

The image shows a screenshot of a Turbo C++ (TC) IDE. The top window displays a C program with the following code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 29 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
clrscr();
printf("%d\n", "a"=="a");
printf("%d\n", strcmp("a", "a")==0);
printf("%d\n", strcmp("a", "A")==0);
printf("%d\n", 2+3*4+5==19);
printf("%d\n", 2+3*4+5==45);
printf("%d\n", 2+3*4+5==25);
printf("%d\n", (2+3)*(4+5)==45);
getch();
}
```

The bottom window shows the output of the program, which consists of seven lines of numbers: 0, 1, 0, 1, 0, 0, 1. The IDE interface includes a menu bar, a toolbar, and a status bar at the bottom. A green banner across the middle of the IDE says "You are screen sharing" with a "Stop share" button. The system clock in the bottom right corner indicates 9:25 AM on 02-Jul-24.

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 21 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n",5-3+2==4);
printf("%d\n",5*3/2==7);
printf("%d\n",5/3%2==1);
printf("%d\n",-2 -1==3);
printf("%d\n",-2 -1== -3);
printf("%d\n",-2-1== -3);
printf("%d\n",'a'/'b'==0);
printf("%d\n",'0'!=0);
getch();
}
```

Zoom overlay: You are screen sharing, Stop share, Mute, Start Video, Participants (29), Chat, New share, Pause Share, Annotate, Remote control, Apps, More.

Windows taskbar: 9:34 AM 02-Jul-24

Below the IDE, a list of numbers is visible: 1, 1, 1, 0, 1, 1, 1, 1.

Logical operators:

1. && - logical and
2. || - logical or

3. ! – logical not

&&, || used to combine two or more expressions into a single expression.

! used for negation. i.e true become false and false become true.

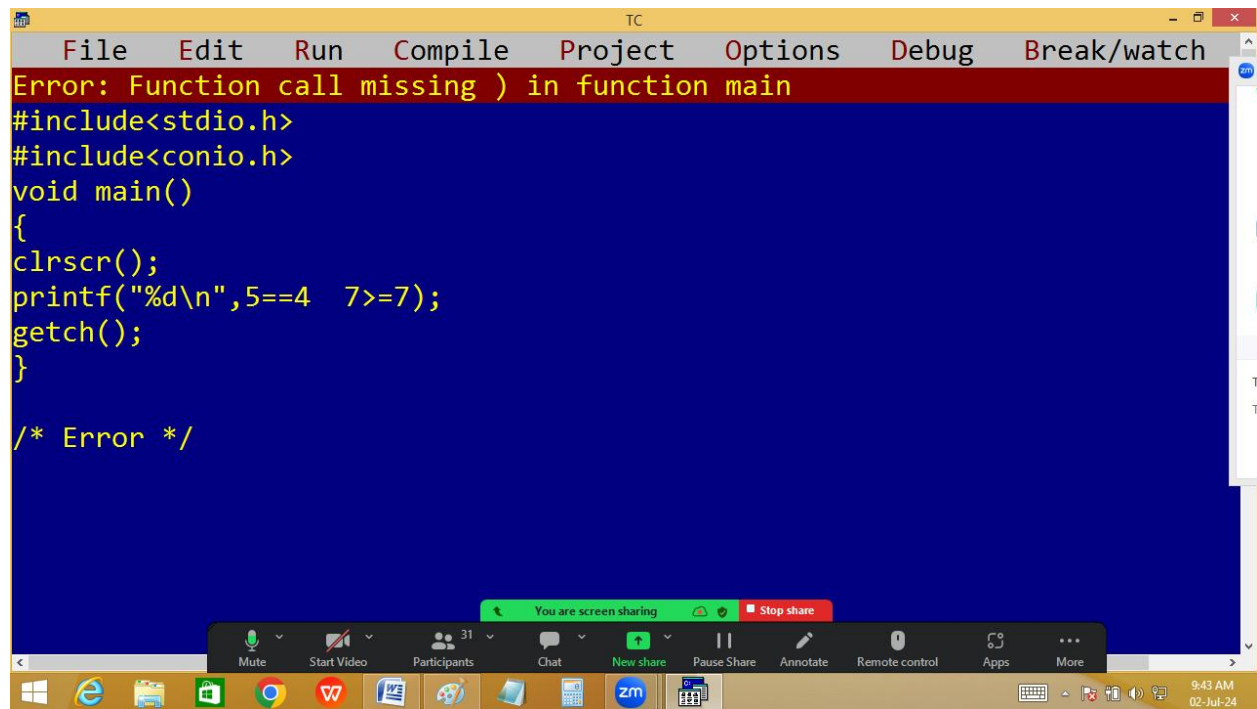
Note: In C & C++ 0 means false and other than 0 anything is true i.e. 1

