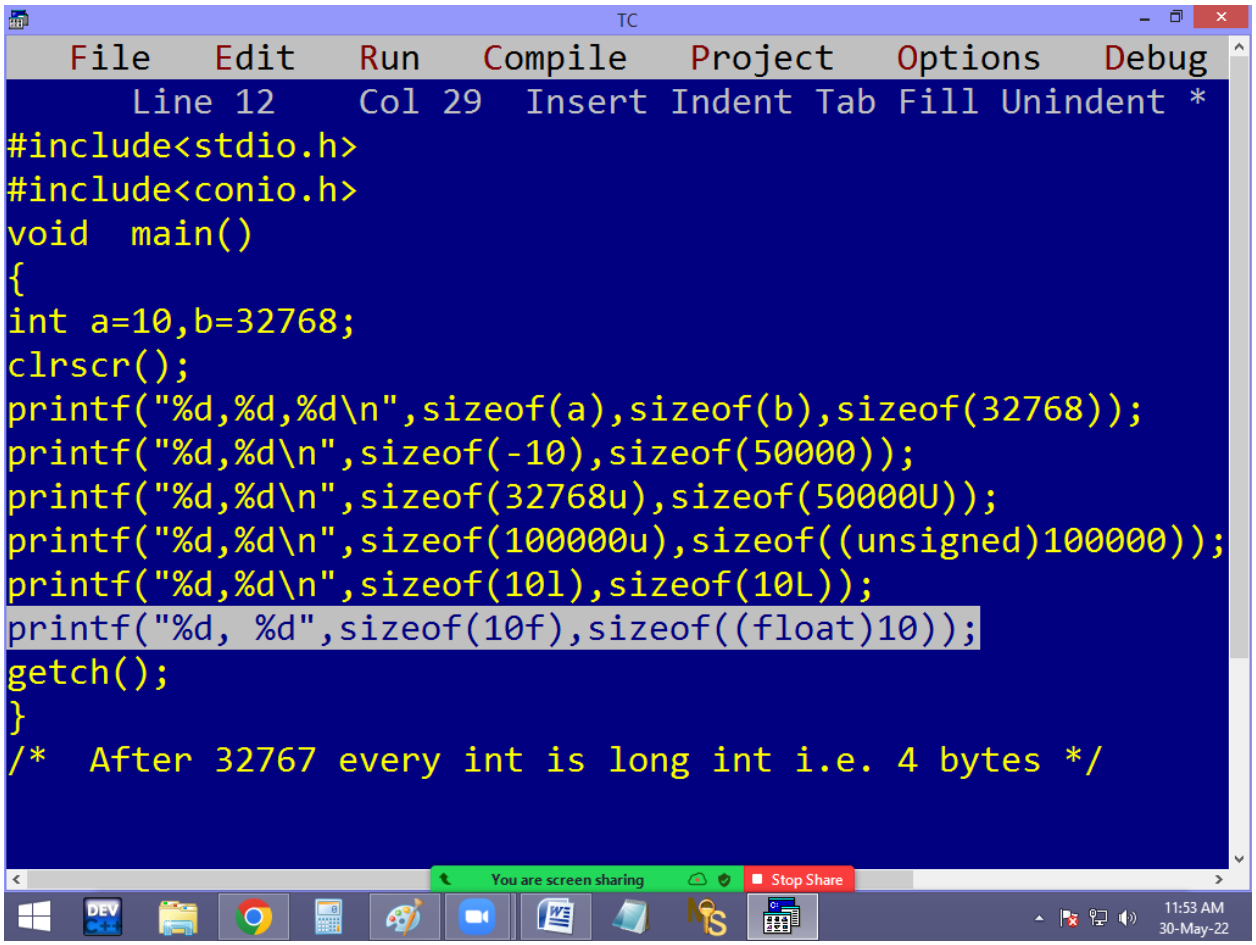

TC
File Edit Run Compile Project Options Debug
Line 11 Col 7 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
a=(10,20,(30,40)),50;
clrscr();
printf("a=%d",a);
getch();
}
/* a=40 */
You are screen sharing
Stop Share
11:37 AM
30-May-22

