

SWITCH

It is a selection statement.

It is used to execute one case of statements from no of cases according to the switch expression value matched with case expression value. In switch the program is jumped to matching case like the go to label.

It is similar to ladder if in working style.

Switch performance is high when compared with ladder if because of it jumps to matching case.

Syntax:

```
switch(condition / expression)  
{  
  case  constexp1:  
    statements;  
    break;  
  case  constexp2:  
    statements;  
    break;  
  case  constexpN:  
    statements;  
    break;  
  [ default: statements; ]  
}
```

Here switch, case, break, default are the keywords.

In between case and case expression / value at least one space should be provided. **Otherwise it will become a label.**

case expression/value should be a **constant integer/char value**. i.e. float / string not allowed.

One case contains one expression only.

case expression doesn't contain any separators like , . etc.

case expression should be end with **: (colon)**

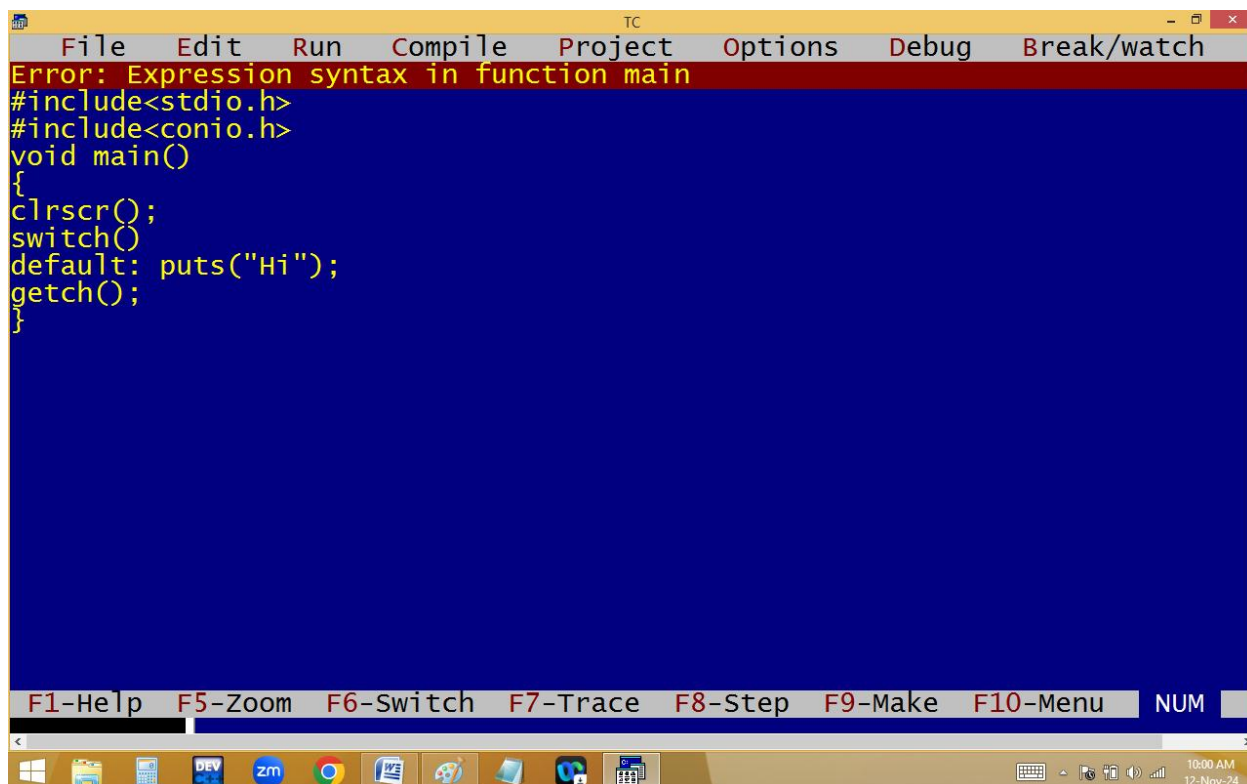
Each case should be separated with break keyword. Otherwise remaining cases also executed.

Duplicate cases not allowed.

default is similar to the else and all cases are failed then default statements are executed. Default is optional and we can declare it anywhere in our switch.

Outside case expressions not considered in switch.

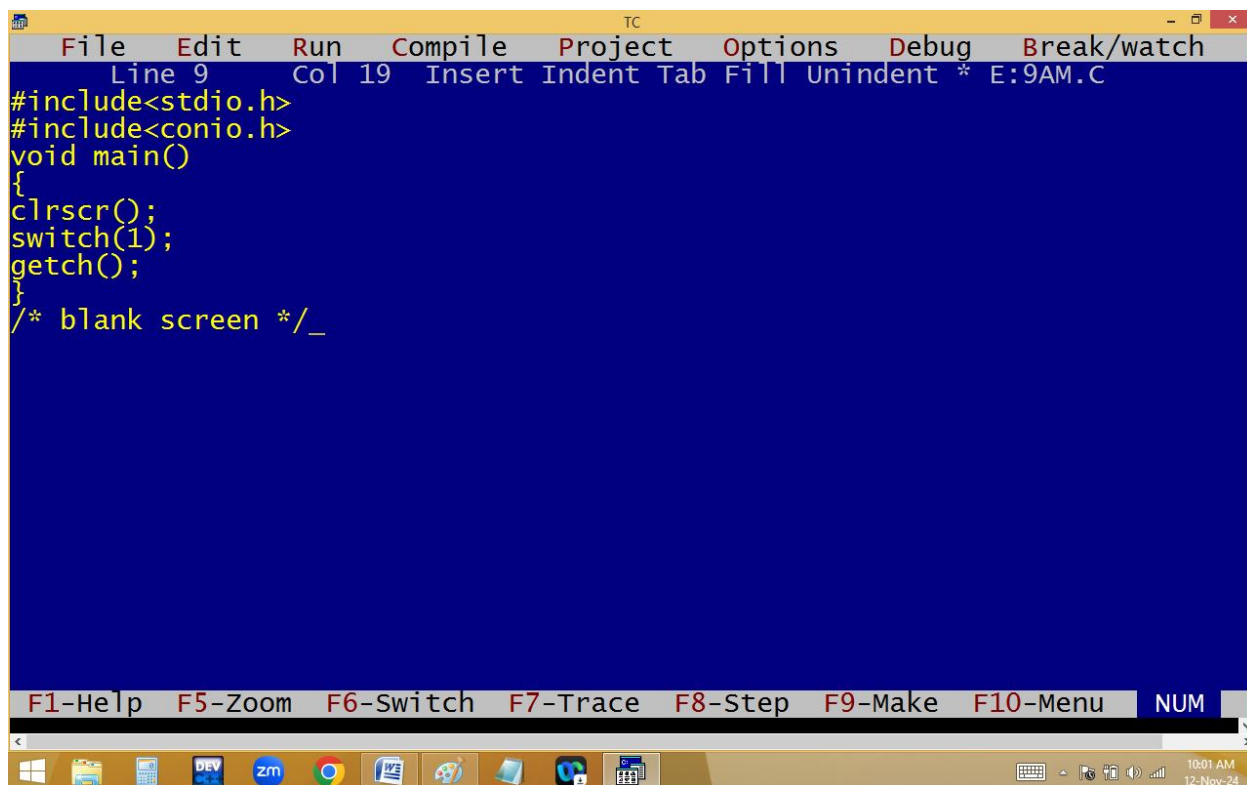
1. case value should be a const int.
2. float / strings not allowed.
3. var not allowed.
4. dup not allowed.
5. break is optional
6. default optional.
7. range of values not
8. , . not allowed.
9. outside case exp not considered.
10. switch / case / break / default
11. case and case value should be separated with min 1 space.
12. if no space provided it is converted into a label.
13. every case should have to end with :



