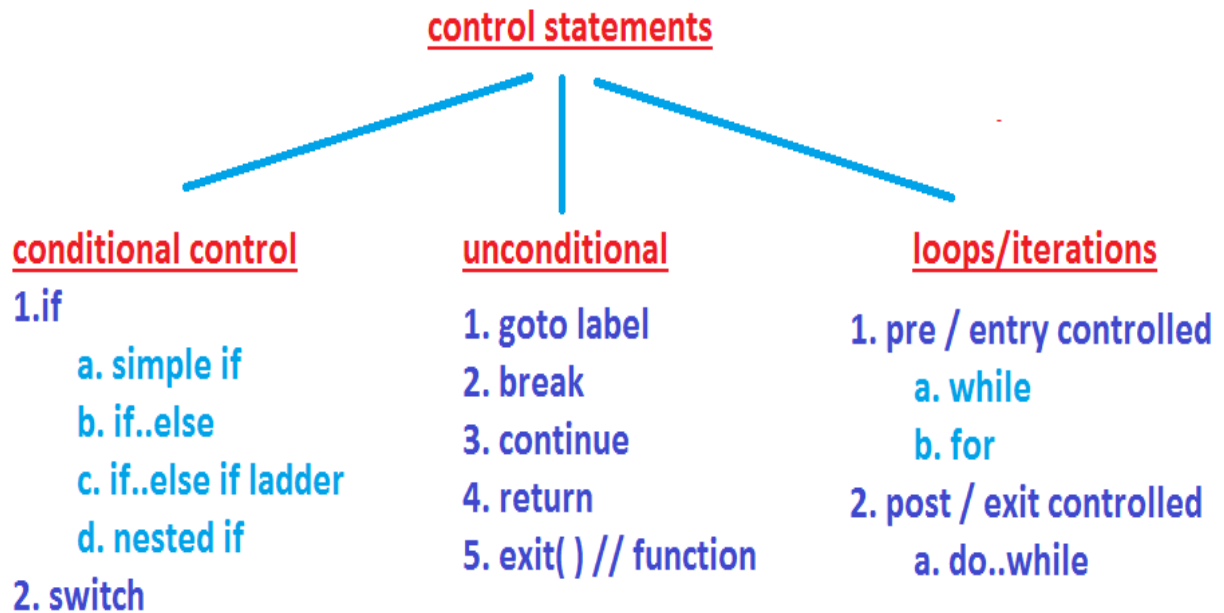


## CONTROL STATEMENTS / CONTROL STRUCTURES

They are used to control program execution order [ flow ]. In c language we are using the following control statements.



**if condition control statement:** it is used to check the given condition / expression is true or false.

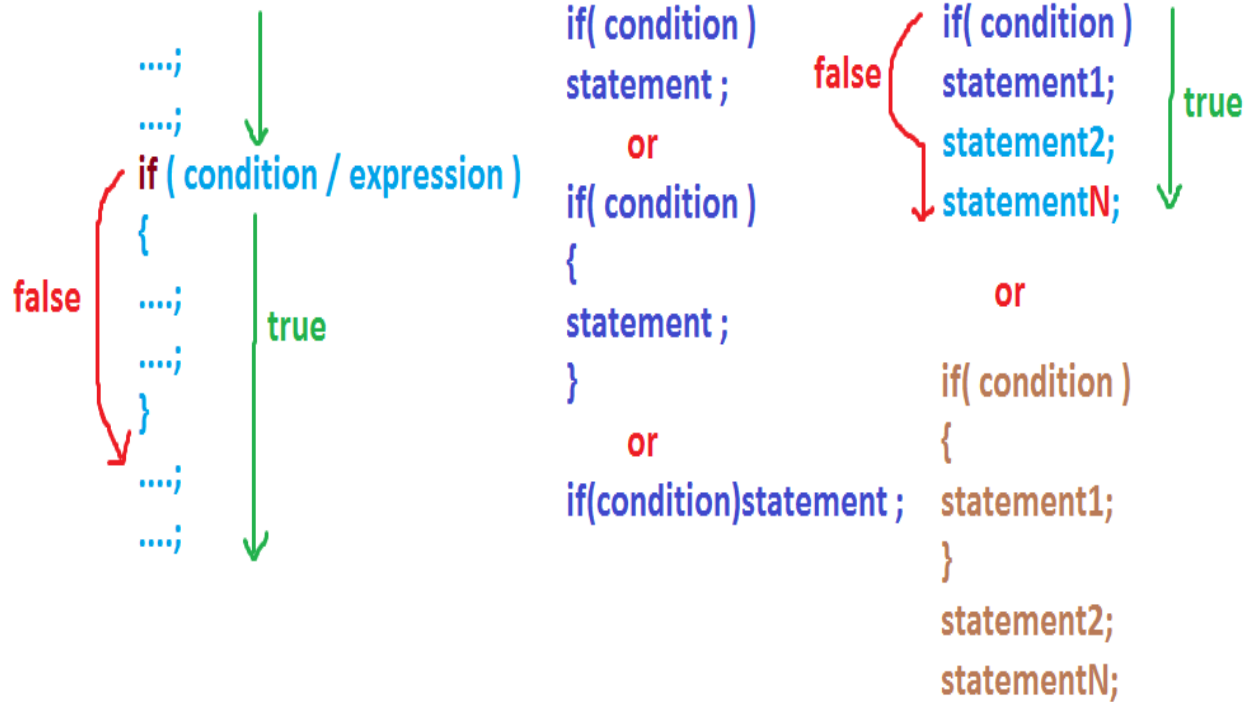
It is a decision making statement.

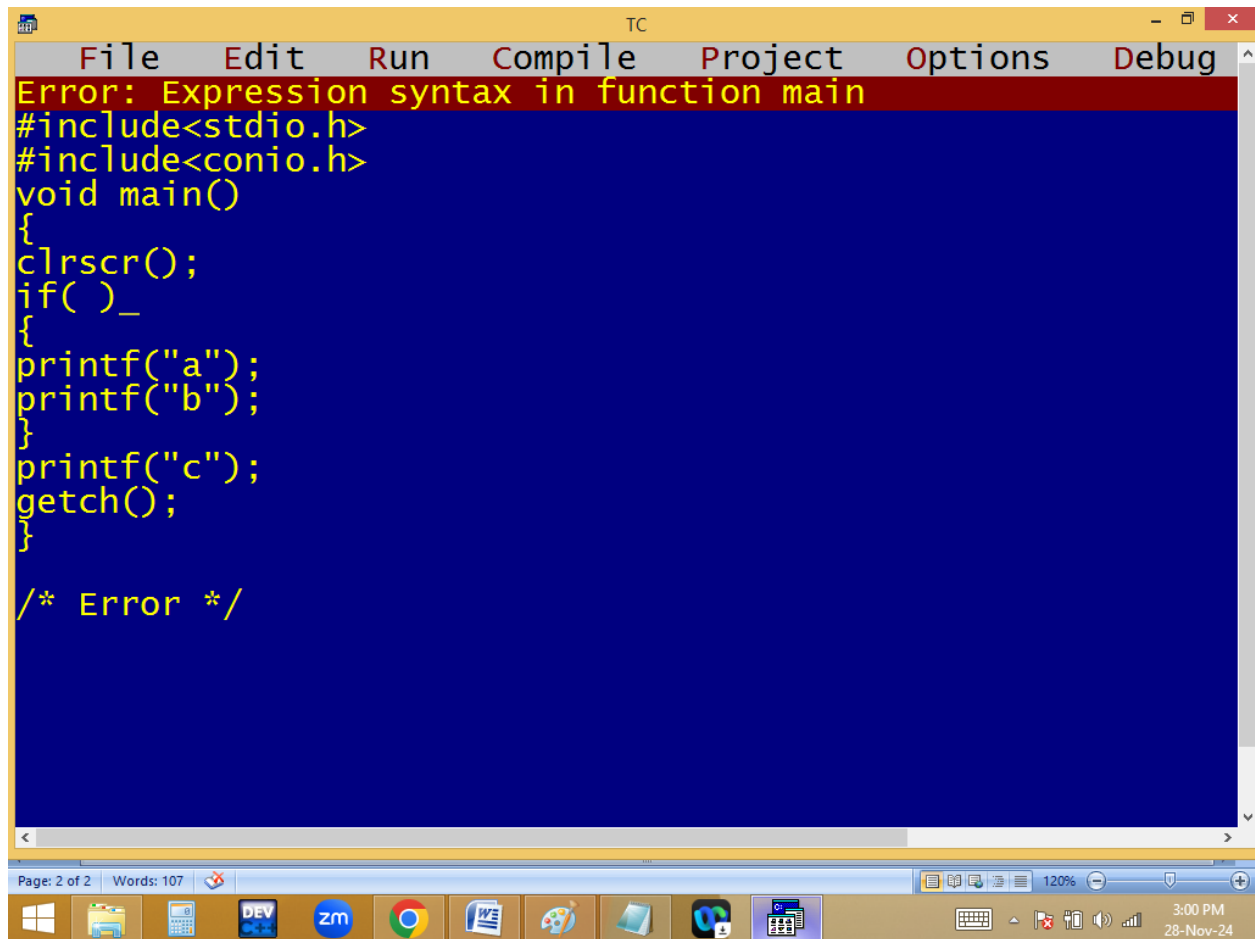
**Note:** In c compiler 0 means false and other than 0 anything is 1 i.e. true.

**Simple if:** When the program is having only one condition then go for simple if.

If condition true statements in if block { } are executed and later outer statements also executed.

If condition false only the outside statements are executed.