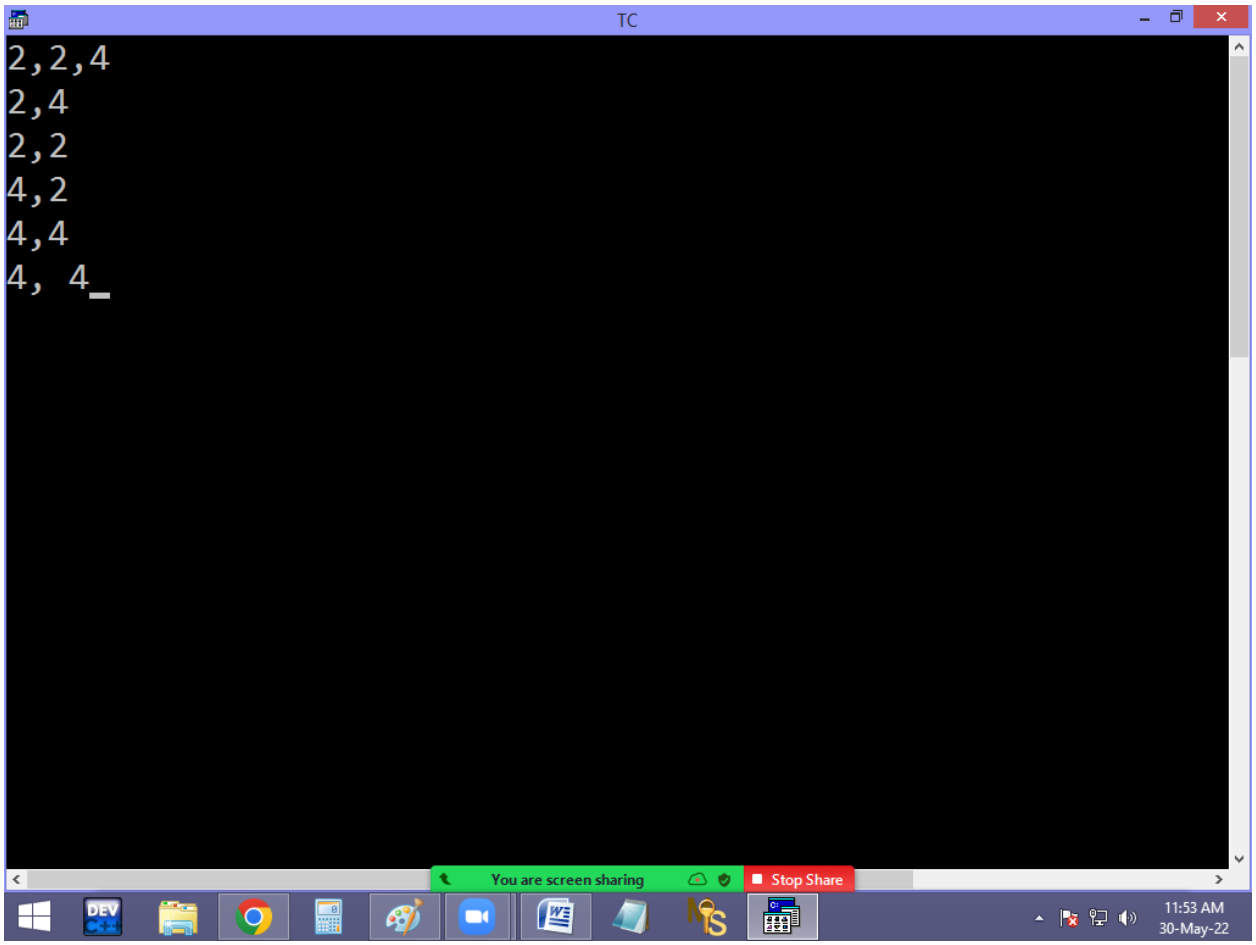


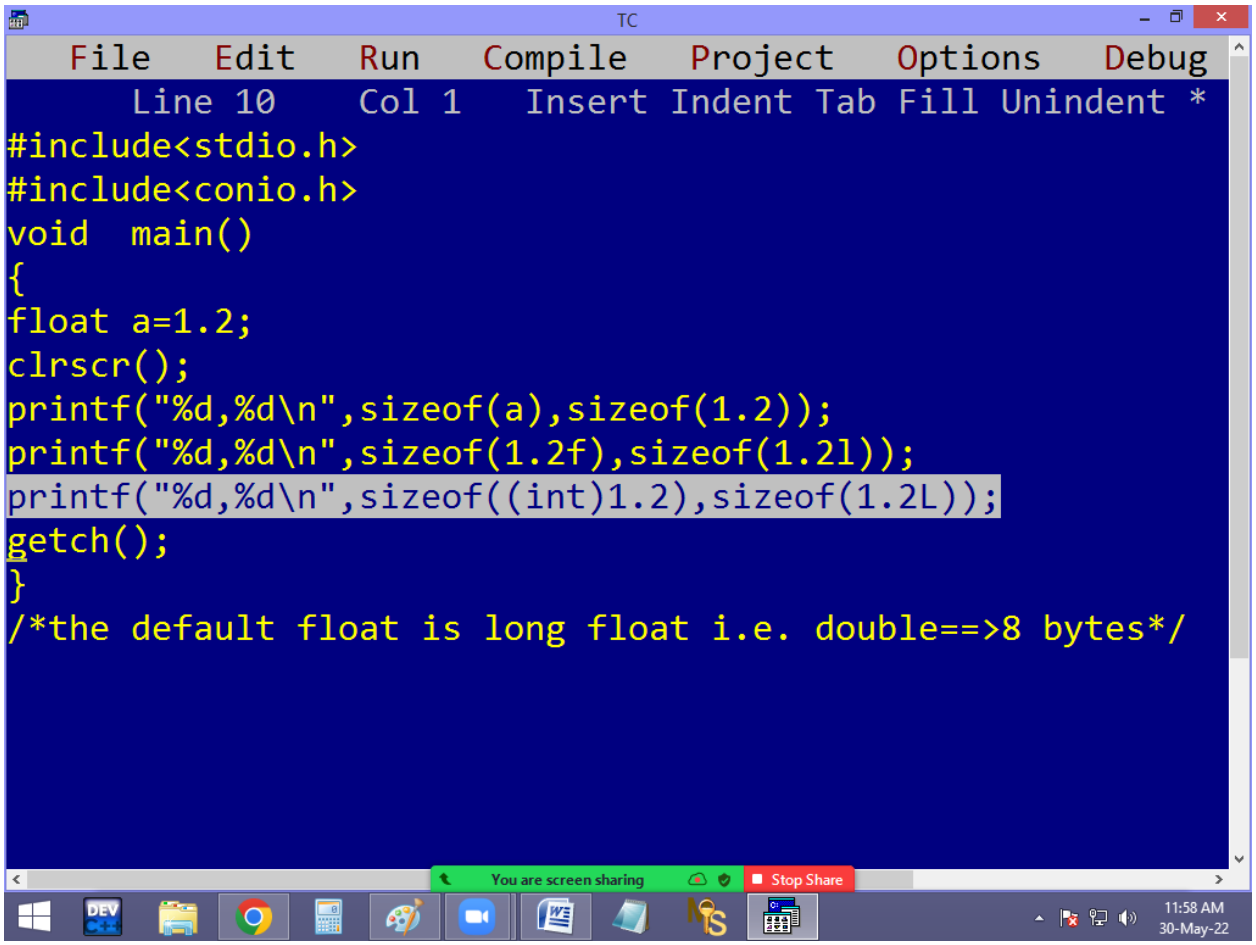
sizeof(): It returns the no of bytes taken by a variable / data type / value.