The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a toolbar with function keys (F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, NUM). The main window has a blue background with yellow text. A red error message at the top reads "Error: Expression syntax in function main". The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch()
default: puts("Hi");
getch();
}
```

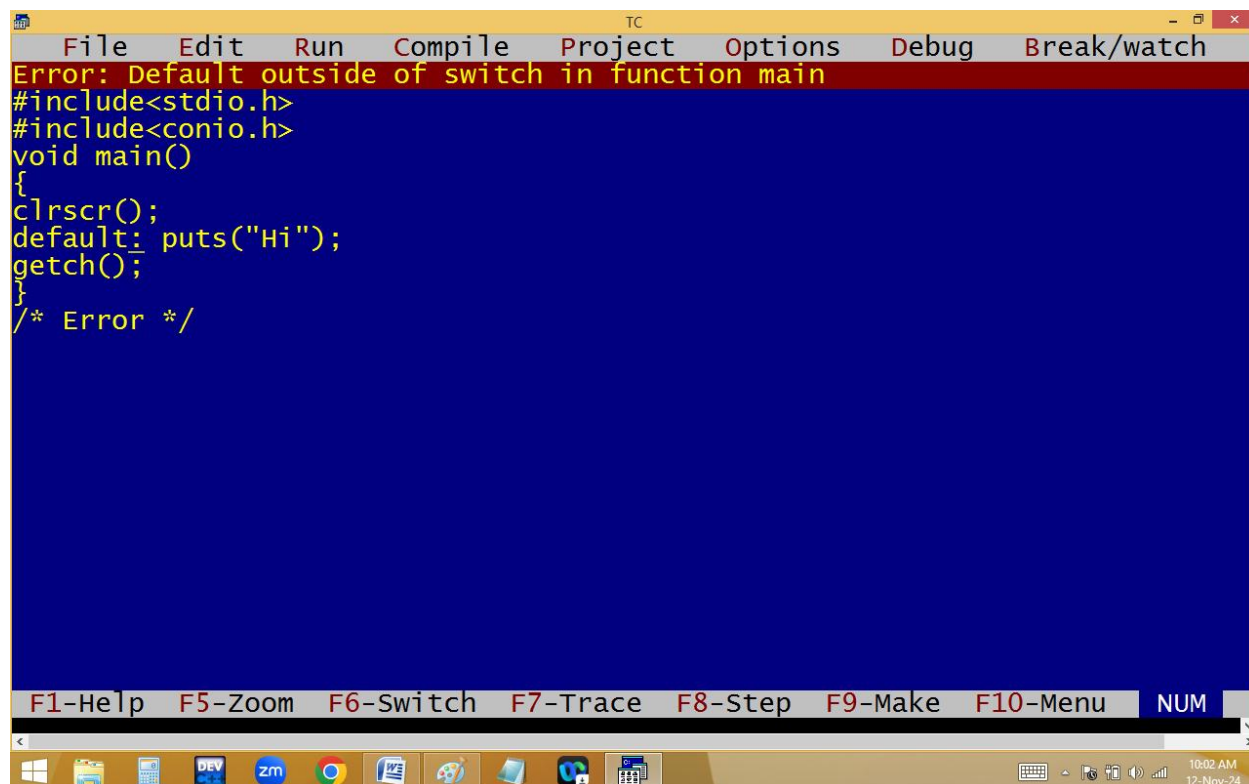
The Windows taskbar at the bottom shows icons for Windows, File Explorer, DEV, zm, Chrome, and other applications. The system clock indicates 10:00 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with the same menu bar and toolbar. The main window has a blue background with yellow text. The code in the editor is as follows:

```
Line 9 Col 19 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch(1);
getch();
}
/* blank screen */_
```

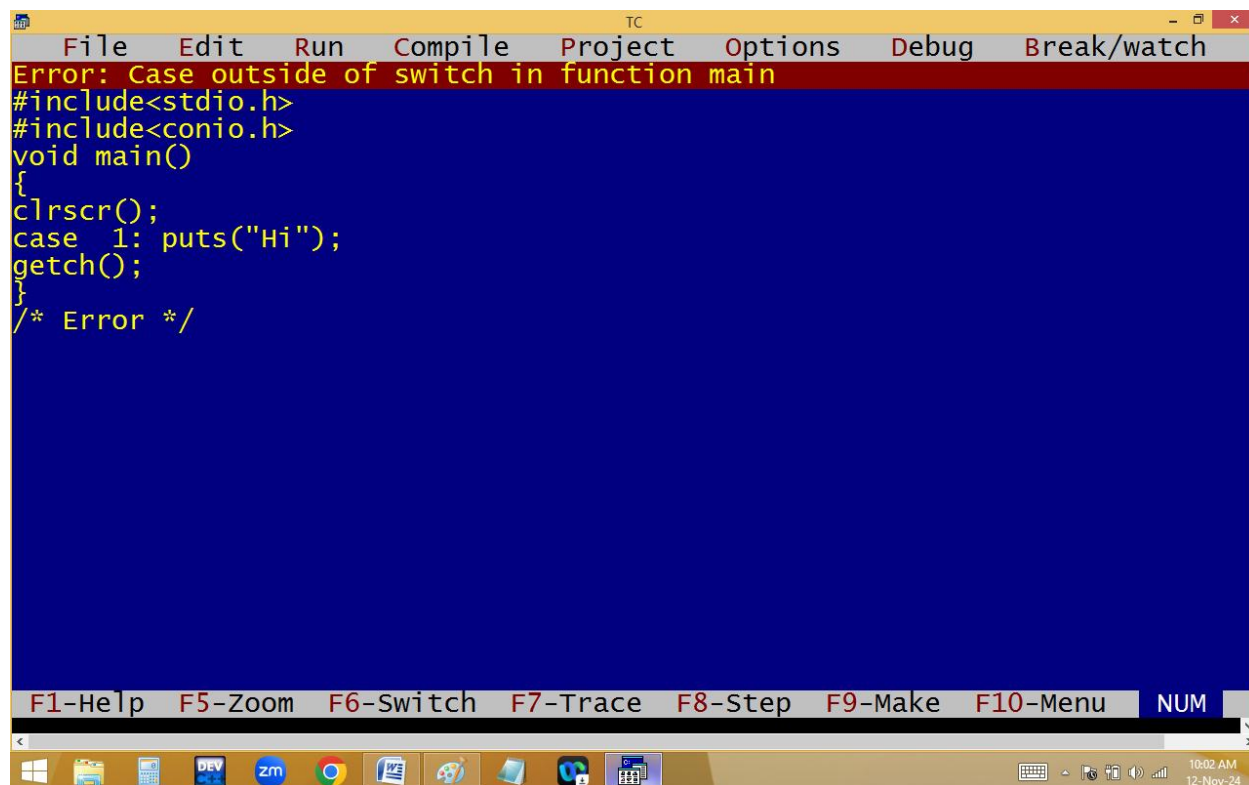
The Windows taskbar at the bottom shows icons for Windows, File Explorer, DEV, zm, Chrome, and other applications. The system clock indicates 10:01 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a toolbar with function keys (F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, NUM). The main window has a blue background with yellow text. A red error message bar at the top reads "Error: Default outside of switch in function main". The code in the editor is as follows:

```
Error: Default outside of switch in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
default: puts("Hi");
getch();
}
/* Error */
```

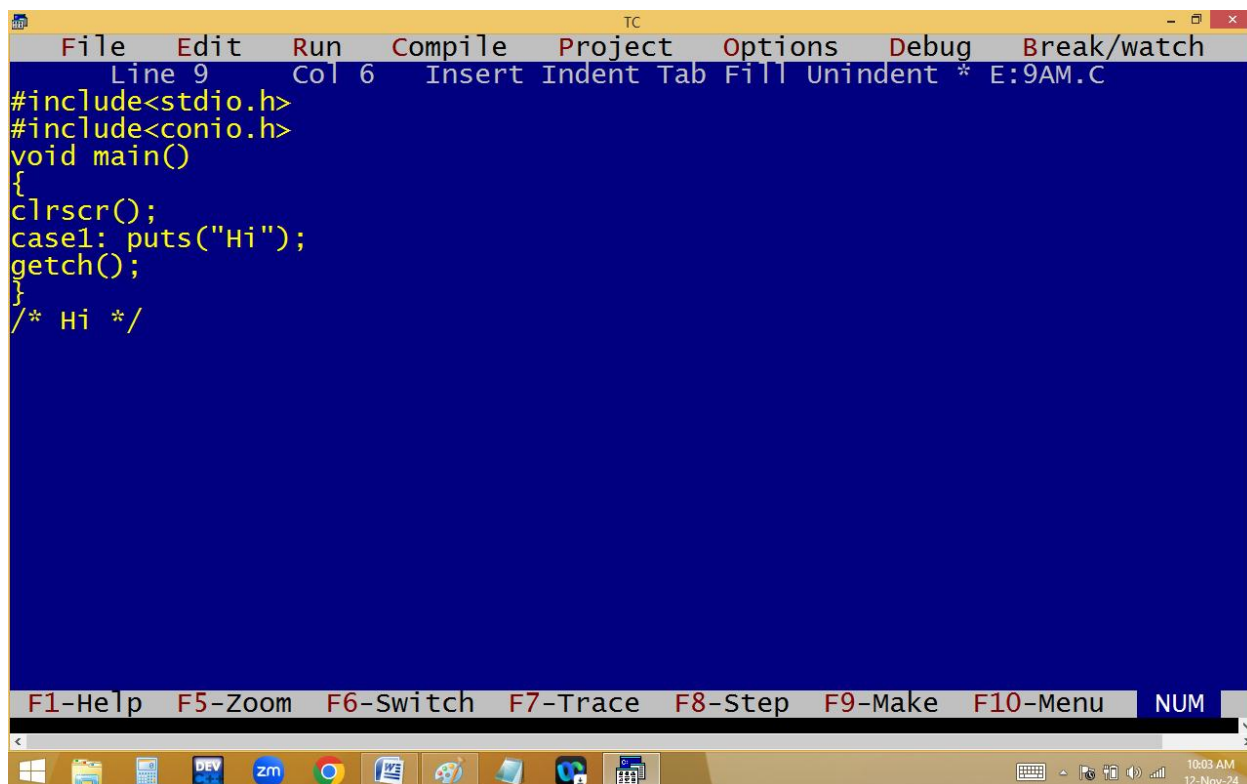
The Windows taskbar at the bottom shows the Start button, several application icons, and the system clock displaying 10:02 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a toolbar with function keys (F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, NUM). The main window has a blue background with yellow text. A red error message bar at the top reads "Error: Case outside of switch in function main". The code in the editor is as follows:

```
Error: Case outside of switch in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
case 1: puts("Hi");
getch();
}
/* Error */
```

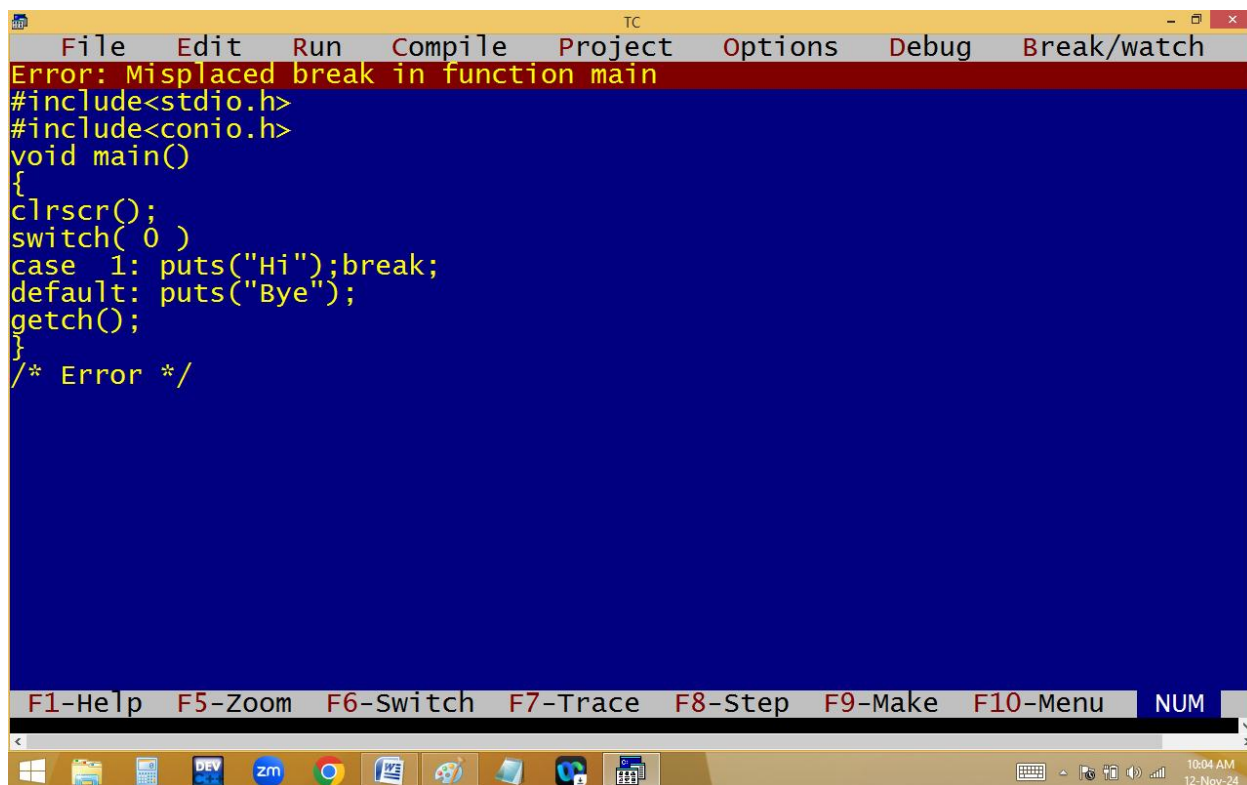
The Windows taskbar at the bottom shows the Start button, several application icons, and the system clock displaying 10:02 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a C program. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates Line 9, Col 6, and the file name E:9AM.C. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
case1: puts("Hi");
getch();
}
/* Hi */
```