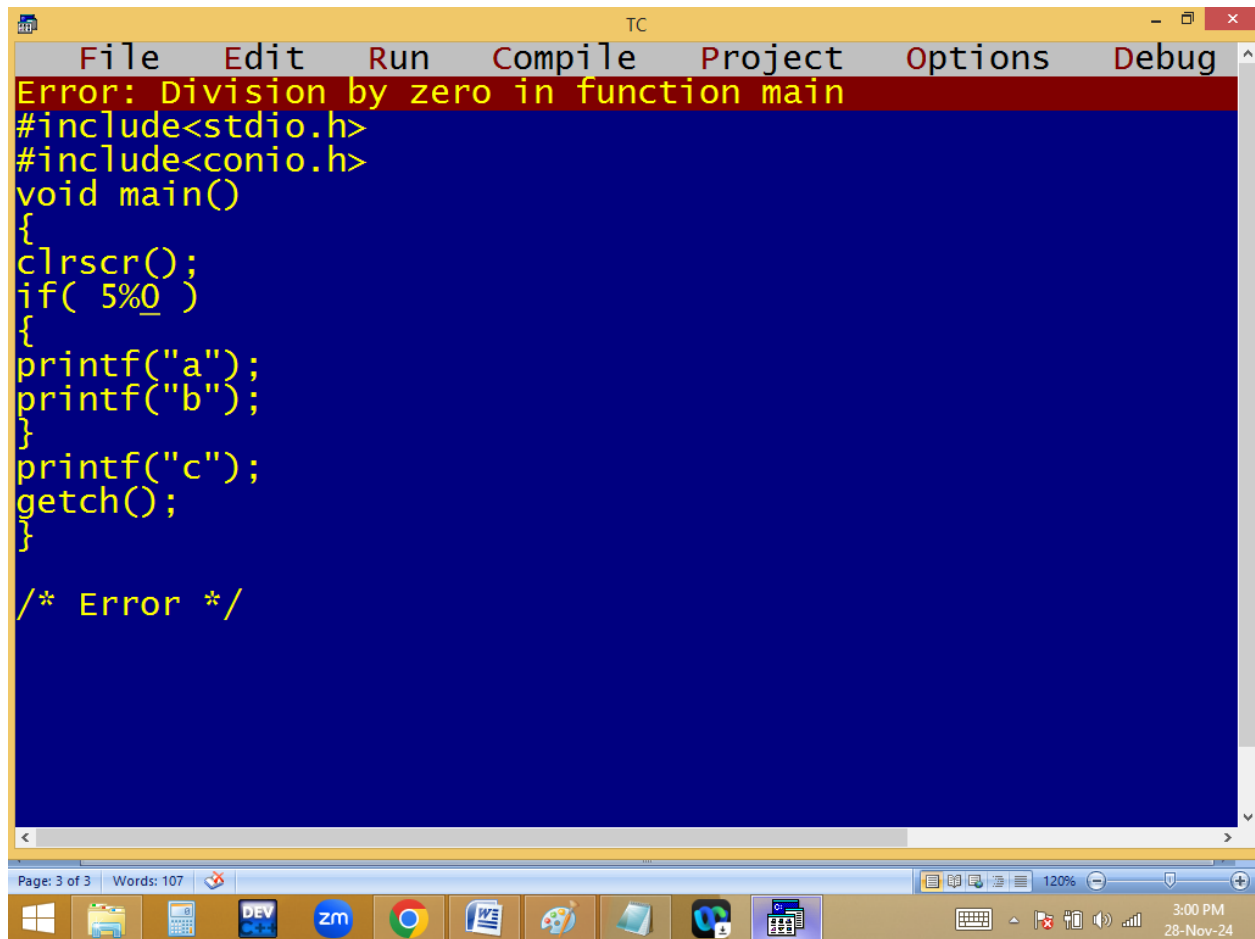


The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". A red error message banner at the top reads "Error: Expression syntax in function main". The code editor has a dark blue background with yellow text. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( )_
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* Error */
```

At the bottom of the IDE, a status bar shows "Page: 2 of 2" and "Words: 107". Below the IDE window is the Windows taskbar, which includes icons for the Start button, File Explorer, Calculator, DEV C++, Zoom, Google Chrome, Word, Paint, and other applications. The system tray on the right shows the time as 3:00 PM and the date as 28-Nov-24.

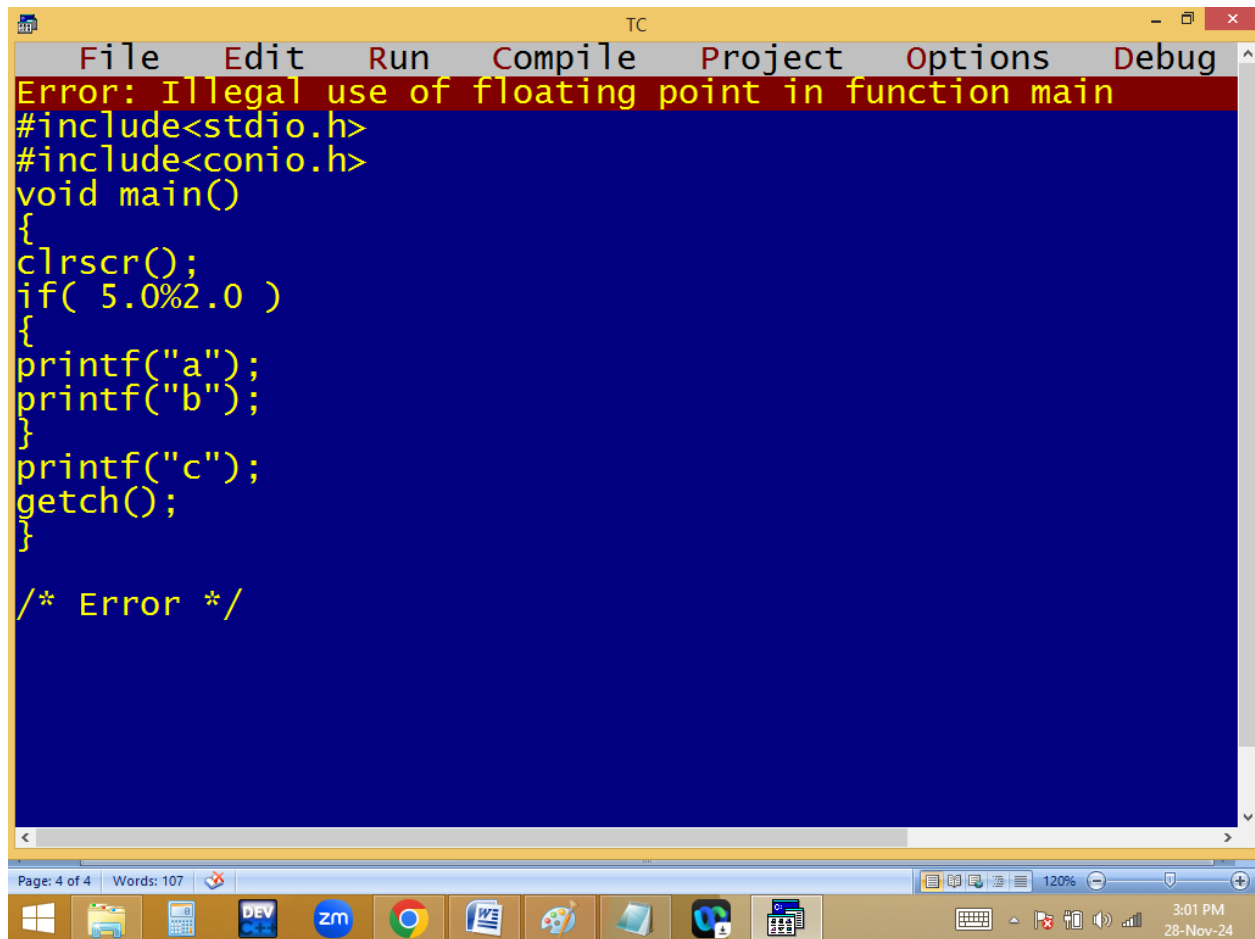


The image shows a screenshot of the Turbo C++ (TC) IDE. The title bar at the top reads "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". A red error message banner at the top of the code editor states "Error: Division by zero in function main". The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 5%0 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* Error */
```

The status bar at the bottom of the window shows "Page: 3 of 3" and "Words: 107". The Windows taskbar at the very bottom displays various application icons, including File Explorer, Calculator, DEV C++, Zoom, Google Chrome, Word, Paint, and the Start button. The system clock in the bottom right corner indicates the time is 3:00 PM on 28-Nov-24.