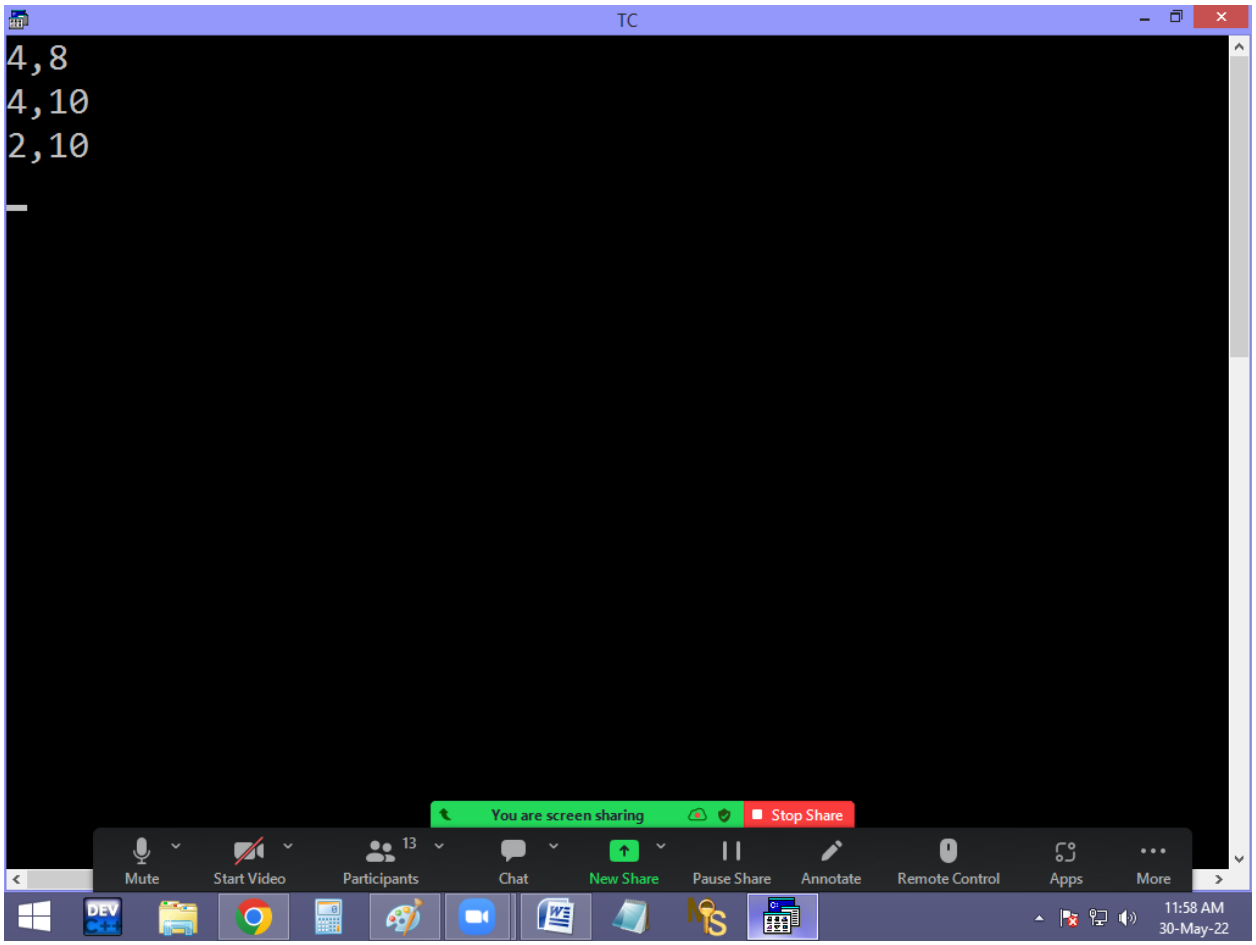

30-5 - Microsoft Word
TC
File Edit Run Compile Project Options Debug Break/watc
Line 3 Col 12 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a; float b; char c;
clrscr();
printf("%d,%d,%d\n",sizeof(a),sizeof(b),sizeof(c));
printf("%d,%d,%d\n",sizeof(int),sizeof(float),sizeof(char));
getch();
}
You are screen sharing
Stop Share
Mute
Start Video
Participants
13
Chat
New Share
Pause Share
Annotate
Remote Control
Apps
More
11:41 AM
30-May-22

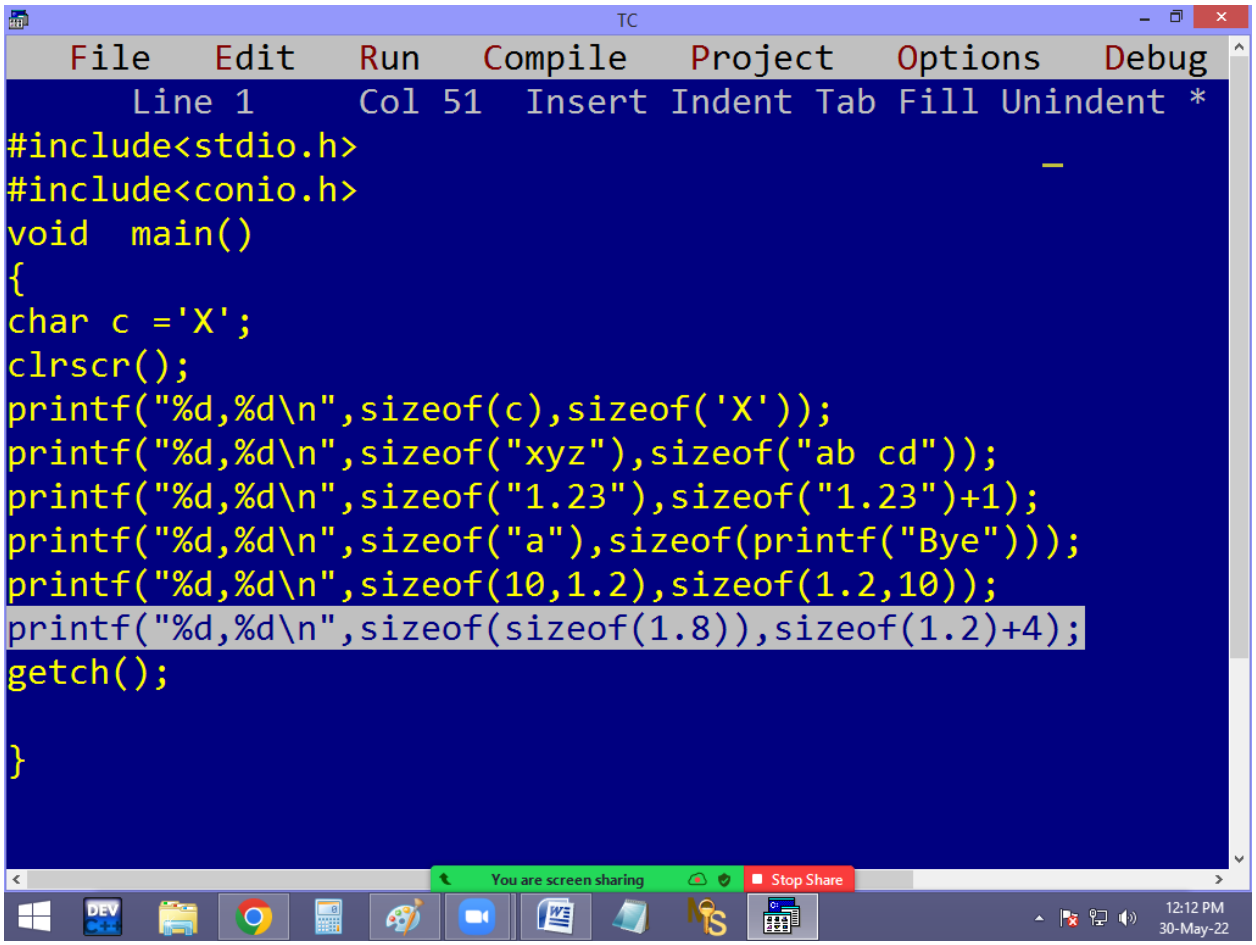

30-5 - Microsoft Word
TC
2,4,1
2,4,1
You are screen sharing
Stop Share
11:41 AM
30-May-22