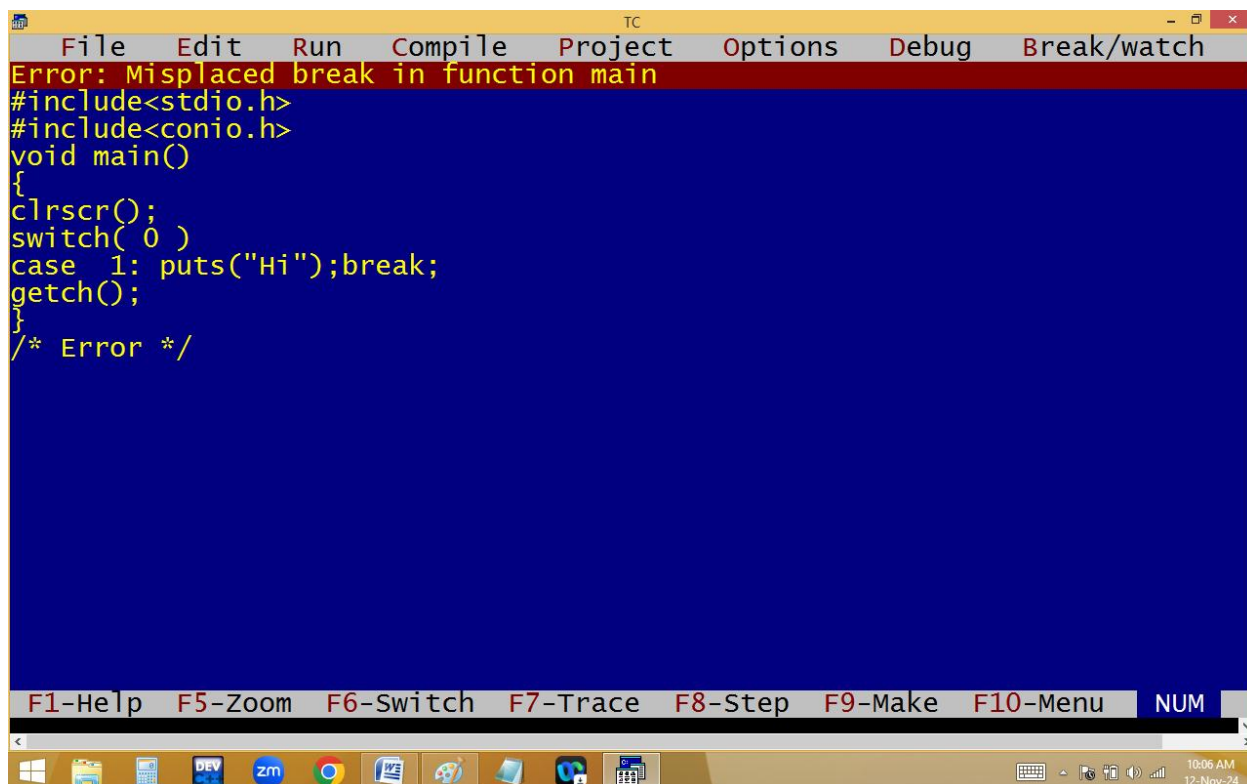
The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom shows the time as 10:03 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a C program. The menu bar is the same as the first image. The status bar at the top indicates Line 9, Col 6, and the file name E:9AM.C. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 0 )
case 1: puts("Hi");break;
default: puts("Bye");
getch();
}
/* Error */
```

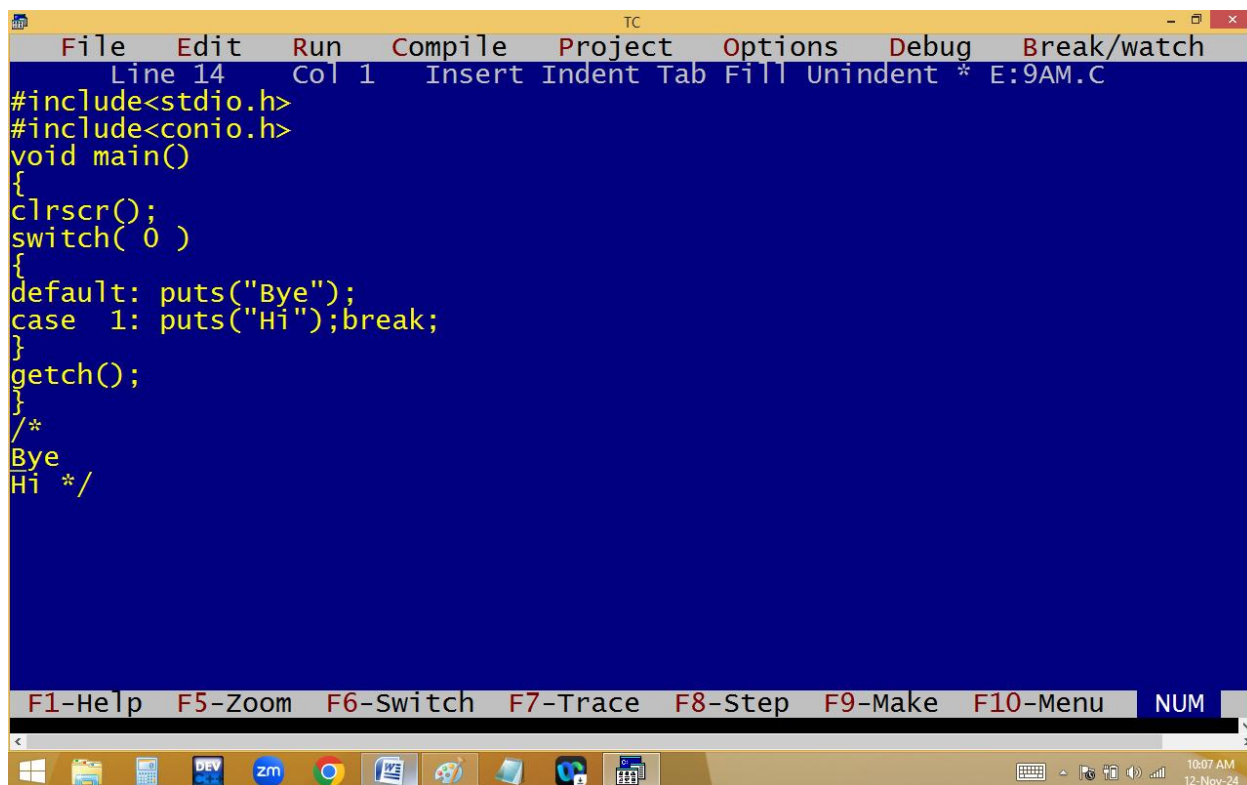
A red error message is displayed at the top of the code area: "Error: Misplaced break in function main". The bottom status bar shows the same function key shortcuts as the first image. The Windows taskbar at the bottom shows the time as 10:04 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a red error message at the top: "Error: Misplaced break in function main". The code in the editor is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Error: Misplaced break in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 0 )
case 1: puts("Hi");break;
getch();
}
/* Error */
```