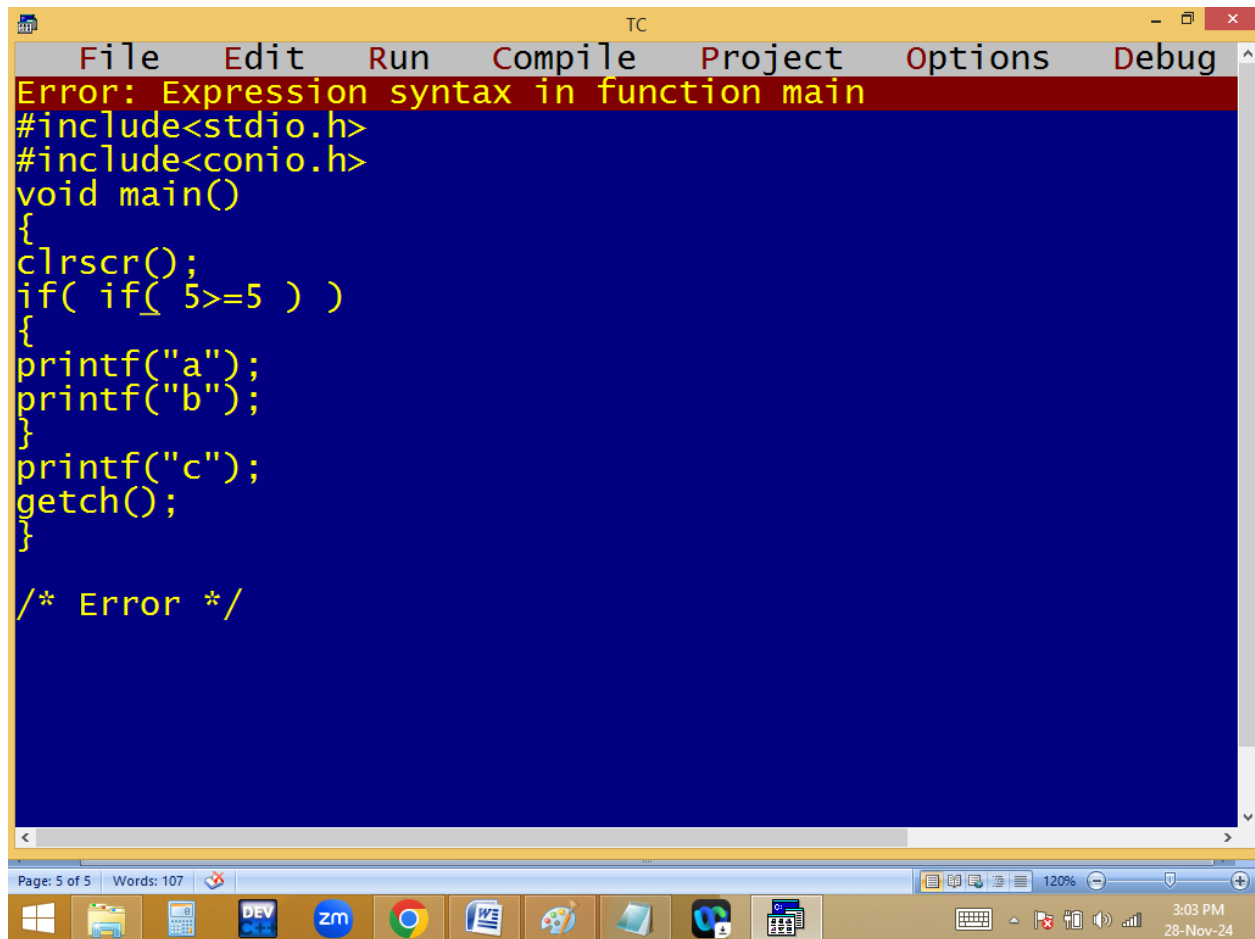


The image shows a screenshot of the Turbo C++ (TC) IDE. The title bar at the top reads "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". A red error message banner at the top of the editor window states: "Error: Illegal use of floating point in function main". The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 5.0%2.0 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* Error */
```

The status bar at the bottom of the window shows "Page: 4 of 4" and "Words: 107". The Windows taskbar at the very bottom displays various application icons, including the Start button, File Explorer, Calculator, DEV C++, Zoom, Google Chrome, Word, Paint, and others. The system clock in the bottom right corner indicates the time is 3:01 PM on 28-Nov-24.

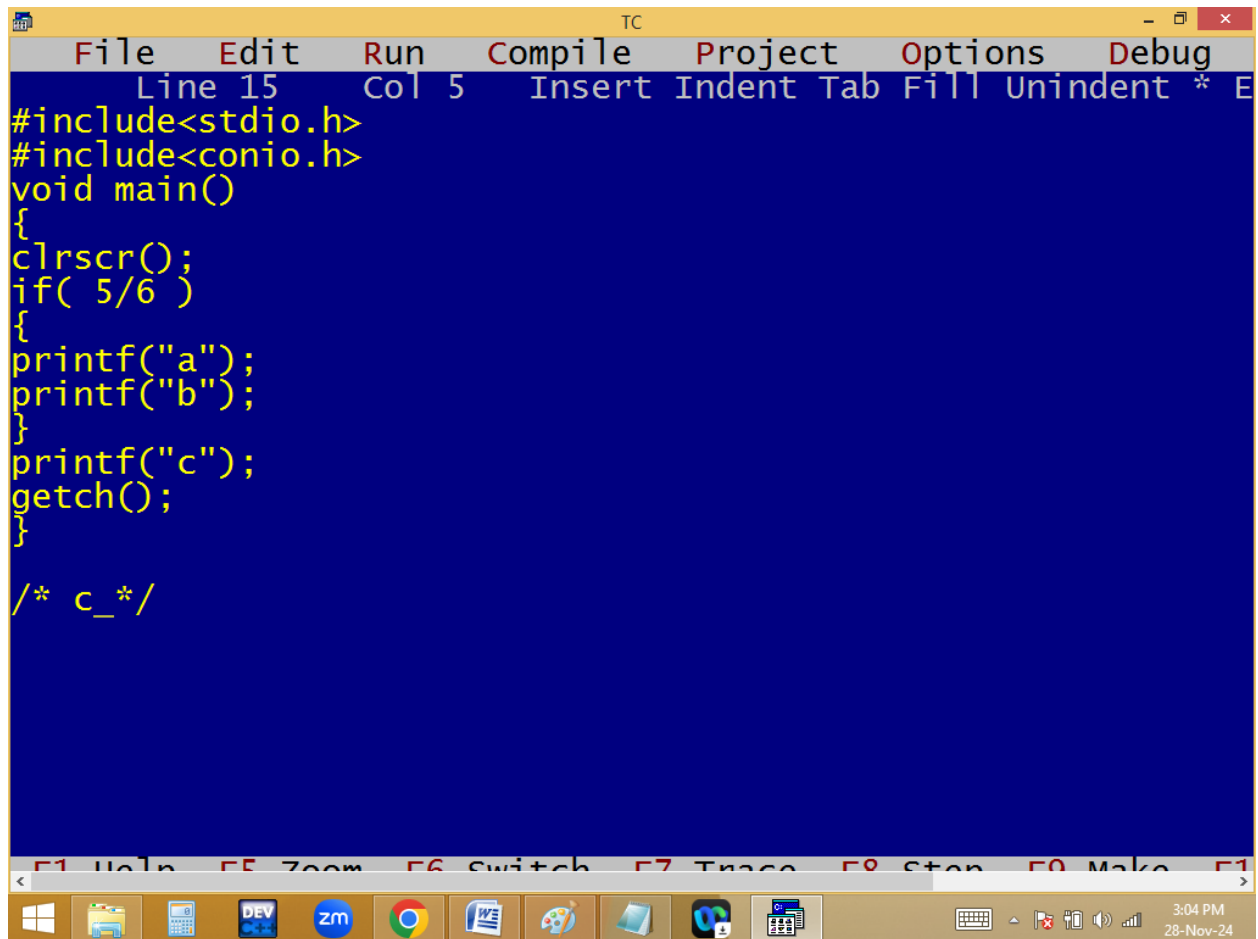


The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". A red error message banner at the top reads "Error: Expression syntax in function main". The code editor has a dark blue background with yellow text. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( if( 5>=5 ) )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

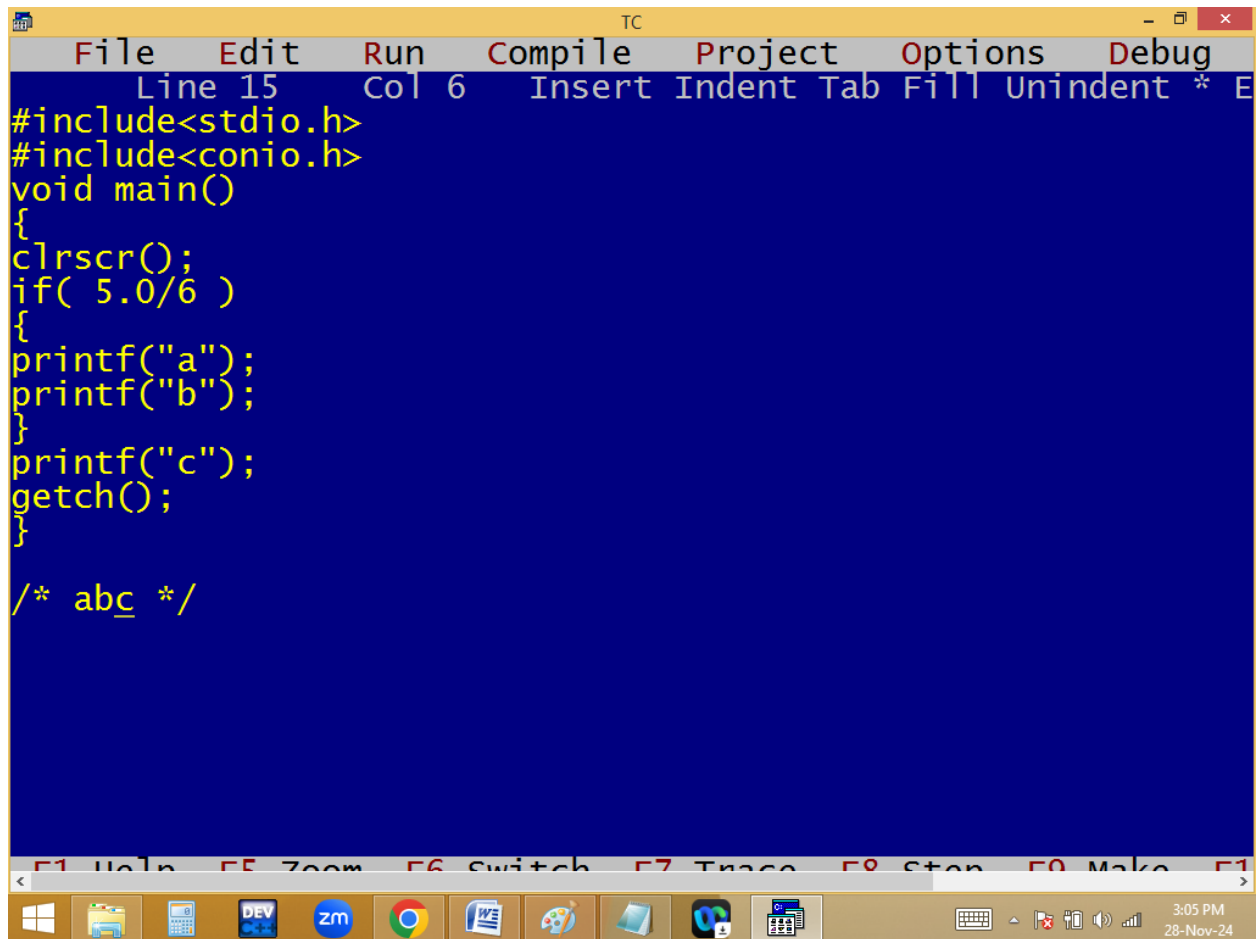
/* Error */
```

The status bar at the bottom indicates "Page: 5 of 5" and "Words: 107". The Windows taskbar is visible at the bottom with various application icons and a system clock showing 3:03 PM on 28-Nov-24.



```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 5 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 5/6 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* c_*/
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```

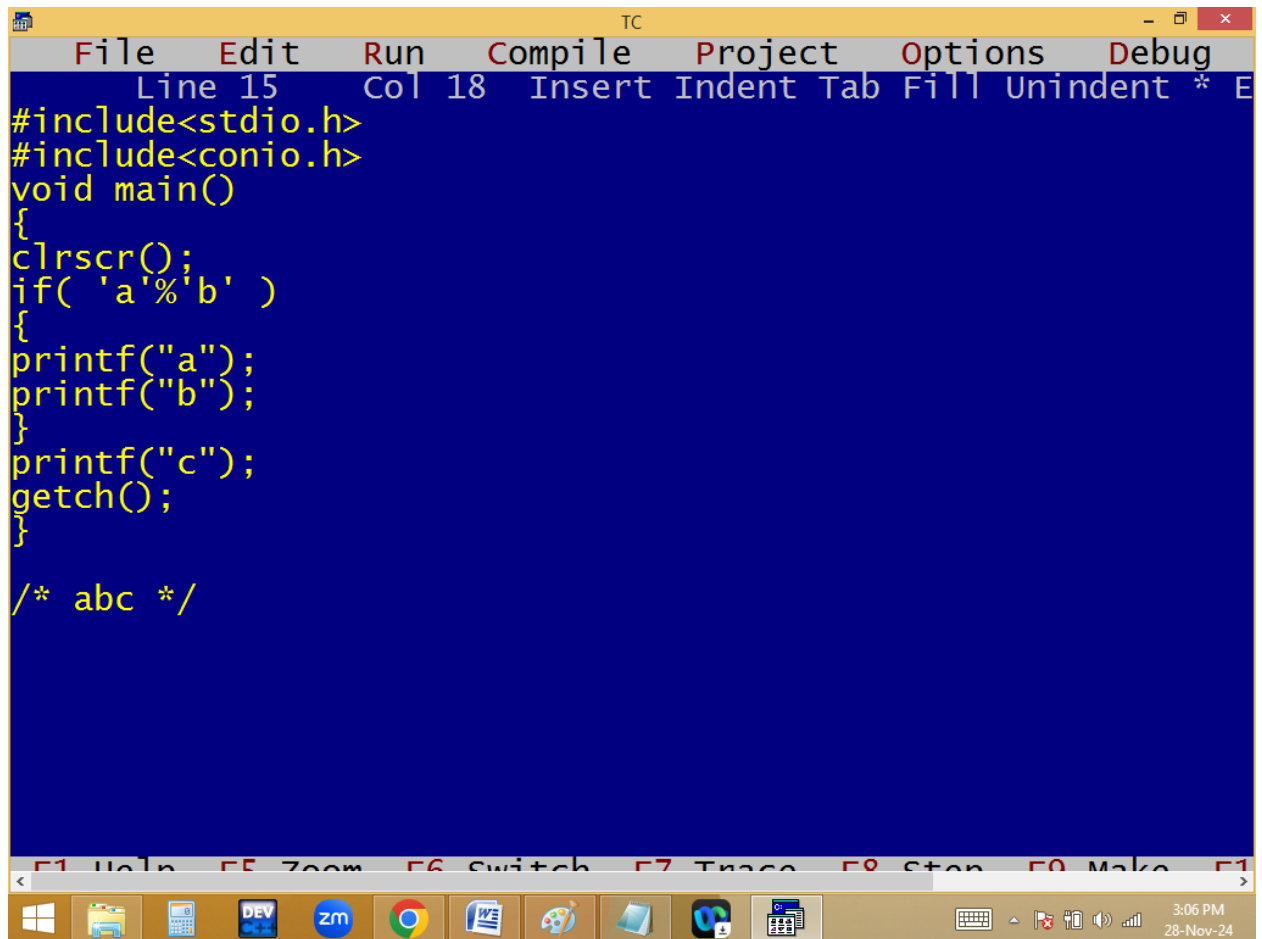