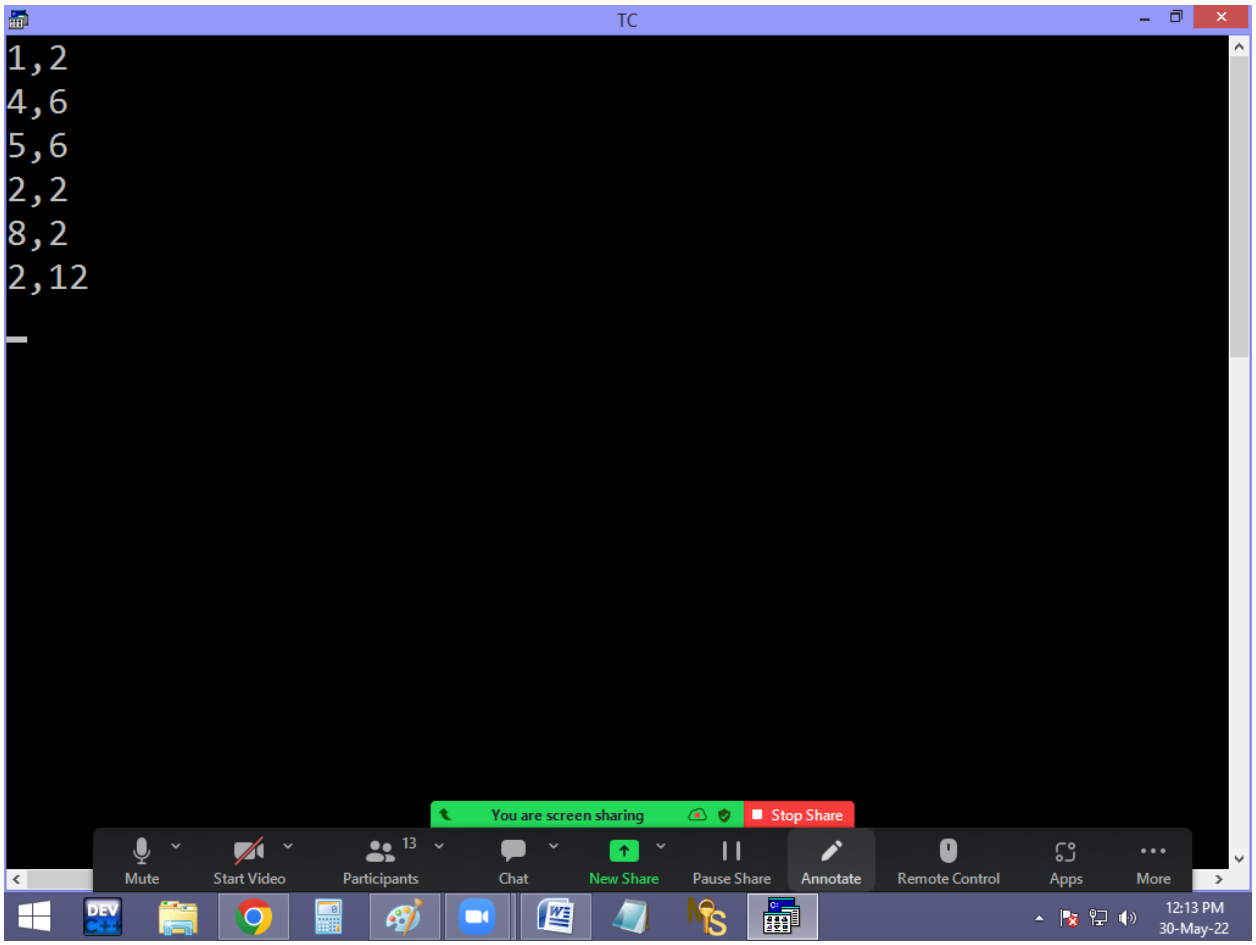

TC
File Edit Run Compile Project Options Debug
Line 12 Col 29 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10,b=32768;
clrscr();
printf("%d,%d,%d\n",sizeof(a),sizeof(b),sizeof(32768));
printf("%d,%d\n",sizeof(-10),sizeof(50000));
printf("%d,%d\n",sizeof(32768u),sizeof(50000U));
printf("%d,%d\n",sizeof(100000u),sizeof((unsigned)100000));
printf("%d,%d\n",sizeof(10l),sizeof(10L));
printf("%d, %d",sizeof(10f),sizeof((float)10));
getch();
}
/* After 32767 every int is long int i.e. 4 bytes */
You are screen sharing
Stop Share
11:53 AM
30-May-22

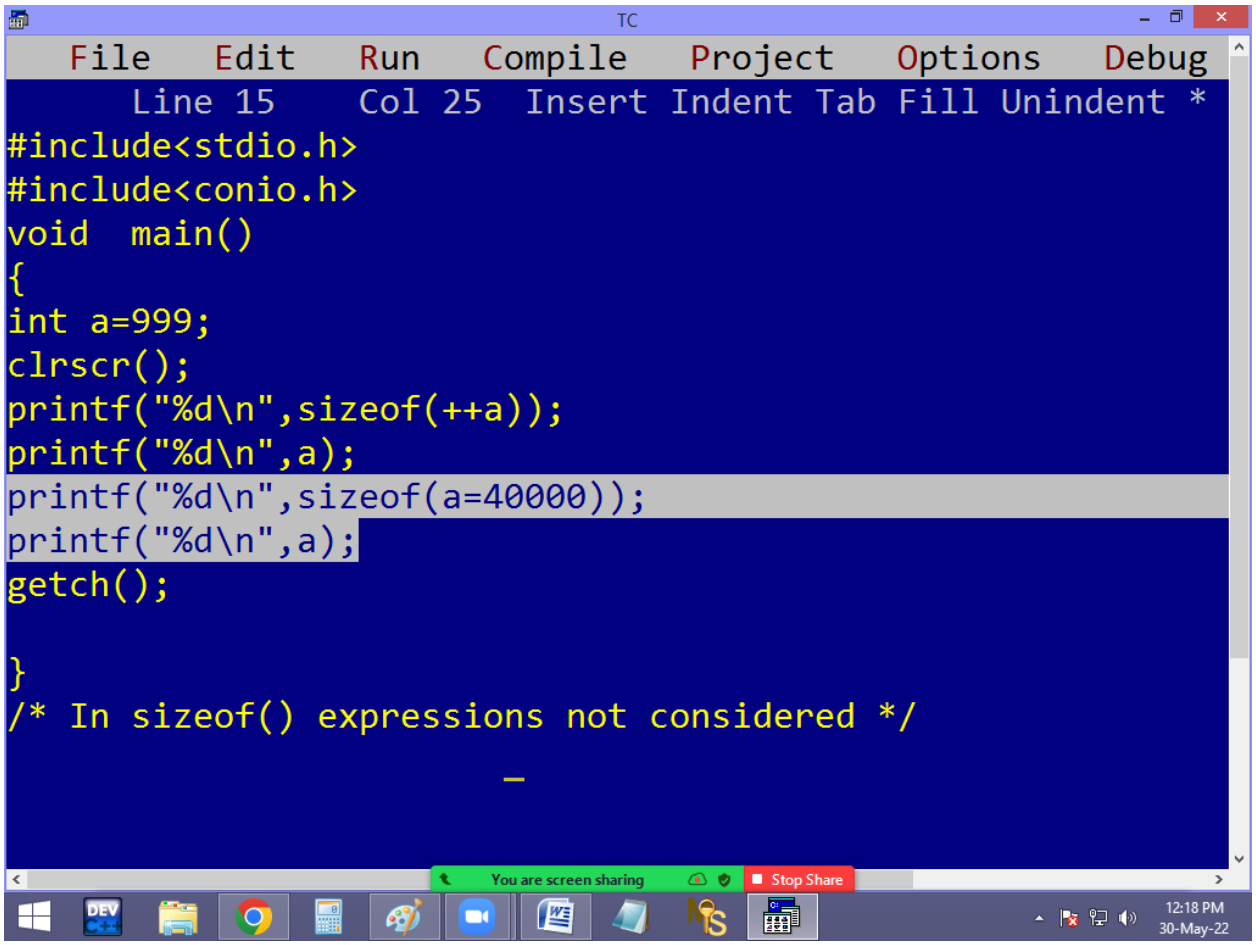

TC
2,2,4
2,4
2,2
4,2
4,4
4, 4
You are screen sharing
Stop Share
11:53 AM
30-May-22