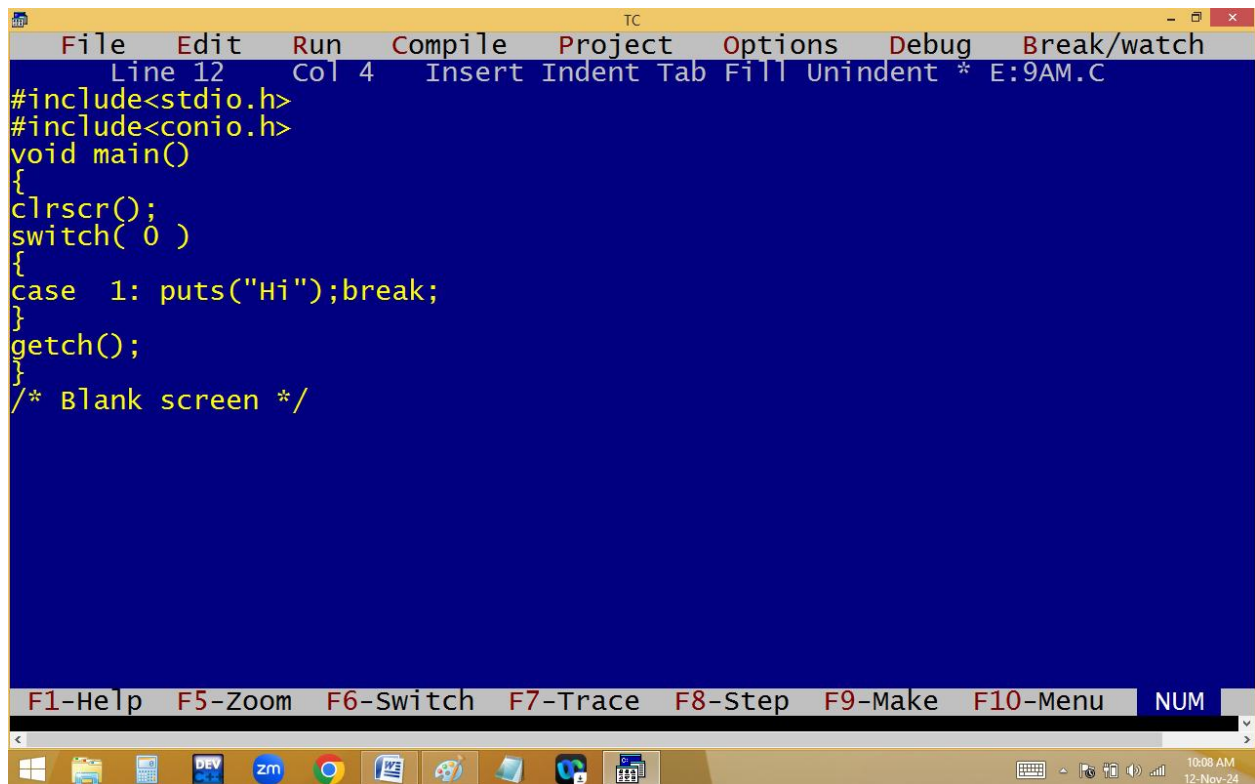
The status bar at the bottom shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the very bottom shows the time as 10:06 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with the error message removed. The code in the editor is now correct:

```
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 1 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 0 )
{
default: puts("Bye");
case 1: puts("Hi");break;
}
getch();
}
/*
Bye
Hi */
```

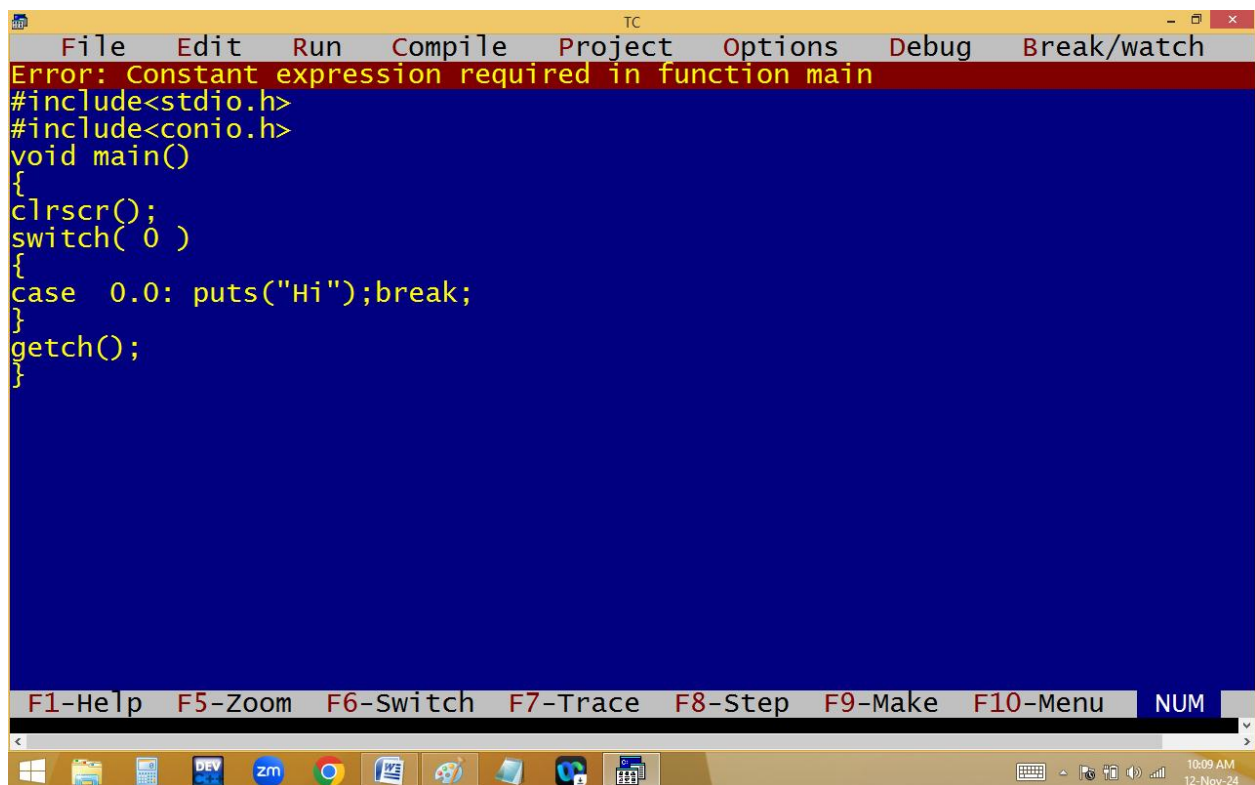
The status bar at the bottom shows the same function key shortcuts as the first screenshot. The Windows taskbar at the very bottom shows the time as 10:07 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a toolbar. The code in the editor is as follows:

```
Line 12 Col 4 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 0 )
{
case 1: puts("Hi");break;
}
getch();
}
/* Blank screen */
```

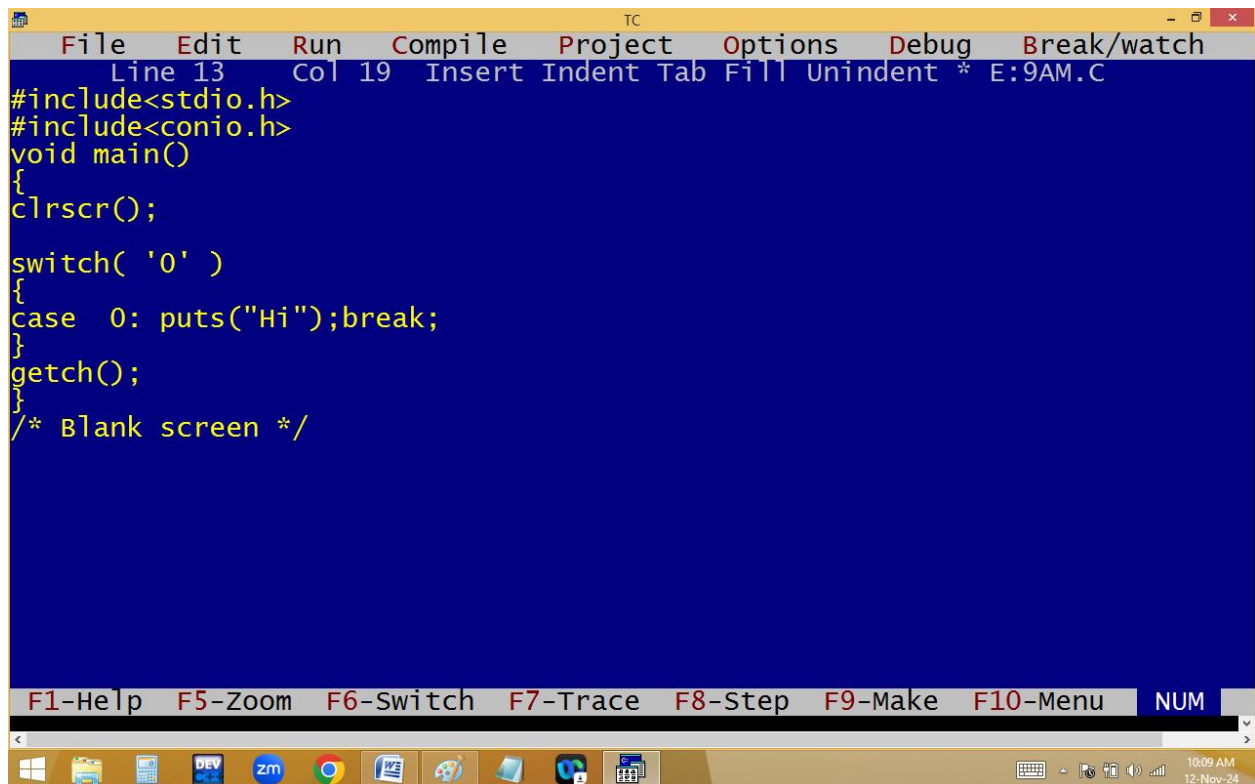
The status bar at the bottom displays function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM.