Truth tables:

Operator	Expressions1	Expression2	Result
&&	1-true	1	1
	1	0	0
	0	1	0
	0	0	0
	1	1	1
	1	0	1
	0	1	1
	0	0	0

!true = false

!false = true



The image shows a screenshot of a Turbo C++ (TC) IDE window. The title bar reads "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", "Debug", and "Break/watch". A red error message banner at the top states: "Error: Function call missing) in function main". The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n",5==4  7>=7);
getch();
}

/* Error */
```

At the bottom of the screen, there is a Windows taskbar with various application icons. Overlaid on the taskbar is a Zoom screen sharing toolbar with a green status bar that says "You are screen sharing" and a red "Stop share" button. The toolbar also includes icons for Mute, Start Video, Participants (31), Chat, New share, Pause Share, Annotate, Remote control, Apps, and More. The system clock in the bottom right corner shows "9:43 AM 02-Jul-24".

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays a C program with the following code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 19 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n",5==4 , 7>=7);
printf("%d, %d\n",5==4, 7>=7);
printf("%d\n",5==4 || 7>=7);
printf("%d\n",5==5 && 7>7);
printf("%d\n",5==5 && 7 != -7);
printf("%d\n",5!=5 || 7 != 7);
printf("%d\n",!(5!=5)) ;
printf("%d\n",!(5==5)) ;
getch();
}
```

The bottom window shows the output of the program, which consists of the following lines:

```
0
0, 1
1
0
1
0
1
0
```

The IDE interface includes a menu bar at the top with options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. A status bar at the bottom of each window shows the time as 9:49 AM on 02-Jul-24. A green notification bar in the center of the IDE says "You are screen sharing" with a "Stop share" button.

$$\begin{array}{r} 5==5 \ \&\& \ 7!=9 \\ \hline | \ \&\& \ | \\ \hline | \end{array}$$

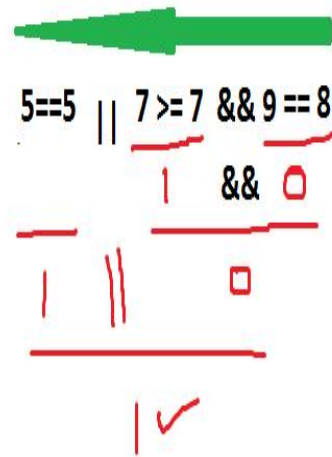
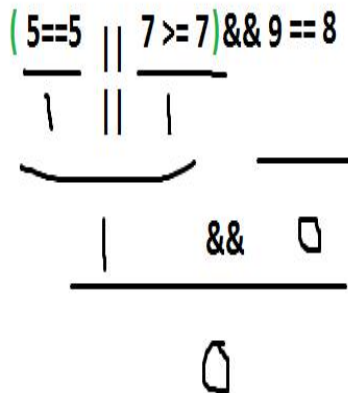
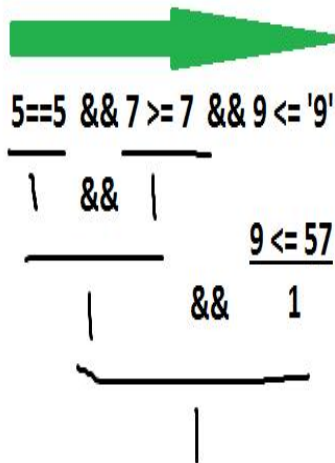
$$\begin{array}{r} 4!=4 \ || \ 7<5 \\ \hline 0 \ || \ 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} !(1>=1) \\ \hline | \\ \hline !1 \\ \hline 0 \end{array}$$