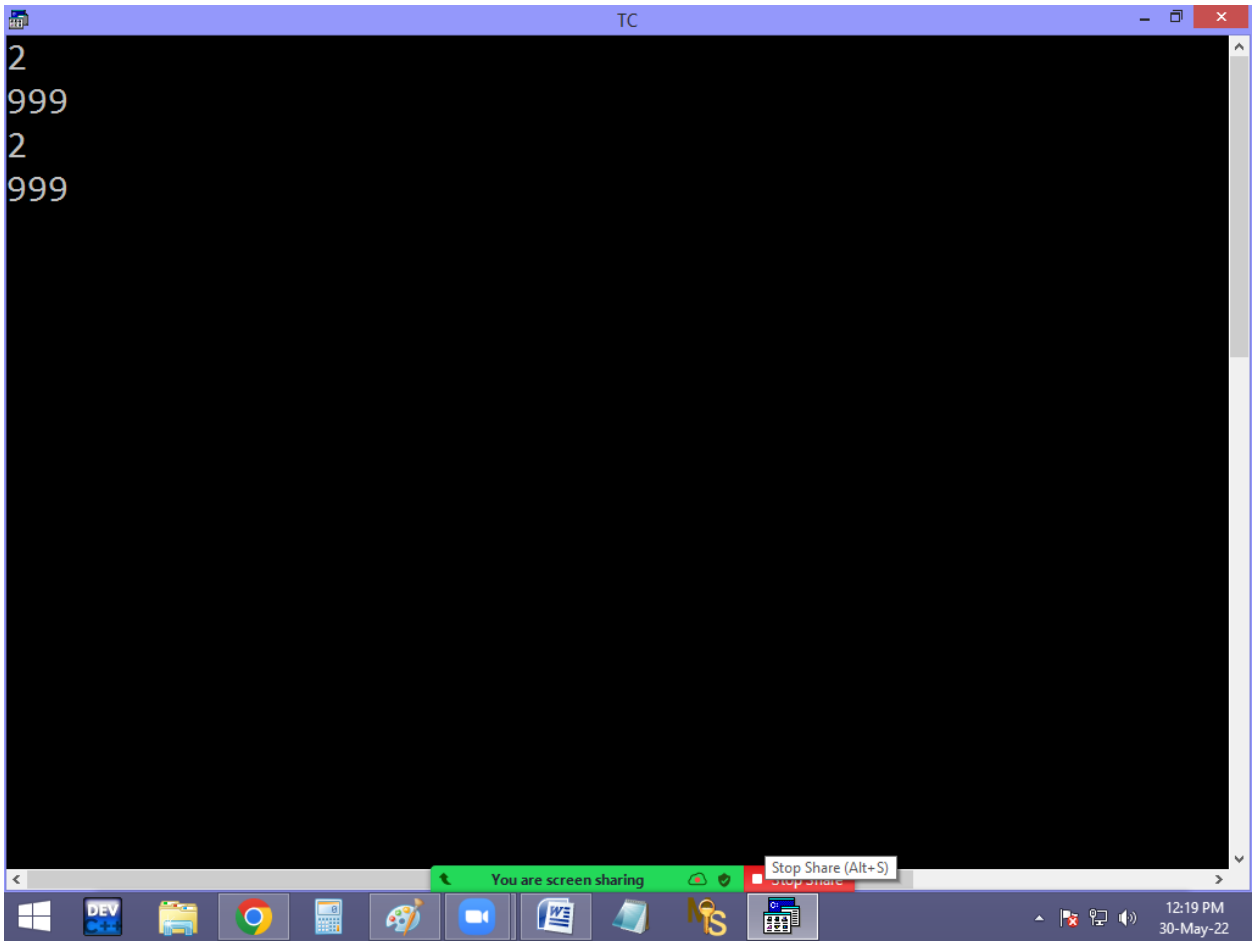

TC
File Edit Run Compile Project Options Debug
Line 10 Col 1 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
float a=1.2;
clrscr();
printf("%d,%d\n",sizeof(a),sizeof(1.2));
printf("%d,%d\n",sizeof(1.2f),sizeof(1.2l));
printf("%d,%d\n",sizeof((int)1.2),sizeof(1.2L));
getch();
}
/*the default float is long float i.e. double==>8 bytes*/
You are screen sharing
Stop Share
11:58 AM
30-May-22


TC
4,8
4,10
2,10
You are screen sharing
Stop Share
Mute
Start Video
Participants
13
Chat
New Share
Pause Share
Annotate
Remote Control
Apps
More
11:58 AM
30-May-22