The screenshot shows the Turbo C++ IDE with the same menu bar and toolbar. A red error message is displayed at the top: "Error: Constant expression required in function main". The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 0 )
{
case 0.0: puts("Hi");break;
}
getch();
}
```

The status bar at the bottom displays the same function key shortcuts as the first screenshot.

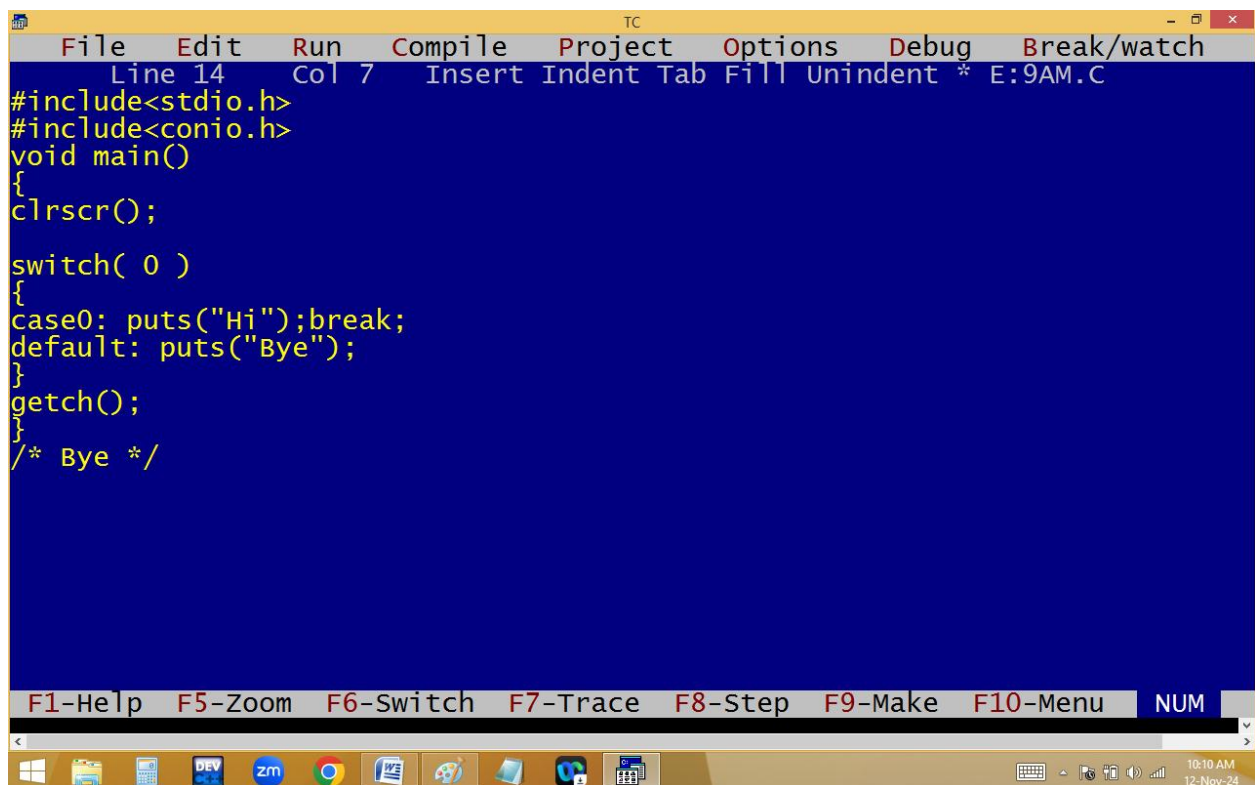


The screenshot shows the Turbo C++ IDE with a blue background. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates Line 13, Col 19, and the file name E:9AM.C. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( '0' )
{
case 0: puts("Hi");break;
}
getch();
}
/* Blank screen */
```

The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom includes icons for various applications and the system clock showing 10:09 AM on 12-Nov-24.