```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 6 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 5.0/6 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```

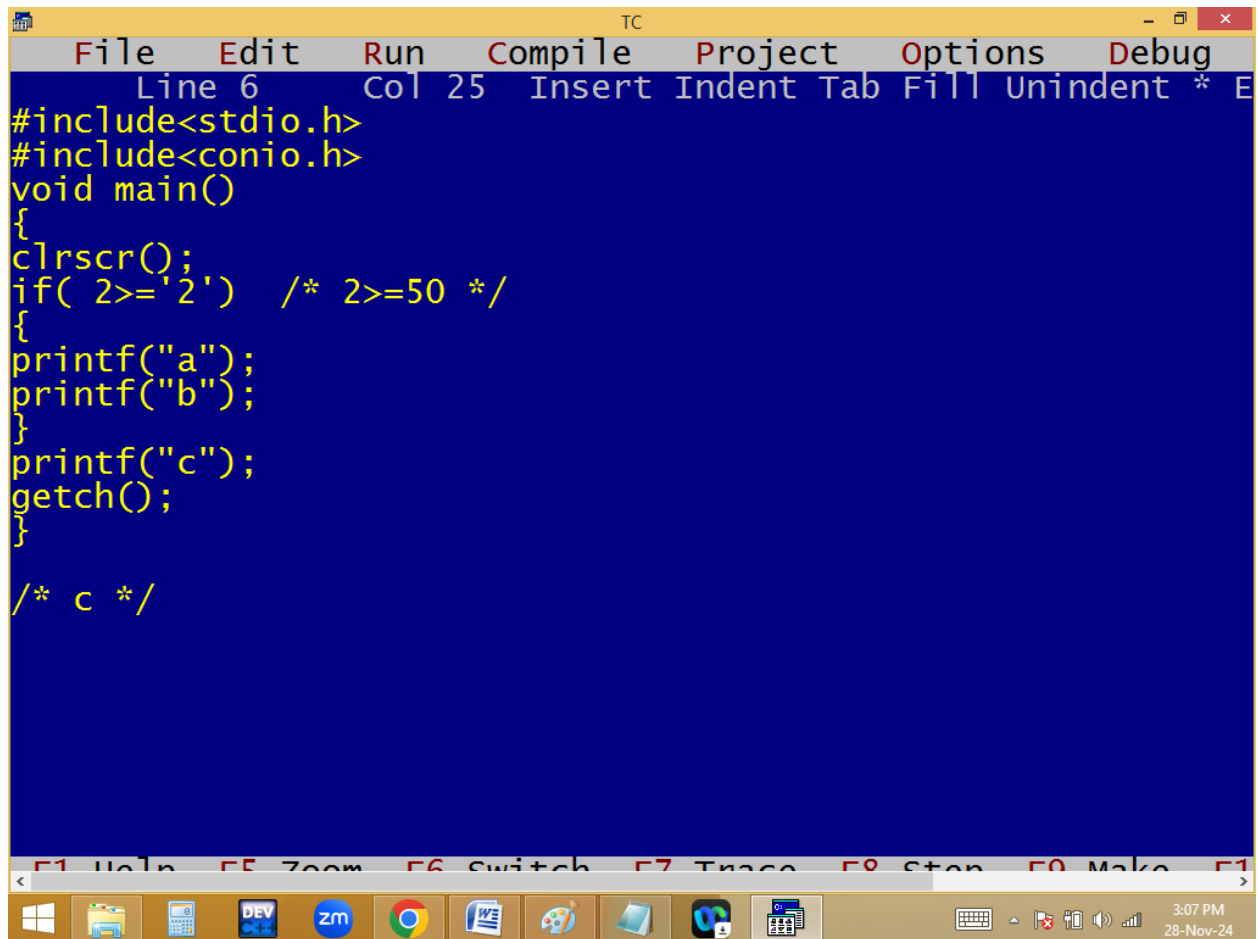




```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 18 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 'a'%'b' )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */

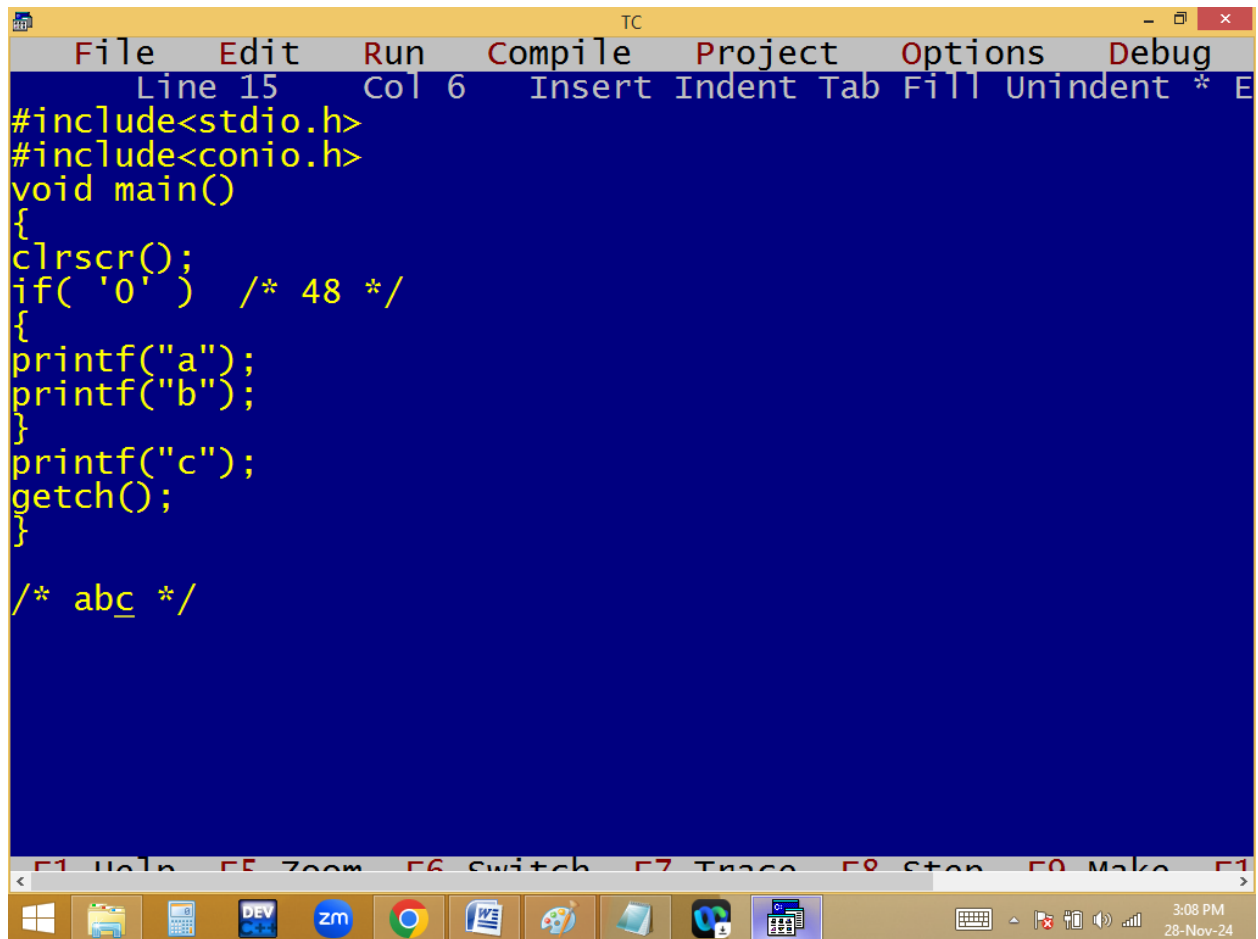
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



```
TC
File Edit Run Compile Project Options Debug
Line 6 Col 25 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( 2>='2') /* 2>=50 */
{
printf("a");
printf("b");
}
printf("c");
getch();
}

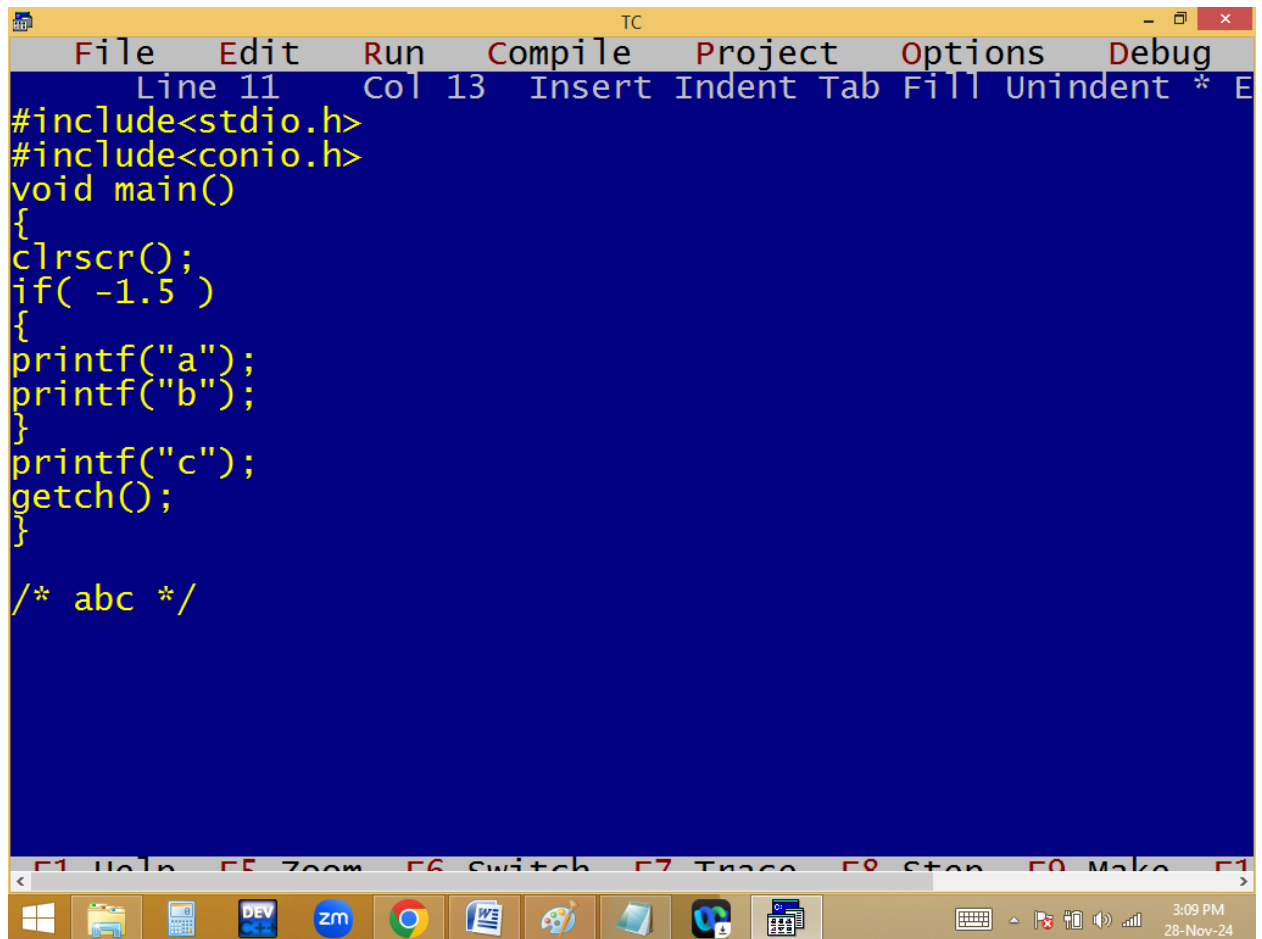
/* c */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