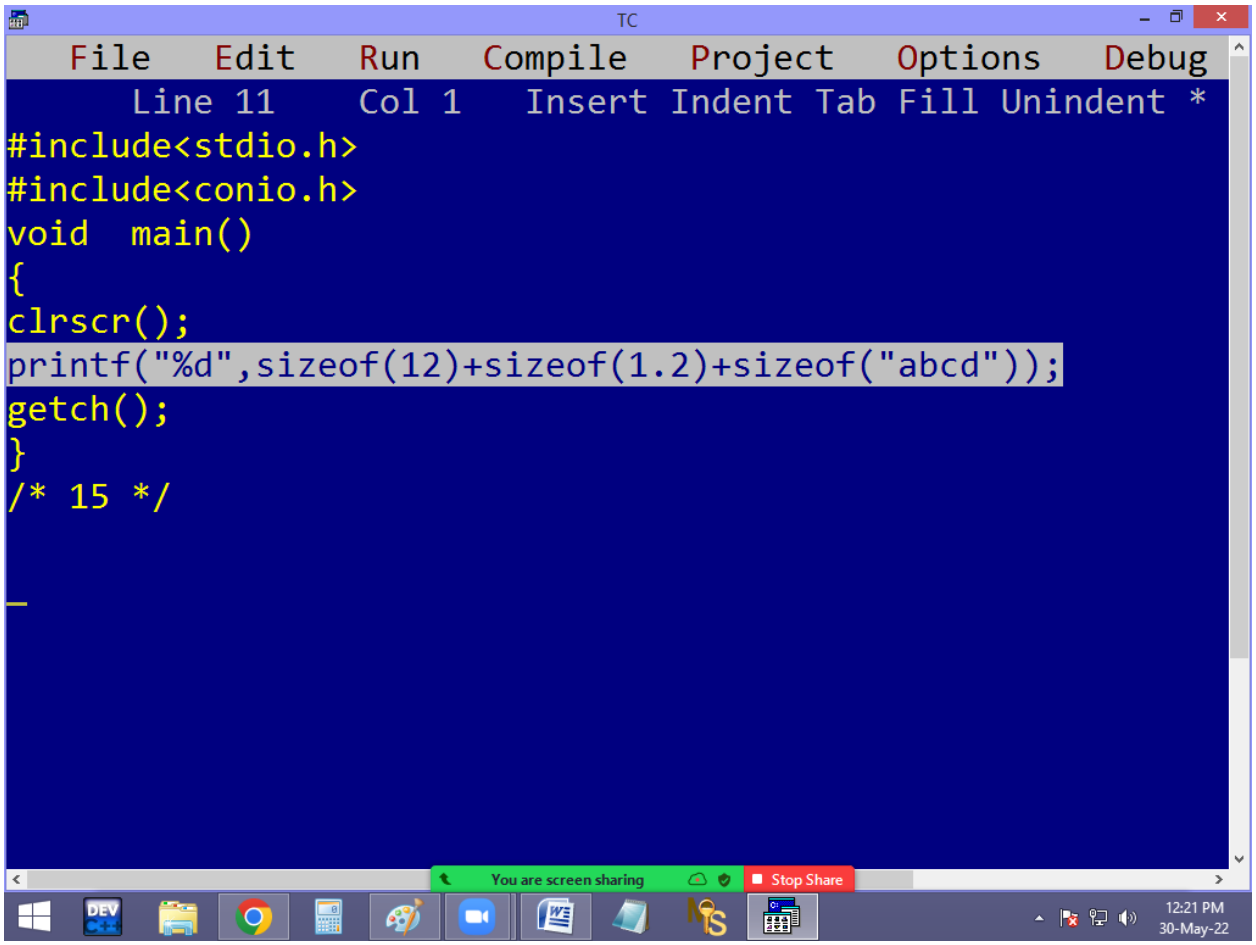

TC
File Edit Run Compile Project Options Debug
Line 1 Col 51 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
char c ='X';
clrscr();
printf("%d,%d\n",sizeof(c),sizeof('X'));
printf("%d,%d\n",sizeof("xyz"),sizeof("ab cd"));
printf("%d,%d\n",sizeof("1.23"),sizeof("1.23")+1);
printf("%d,%d\n",sizeof("a"),sizeof(printf("Bye")));
printf("%d,%d\n",sizeof(10,1.2),sizeof(1.2,10));
printf("%d,%d\n",sizeof(sizeof(1.8)),sizeof(1.2)+4);
getch();
}
You are screen sharing
Stop Share
12:12 PM
30-May-22


TC
1,2
4,6
5,6
2,2
8,2
2,12
You are screen sharing
Stop Share
Mute
Start Video
Participants
13
Chat
New Share
Pause Share
Annotate
Remote Control
Apps
More
12:13 PM
30-May-22


TC
File Edit Run Compile Project Options Debug
Line 15 Col 25 Insert Indent Tab Fill Unindent *
#include<stdio.h>
#include<conio.h>
void main()
{
int a=999;
clrscr();
printf("%d\n",sizeof(++a));
printf("%d\n",a);
printf("%d\n",sizeof(a=40000));
printf("%d\n",a);
getch();
}
/* In sizeof() expressions not considered */
You are screen sharing
Stop Share
12:18 PM
30-May-22


TC
2
999
2
999
You are screen sharing
Stop Share (Alt+S)
12:19 PM
30-May-22


TC
File Edit Run Compile Project Options Debug
Error: Expression syntax in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d",sizeof( ));
getch();
}
You are screen sharing
Stop Share
12:20 PM
30-May-22



BITWISE OPERATORS

Bitwise operator's works on bits.

Turbo-c is a 16 bit compiler. Due to this bitwise operations are limited to 16 bits only [2^0 to 2^{15}].

Bitwise operators operate **integer** type values only.

We have to calculate only the **on** bits [**1**].

When the first bit[**Sign bit**] is **1** then the number is **Negative** and it is **0** then the number is **positive**.

They are very much used in system software development.

Note: Bitwise operator is low level feature.

C-Language supports following bitwise operators.

& -Bitwise and

| - Bitwise or

^ - XOR ==> Exclusive OR

~ - Compliment operator

<< - Left shift operator

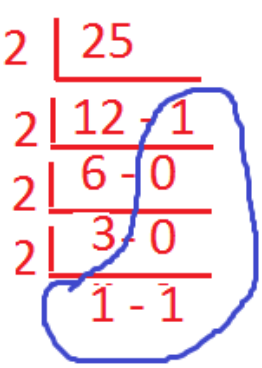
>> - Right shift operator

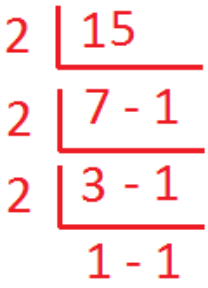
& - Bitwise and: In this both bits are 1's then result bit is 1. Otherwise result bit is 0.