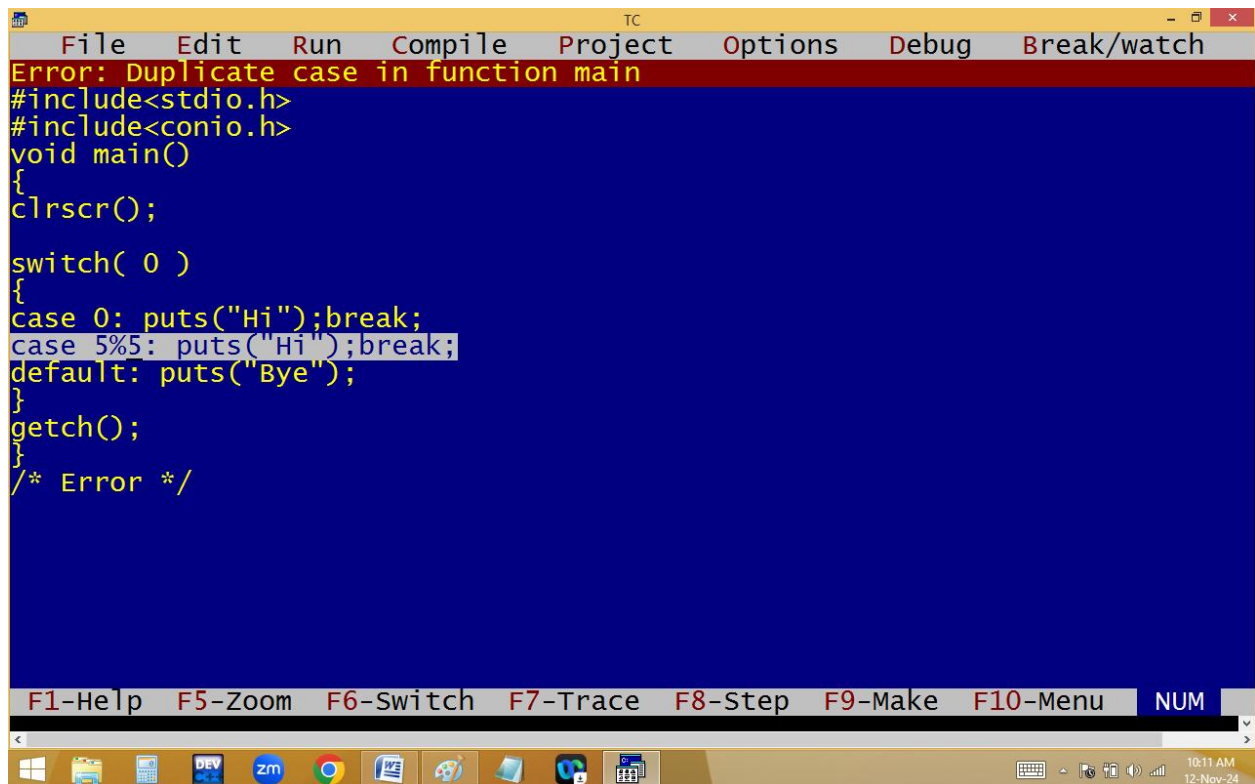


The screenshot shows the Turbo C++ IDE with a blue background. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates Line 14, Col 7, and the file name E:9AM.C. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( 0 )
{
case0: puts("Hi");break;
default: puts("Bye");
}
getch();
}
/* Bye */
```

The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom includes icons for various applications and the system clock showing 10:10 AM on 12-Nov-24.

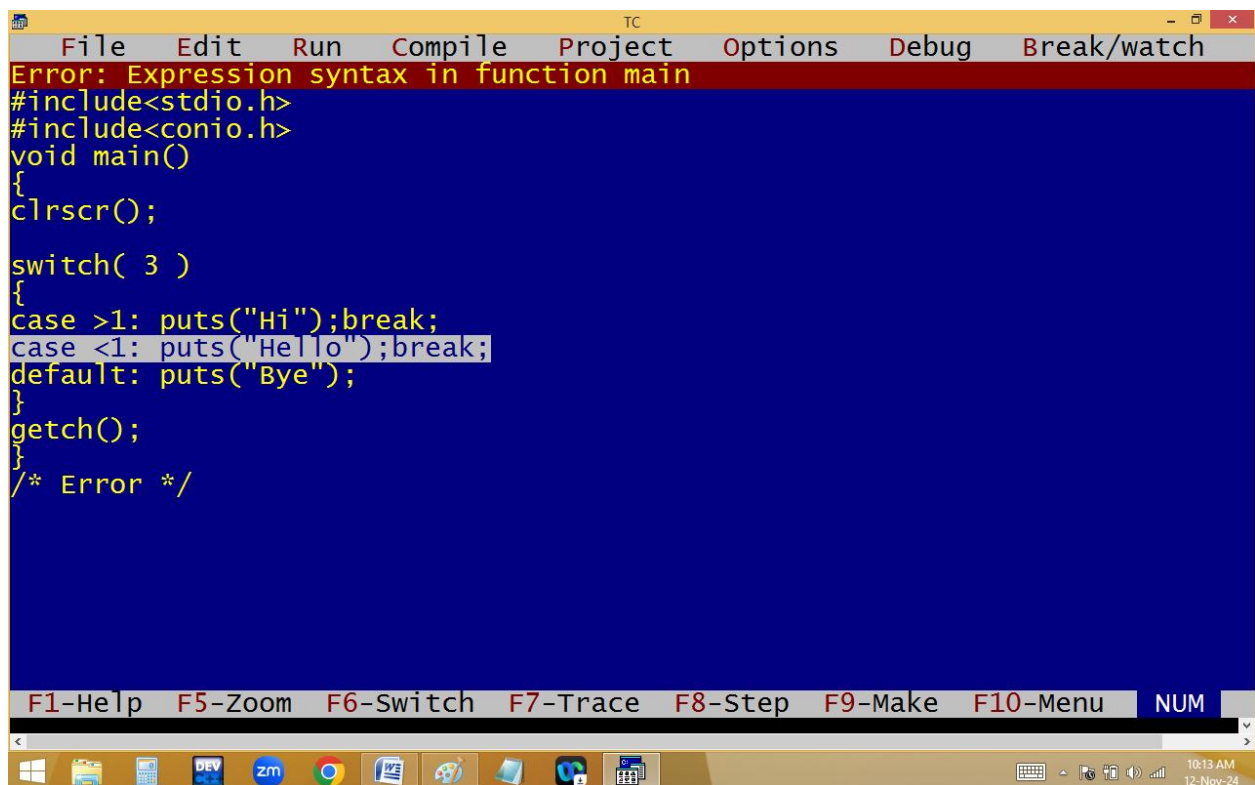


The screenshot shows the Turbo C++ (TC) IDE with a red error banner at the top that reads "Error: Duplicate case in function main". The code in the editor is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Error: Duplicate case in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( 0 )
{
case 0: puts("Hi");break;
case 5%5: puts("Hi");break;
default: puts("Bye");
}
getch();
}
/* Error */
```

The code is highlighted in yellow. The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom includes icons for various applications and the system clock showing 10:11 AM on 12-Nov-24.