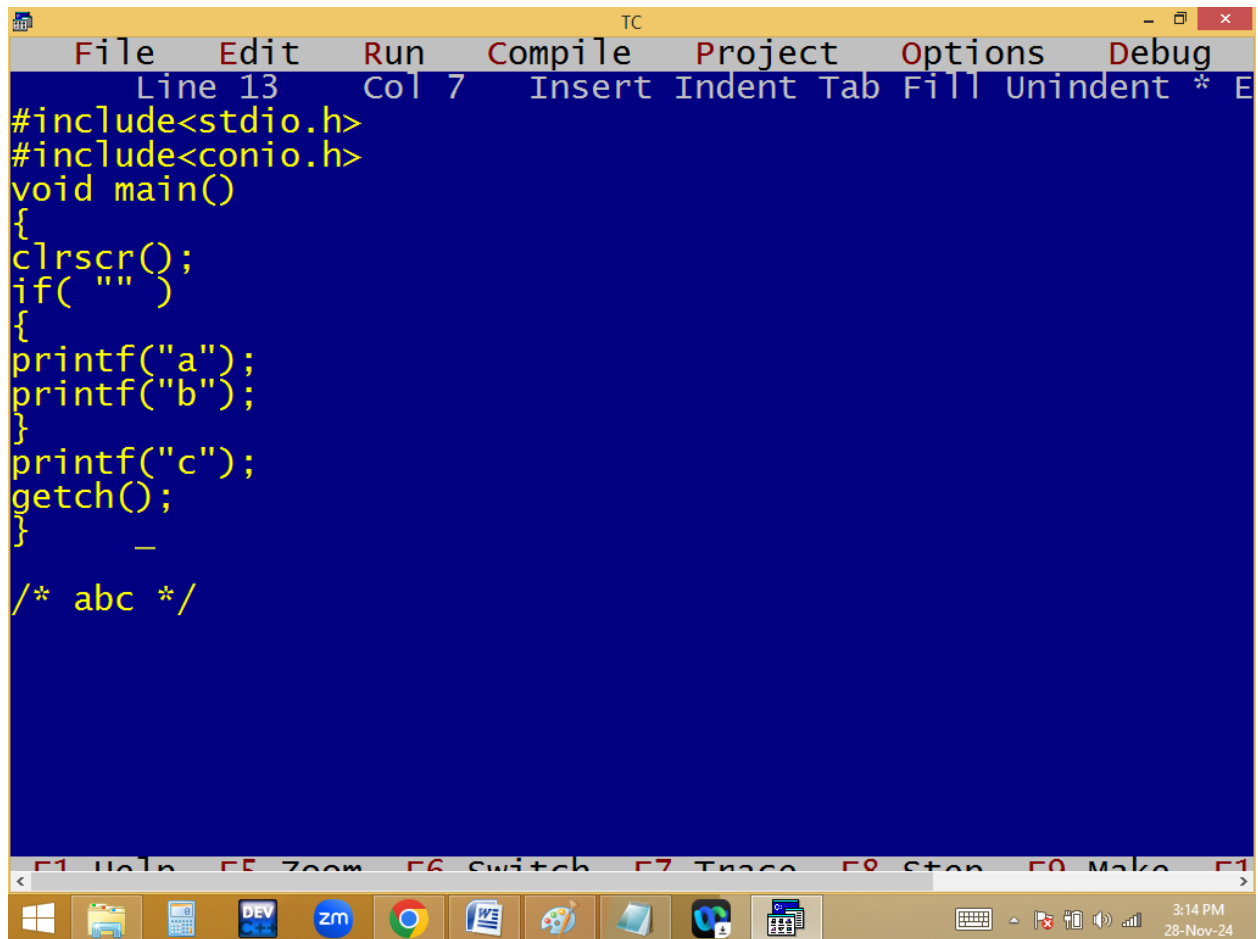
```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 6 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( '0' ) /* 48 */
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



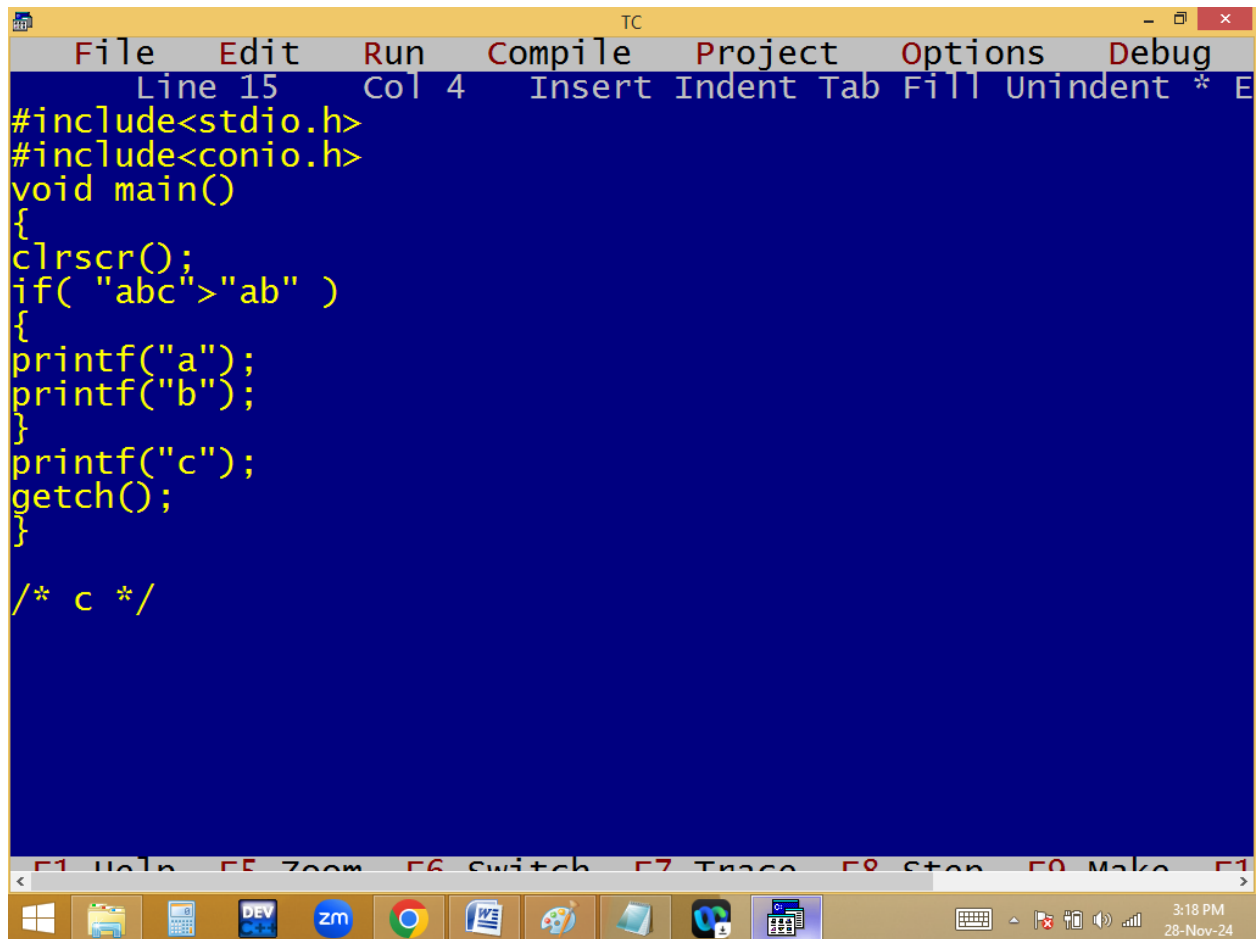
```
TC
File Edit Run Compile Project Options Debug
Line 11 Col 13 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( -1.5 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



```
TC
File Edit Run Compile Project Options Debug
Line 13 Col 7 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( "" )
{
printf("a");
printf("b");
}
printf("c");
getch();
}
/* abc */

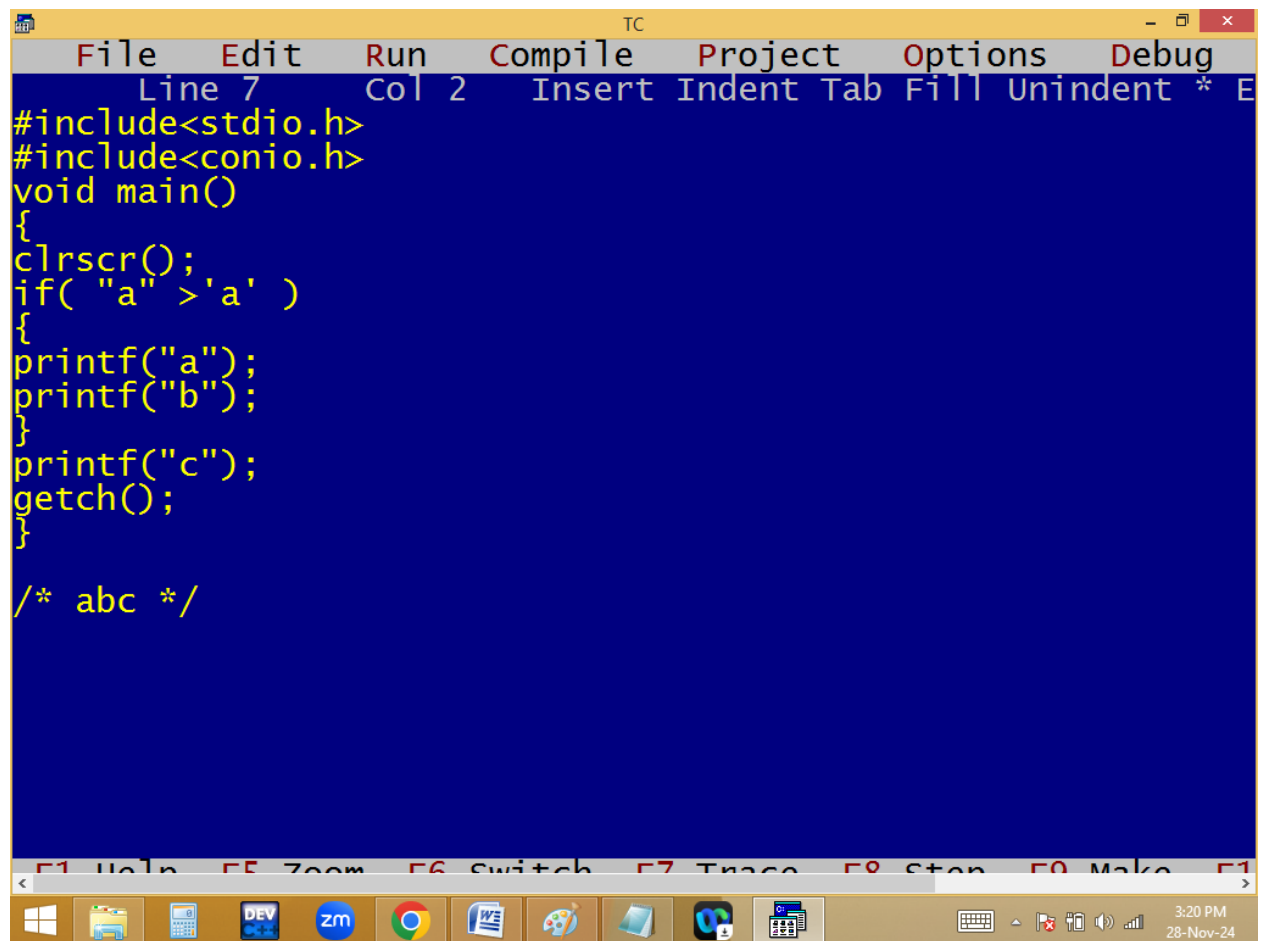
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 4 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( "abc">"ab" )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* c */

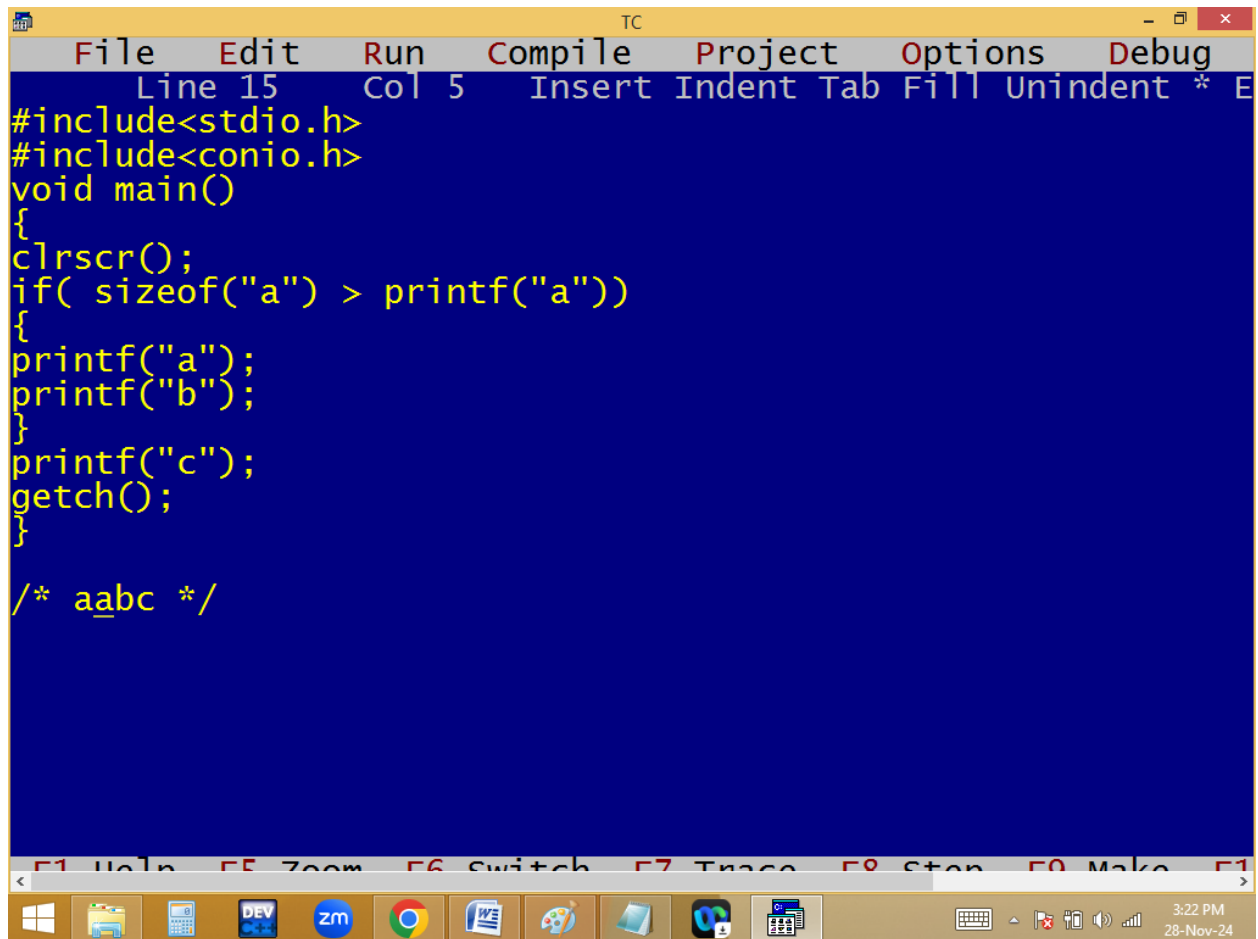
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