A curved arrow points from the top of the third expression to the top of the second expression.

```
TC
Line 13 Col 24 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n",5==5 && 7>=7 && 9<='9');
printf("%d\n",5==5 || 7>=7 && 9==8);
printf("%d\n",(5==5 || 7>=7) && 9==8);
printf("%d\n",5 > 3 > 1);
printf("%d\n", 5 && -5 );
printf("%d\n", 5 && 5.5);
printf("%d\n", 0 || 6);
printf("%d\n", !5 && !1);
getch();
}
/* && got more priority than || operator */

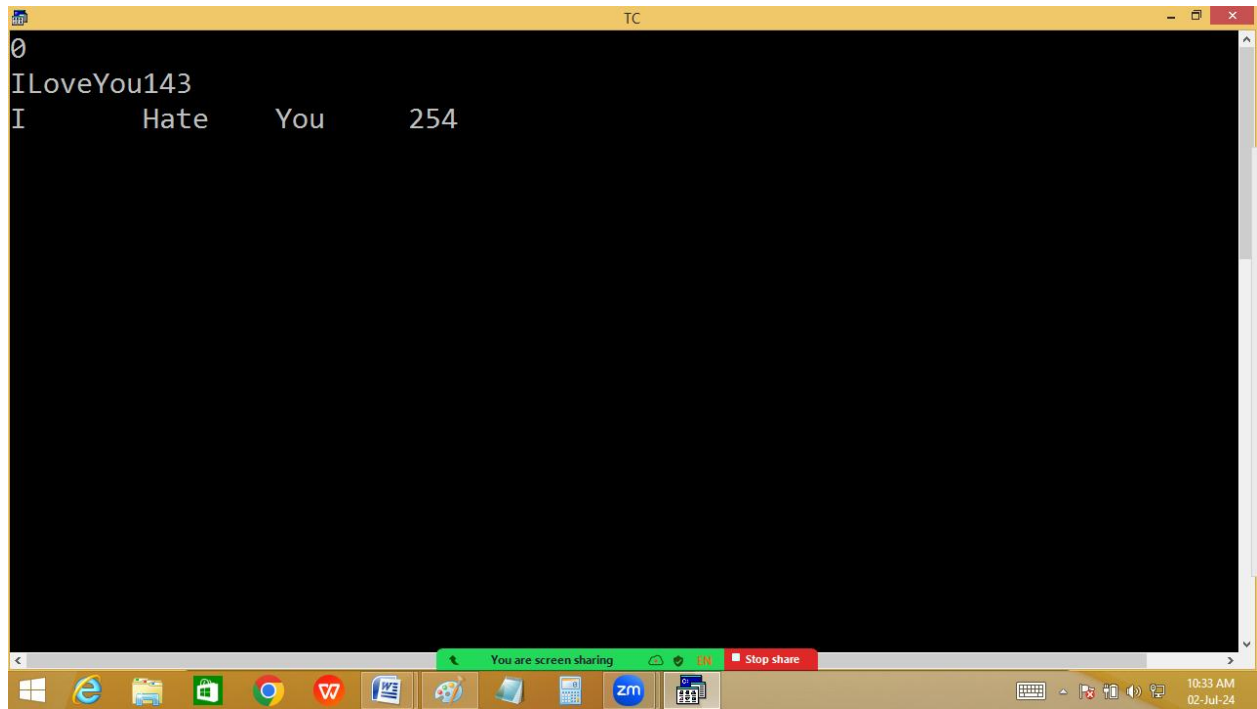
1
1
0
0
1
1
1
0
```



```

#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("%d\n", !5 >= !0 || !7 == !3 && !5 );
a = printf("I");
b = printf("Love");
c = printf("You");
printf("%d%d%d\n",a,b,c);
a = printf("I\t");
b = printf("Hate\t");
c = printf("You\t");
printf("%d%d%d",a,b,c);
getch();
}

```

The image shows a screenshot of a Turbo C++ (TC) IDE window. The top menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 10 Col 35 Insert Indent Tab Fill Unindent * E:9AM.C'. The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int  a=9,b,c;
    clrscr();
    a = a + !a;
    b = !!a;
    c = !!!b;
    printf("a=%d, b=%d, c=%d", a,b,c);
    getch();
}
```

Below the code editor, a Windows taskbar is visible with icons for various applications. A green status bar above the taskbar reads 'You are screen sharing' and 'EN'. A red button labeled 'Stop share' is also present.

The bottom window is a black console window titled 'TC'. It displays the output of the program: 'a=9, b=1, c=0_'. Below the console window, another Windows taskbar is visible, and a green status bar reads 'You are screen sharing' and 'EN'. A red button labeled 'Stop share' is also present. A toolbar with icons for Mute, Start Video, Participants (26), Chat, New share, Pause Share, Annotate, Remote control, Apps, and More is located above the bottom taskbar.

a=9

a = a + !9

a = 9 + 0 = 9

b = !!a ==> !a ==> !9 ==> 0 ==> !0 ==> 1

c = !!!b==>!1==>0 ==>!0==>1 ==> !1==> 0

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays a C program with the following code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 31 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
a = printf("I Love You") == printf("I Hate You");
b = a + printf("\nThank You\n");
c = a + b + printf("Good Bye\n");
printf("a=%d, b=%d, c=%d", a,b,c);
getch();
}
```

The bottom window shows the output of the program:

```
I Love YouI Hate You
Thank You
Good Bye
a=1, b=12, c=22
```

The Windows taskbar at the bottom includes icons for various applications and shows the system clock as 10:45 AM on 02-Jul-24. A green status bar above the taskbar indicates "You are screen sharing" with a "Stop share" button.