Eg: **25 & 15 = 9**

25 = 0000 0000 0001 1001

15 = 0000 0000 0000 1111





---

25 & 15 = 9

25 = 0000 0000 0001 1001

15 = 0000 0000 0000 1111

&

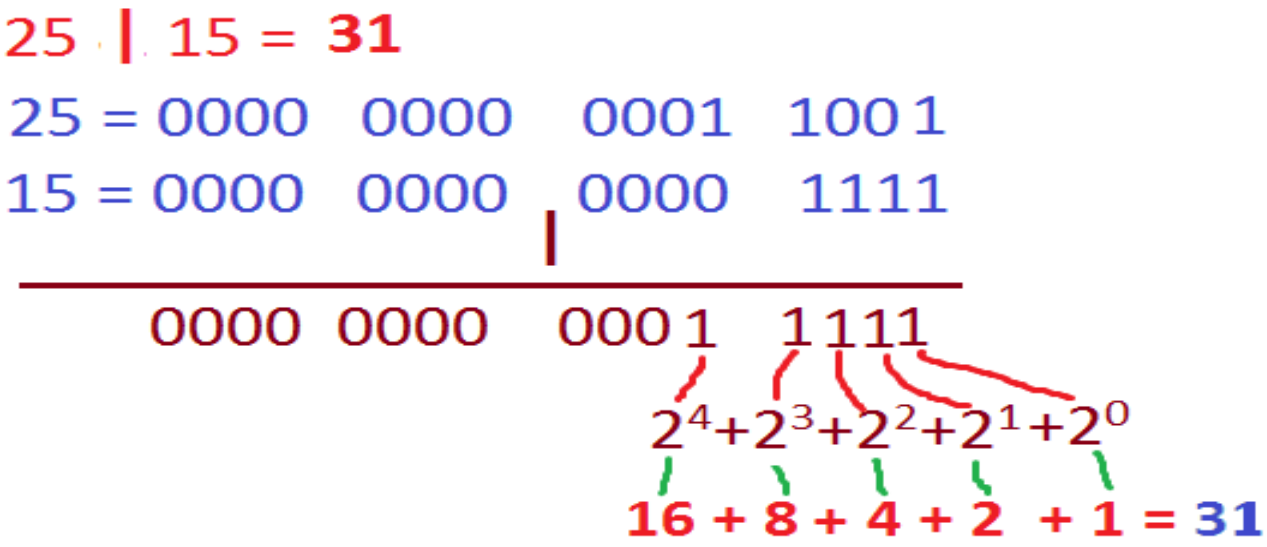
0000 0000 0000 1001

$2^3 + 2^0$

8 + 1 = **9**

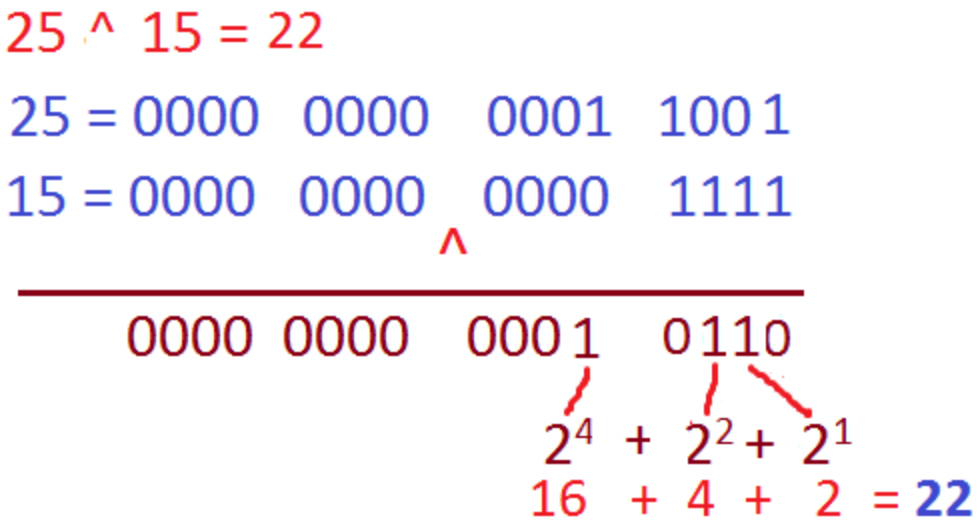
| - Bitwise or: In this both bits are 0's then result bit is 0. Otherwise result bit is 1.

Eg: 25 | 15 = 31



^ - XOR [Exclusive OR]: In this both bits are same then result bit is 0. Otherwise result bit is 1.

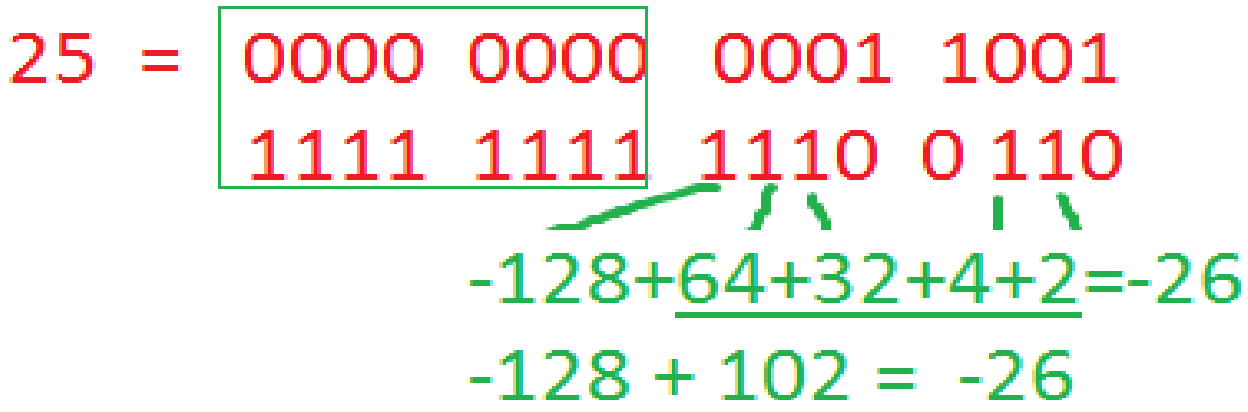
Eg: 25 ^ 15 = 22



~ - Compliment operator: In compliment operation the bits are complimented. i.e.

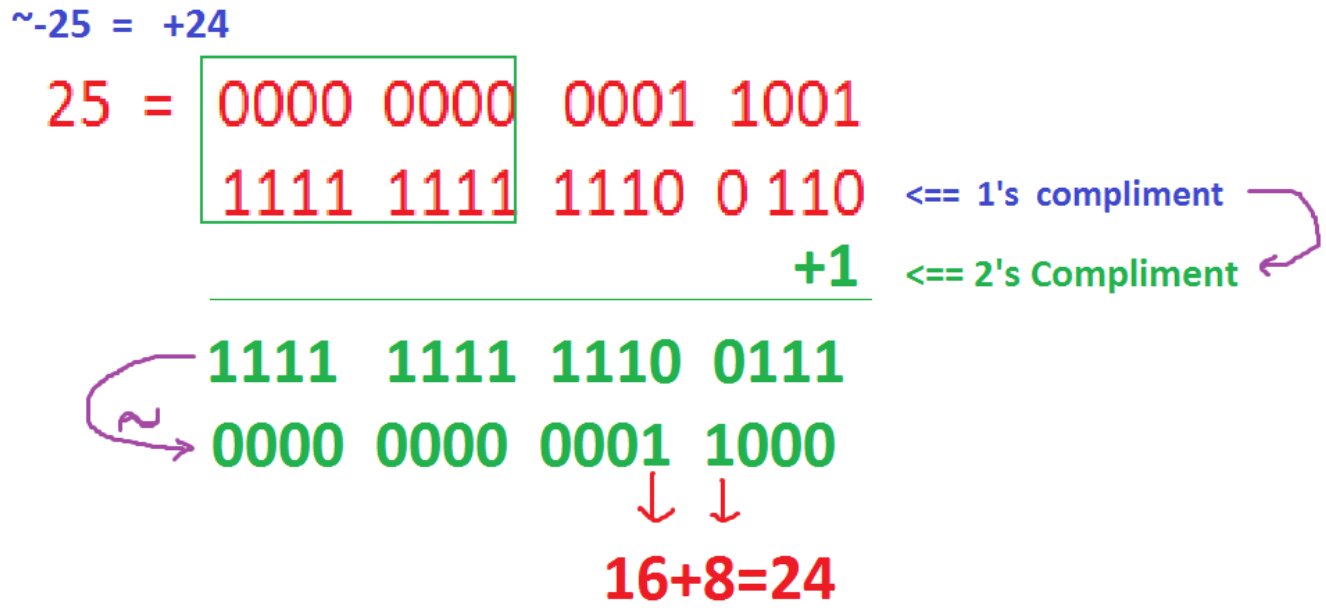
1’s become 0’s and 0’s become 1’s. Due to this +Ve no becomes –Ve and –Ve no becomes +Ve.

eg: **~25 ➔ -26**



Note: When starting bit is 1 given no is –Ve.