```
TC
File Edit Run Compile Project Options Debug
Line 7 Col 2 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( "a" > 'a' )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```

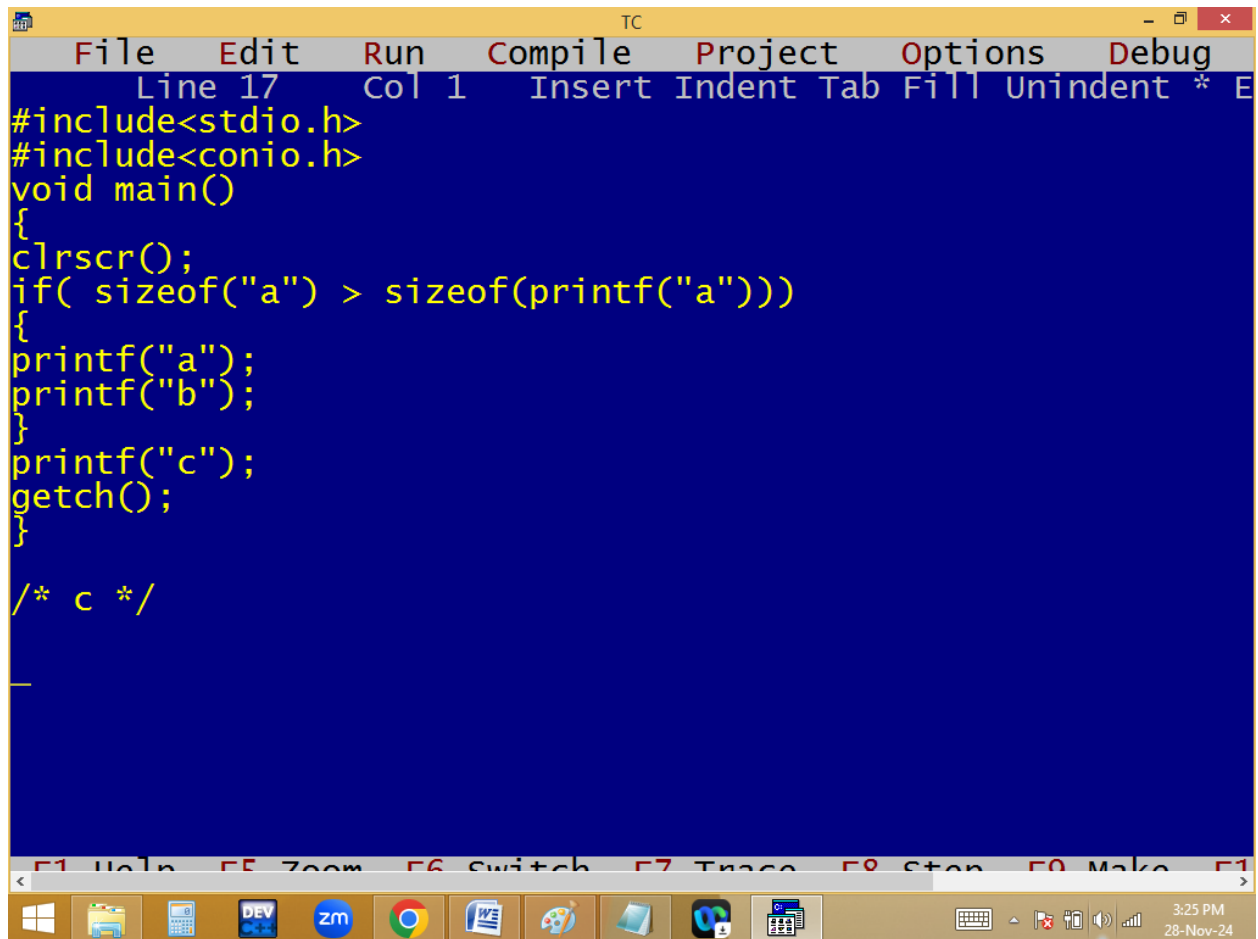


```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 5 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( sizeof("a") > printf("a"))
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* aabc */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```





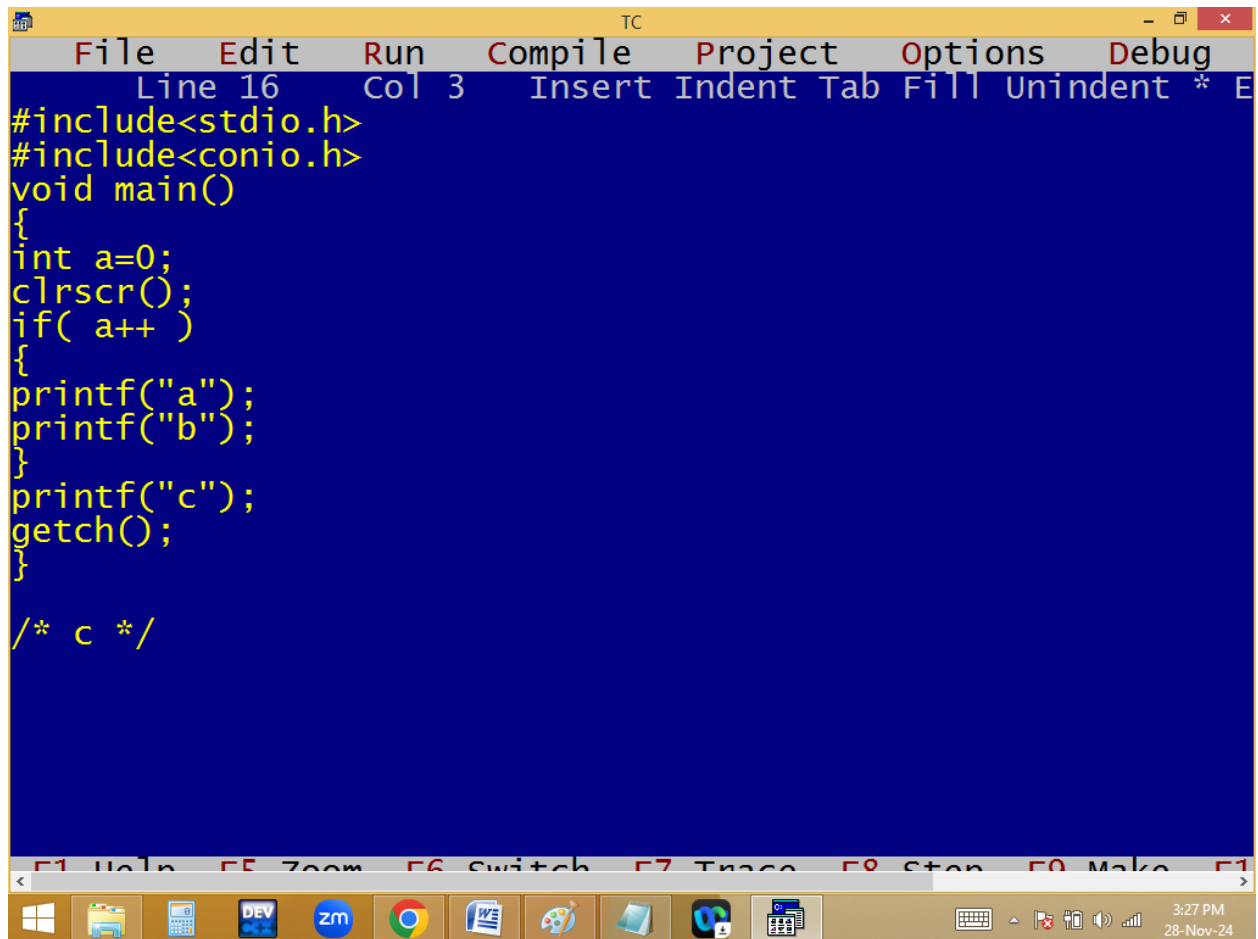
```
TC
File Edit Run Compile Project Options Debug
Line 17 Col 1 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if( sizeof("a") > sizeof(sprintf("a")))
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* c */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F11
```

Windows taskbar icons: File Explorer, Calculator, DEV C++, ZOOM, Google Chrome, Microsoft Word, Paint, File Explorer, Visual Studio Code, Calculator.

System clock: 3:25 PM, 28-Nov-24



The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". The status bar at the top indicates "Line 16", "Col 3", and "Insert Indent Tab Fill Unindent \* E". The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0;
clrscr();
if( a++ )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* c */
```

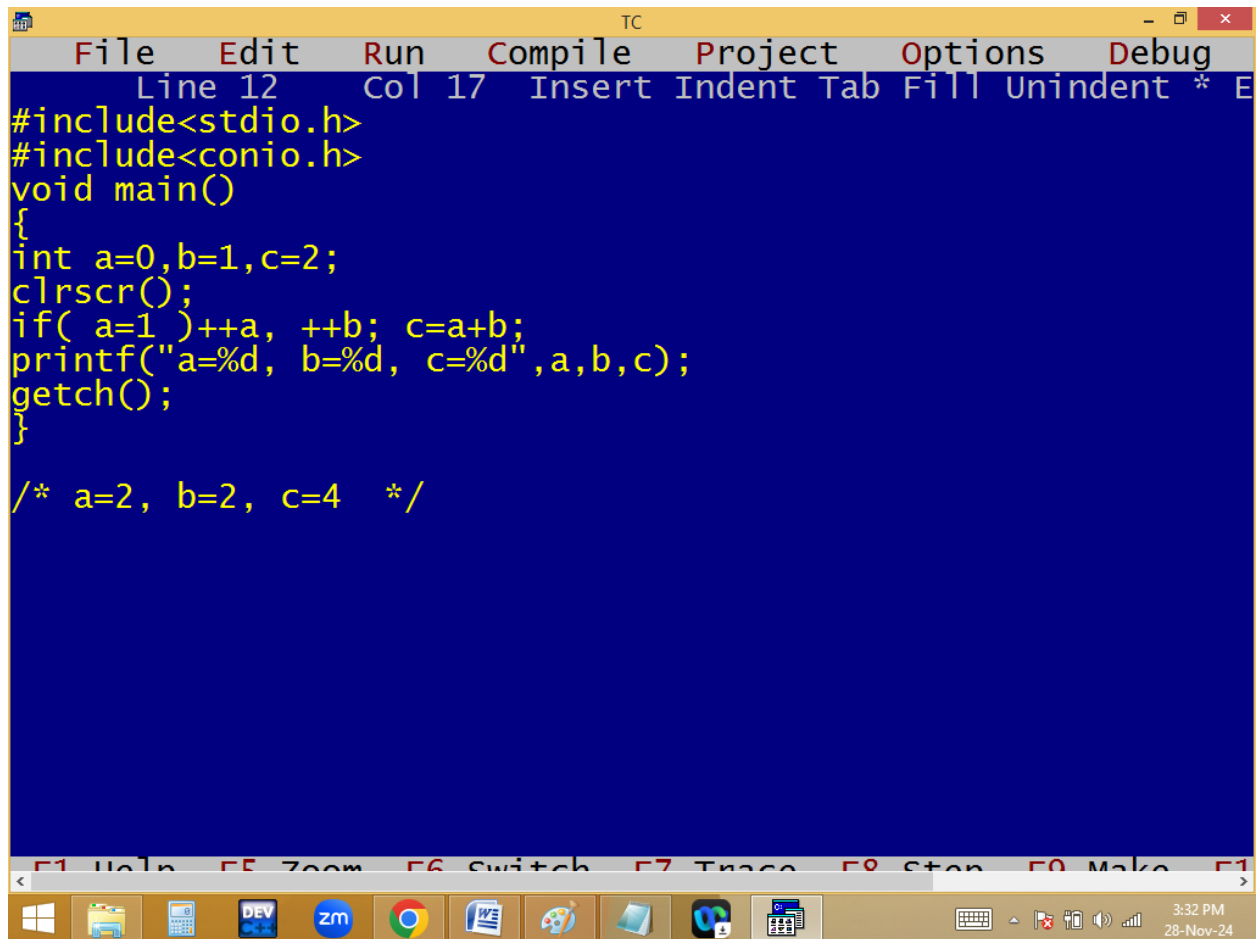
Below the code editor, there is a toolbar with function key shortcuts: F1 Help, F5 Zoom, F6 Switch, F7 Trace, F8 Stop, F9 Make, and F10. The Windows taskbar is visible at the bottom, showing icons for Windows, File Explorer, Calculator, DEV C++, Zoom, Google Chrome, Word, Paint, and a folder. The system clock in the bottom right corner shows "3:27 PM" and "28-Nov-24".

```
TC
File Edit Run Compile Project Options Debug
Line 16 Col 6 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
clrscr();
if( a=0,1 )
{
printf("a");
printf("b");
}
printf("c");
getch();
}

/* abc */

F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```

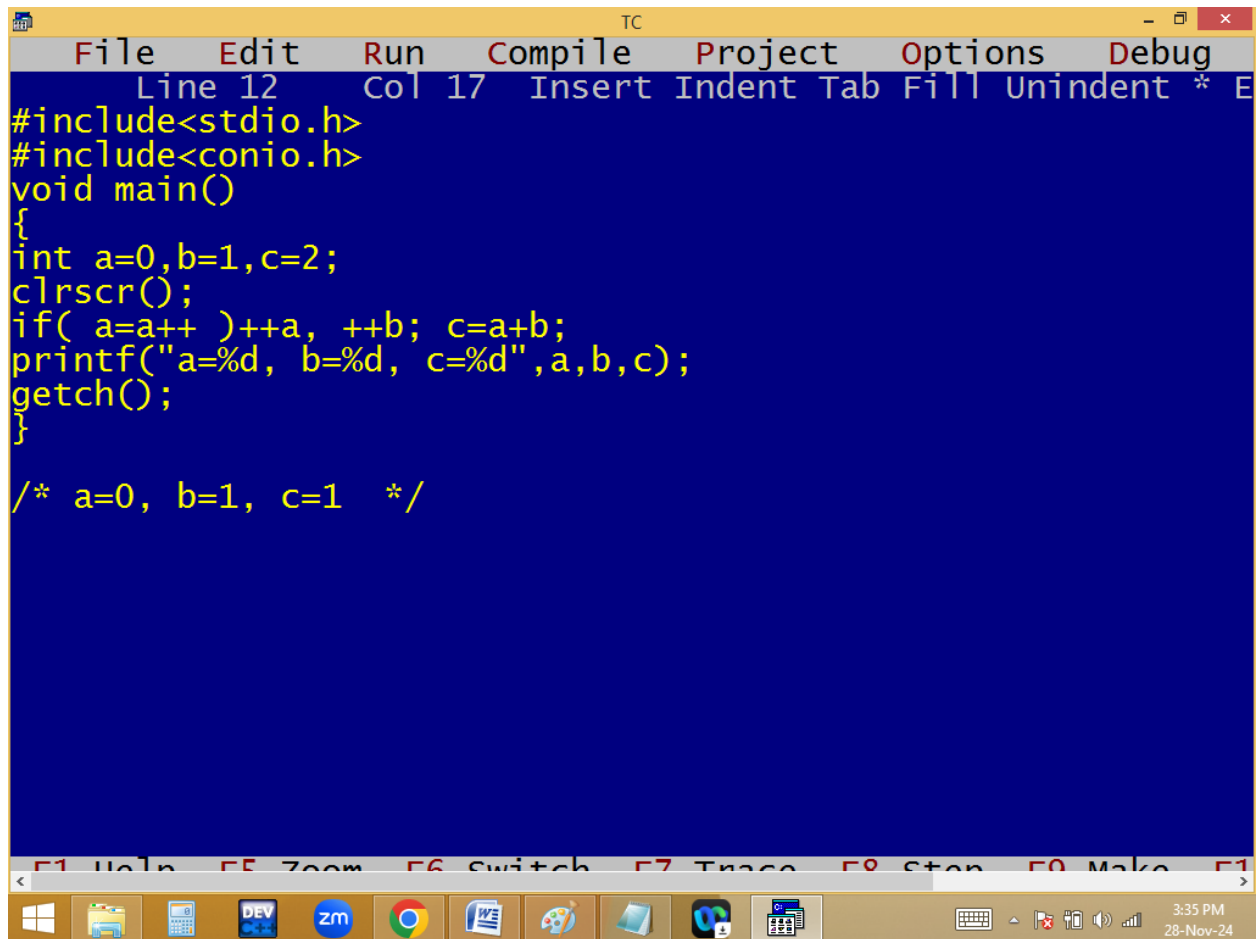
if( a = 0, 1 )