Eg: ~-25 ➔ +24

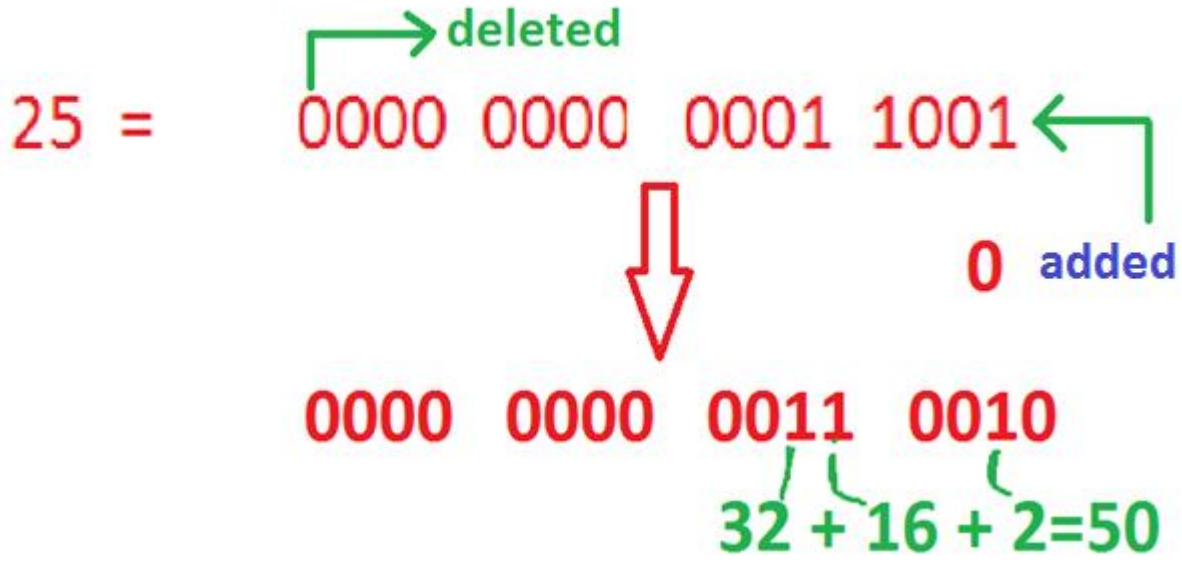


<< - left shift operator:

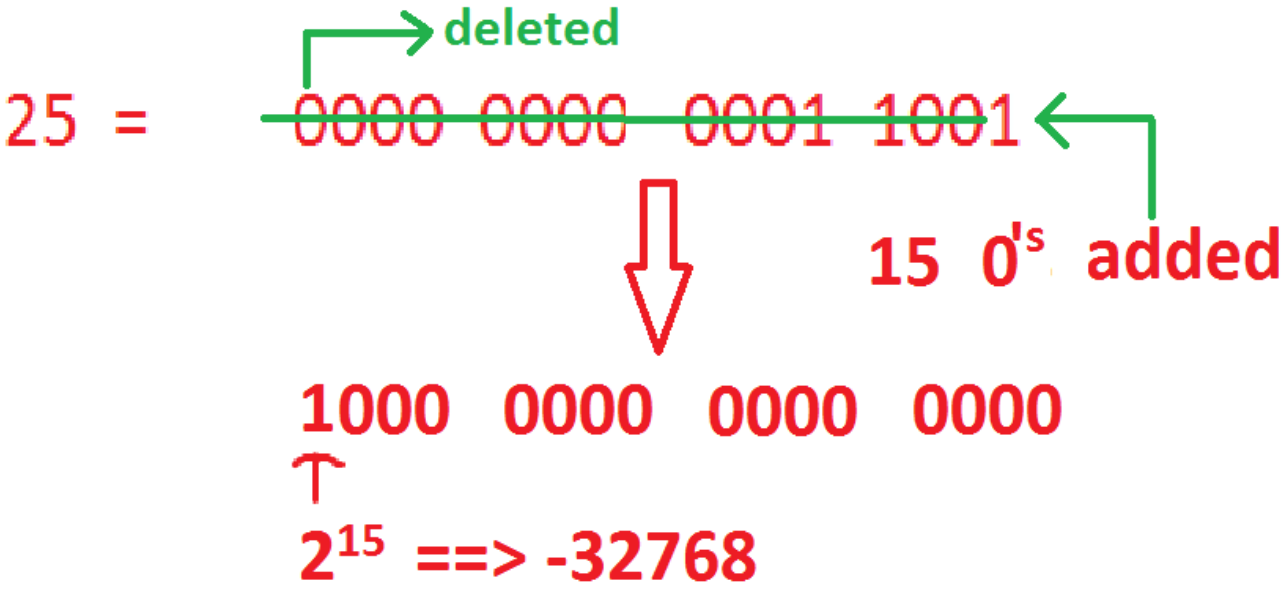
In left shift operation, the specified no of bits are deleted from left side and the same no of zeros added on right side. In left shift operation, most probably the value is multiplied with 2 that no of times.

Eg:25<<1=50, 25<<2=100, 25<<15 =-32768, 25<<16=0

eg: 25<<1=50


deleted
25 =
0000 0000 0001 1001
0 added
0000 0000 0011 0010
32 + 16 + 2=50

eg: 25<<15 = -32768



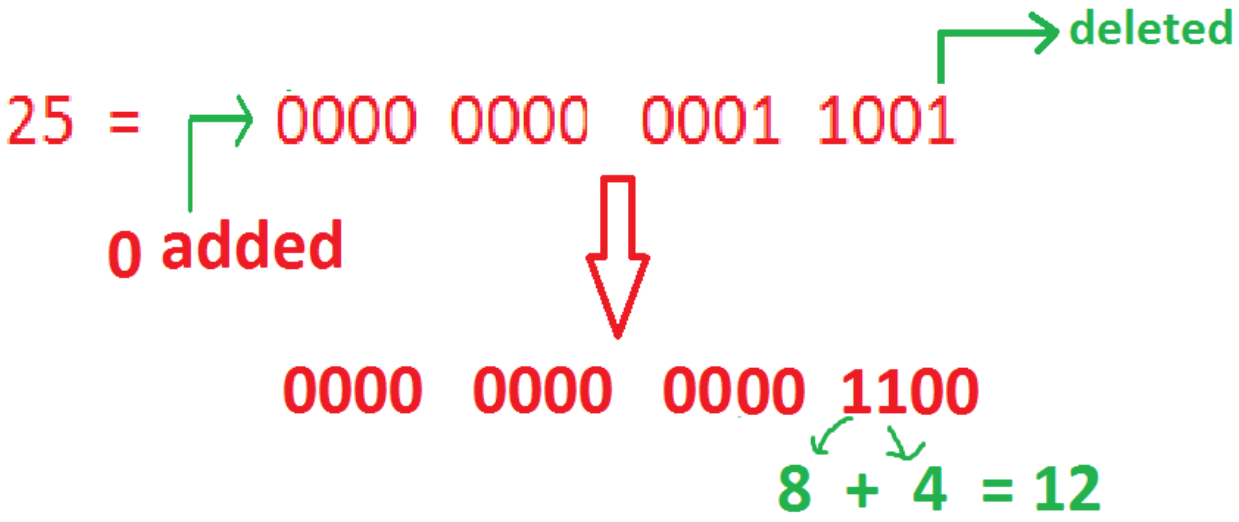
Note: When starting bit 1 no is negative.

>> - Right shift operator:

In right shift operation, the bits are moved to right side i.e. the specified no.of bits are deleted from right side and same no.of zero's are added left side. Due to this always the number is divided with 2 that no of times.

Eg:25>>1=12, 25>>2=6, 25>>3=3, 25>>4=1,25>>5=0

eg: 25 >>1 = 12



eg: 25 >> 5 = 0