```
TC
File Edit Run Compile Project Options Debug
Line 12 Col 17 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0,b=1,c=2;
clrscr();
if( a=1 )++a, ++b; c=a+b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}

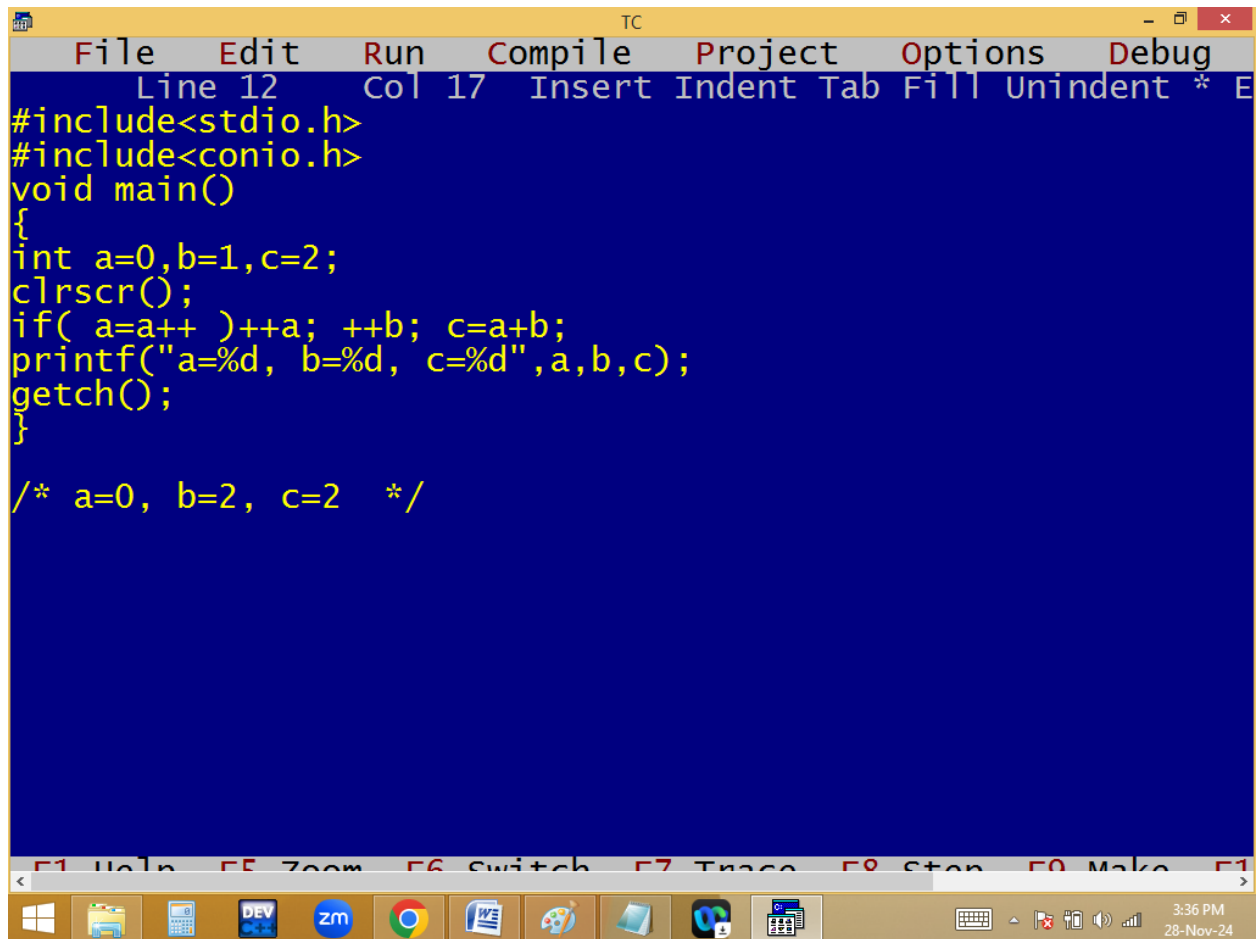
/* a=2, b=2, c=4 */
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```

3:32 PM  
28-Nov-24



```
TC
File Edit Run Compile Project Options Debug
Line 12 Col 17 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0,b=1,c=2;
clrscr();
if( a=a++ )++a, ++b; c=a+b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}

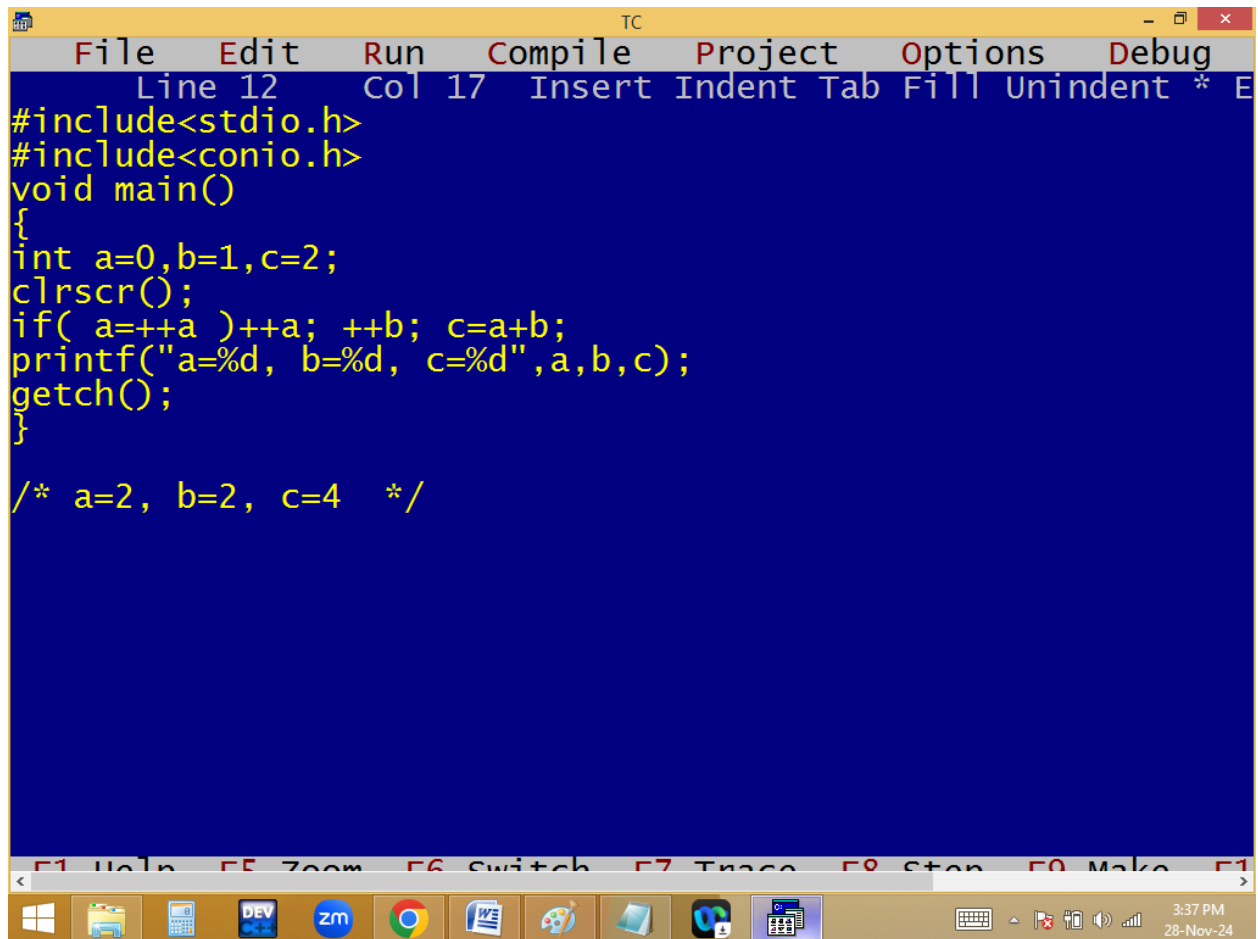
/* a=0, b=1, c=1 */
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10
```



```
TC
File Edit Run Compile Project Options Debug
Line 12 Col 17 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0,b=1,c=2;
clrscr();
if( a=a++ )++a; ++b; c=a+b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}

/* a=0, b=2, c=2 */
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F11
```

3:36 PM  
28-Nov-24



The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". The status bar at the top indicates "Line 12", "Col 17", and "Insert" mode. The code is written in yellow text on a dark blue background. It includes headers for `stdio.h` and `conio.h`, and defines a `main` function. Inside the function, variables `a`, `b`, and `c` are initialized to 0, 1, and 2 respectively. The screen is cleared with `clrscr()`. A loop is implemented where `a` is incremented by 1, `b` is incremented by 1, and `c` is set to the sum of `a` and `b`. The values of `a`, `b`, and `c` are printed using `printf`. The loop continues until the user presses a key, indicated by `getch()`. A comment at the bottom of the code states: `/* a=2, b=2, c=4 */`. The bottom status bar shows function key shortcuts: F1 Help, F5 Zoom, F6 Switch, F7 Trace, F8 Stop, F9 Make, and F10. The Windows taskbar at the bottom includes icons for the Start menu, File Explorer, Calculator, DEV C++, Zoom, Google Chrome, Word, Paint, and a folder. The system clock shows 3:37 PM on 28-Nov-24.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0,b=1,c=2;
clrscr();
if( a=++a )++a; ++b; c=a+b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}

/* a=2, b=2, c=4  */
```

```

TC
File Edit Run Compile Project Options Debug
Line 12 Col 22 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
char a=65,b=66,c=a+b;
clrscr();
if( c>=131 )++a; ++b;
printf("a=%d, b=%d, c=%d",a,b,c);
getch();
}

/* a=65, b=67, c=-125_ */

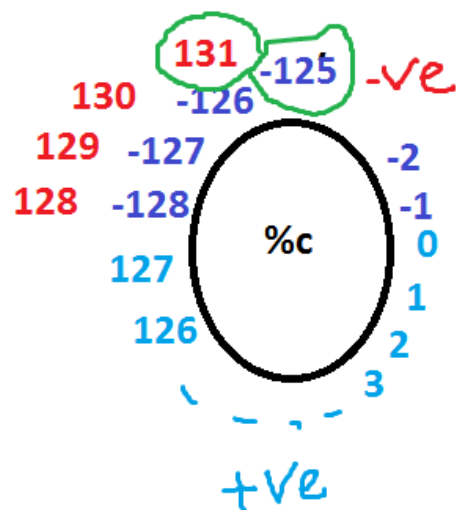
```

256 characters - 256 ASCII values  
char cycle

unsigned char 0 - 255

a=65

b=66  
c=131



$$\begin{array}{r}
 131 \\
 -128 + 3 = -125 \\
 \hline
 3
 \end{array}$$

256  
-131  
-125