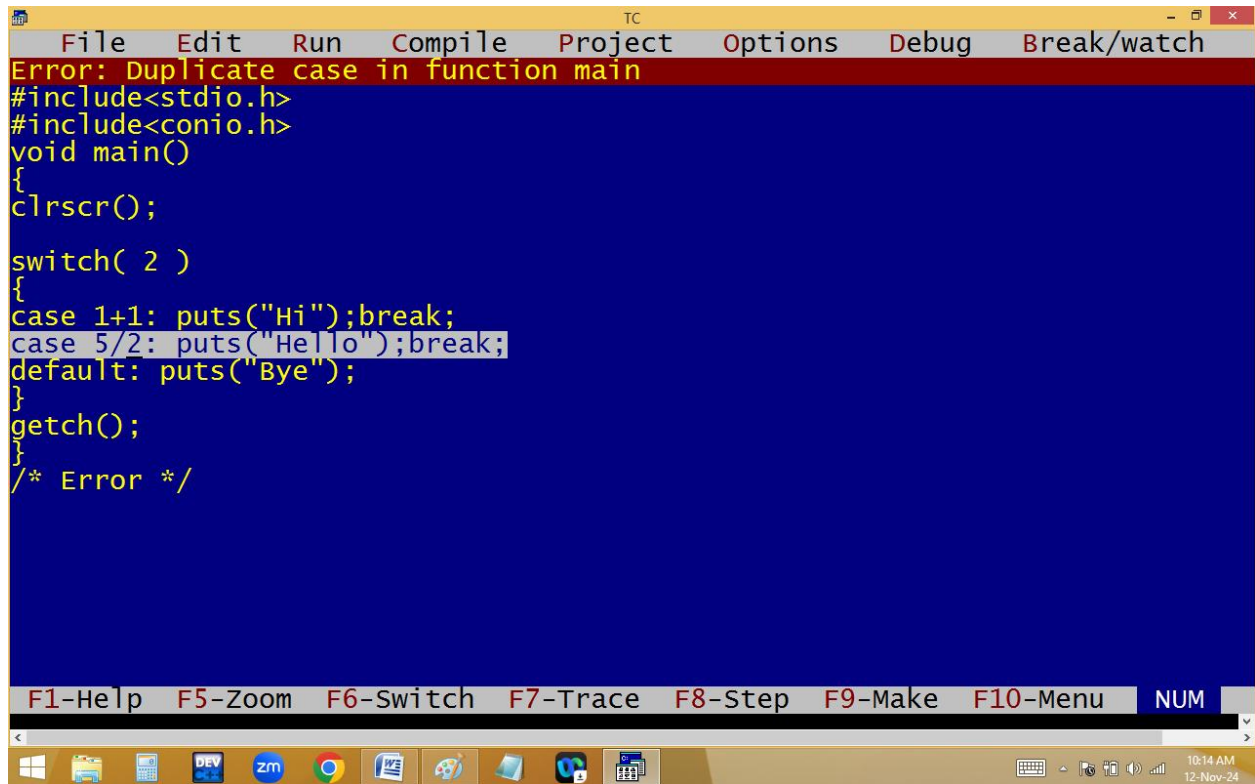


The screenshot shows the Turbo C++ (TC) IDE with a red error banner at the top that reads "Error: Expression syntax in function main". The code in the editor is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Error: Expression syntax in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( 3 )
{
case >1: puts("Hi");break;
case <1: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Error */
```

The code is highlighted in yellow. The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom includes icons for various applications and the system clock showing 10:13 AM on 12-Nov-24.

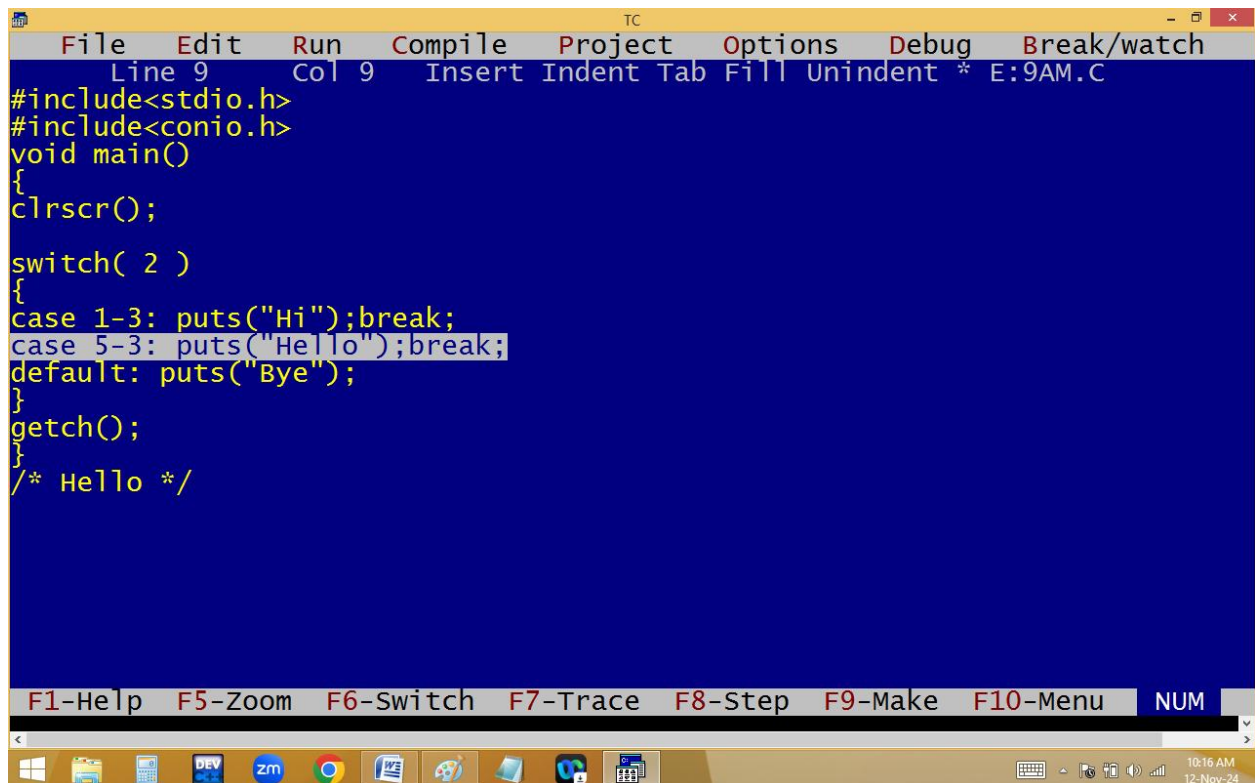


The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a toolbar. The code in the editor is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Error: Duplicate case in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( 2 )
{
case 1+1: puts("Hi");break;
case 5/2: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Error */
```

The error message "Error: Duplicate case in function main" is displayed at the top. The code contains a switch statement with two cases: "case 1+1: puts('Hi');break;" and "case 5/2: puts('Hello');break;". The status bar at the bottom shows function key shortcuts (F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, NUM) and the system clock (10:14 AM, 12-Nov-24).

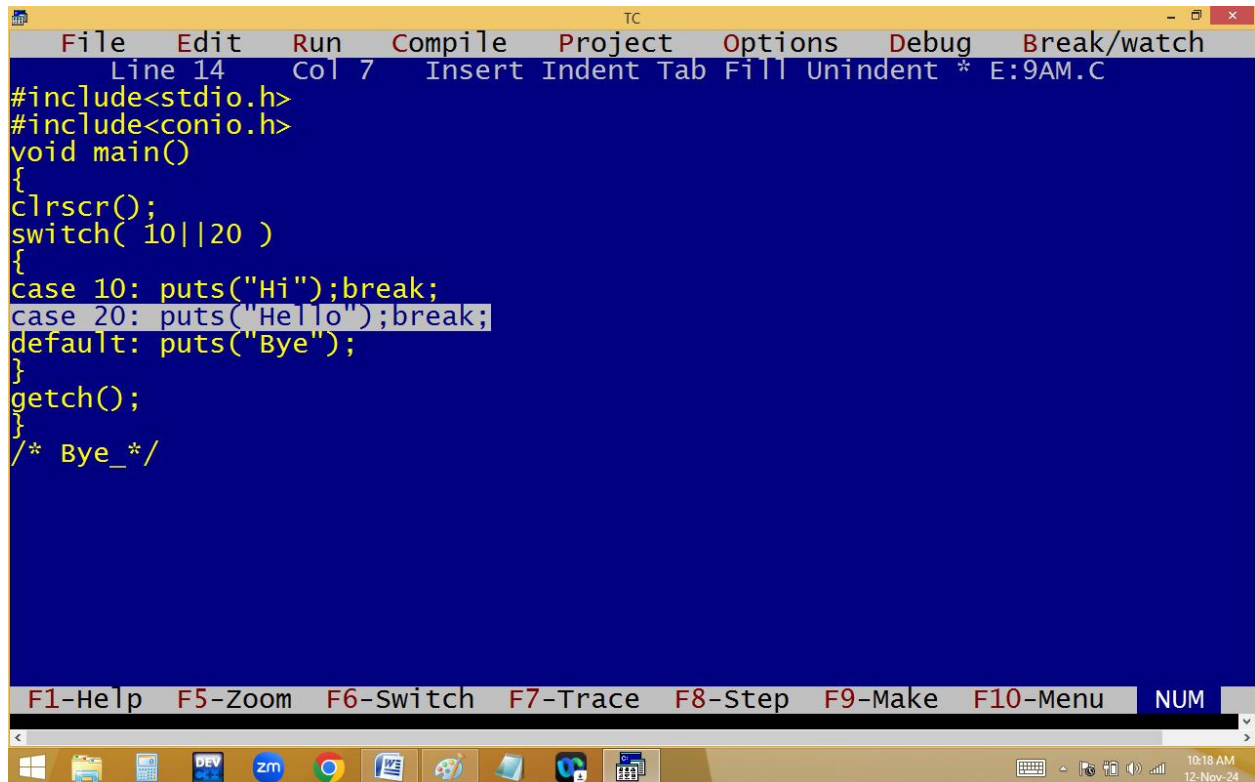


The screenshot shows the Turbo C++ IDE with the same menu bar and toolbar. The code in the editor is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 9 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();

switch( 2 )
{
case 1-3: puts("Hi");break;
case 5-3: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Hello */
```

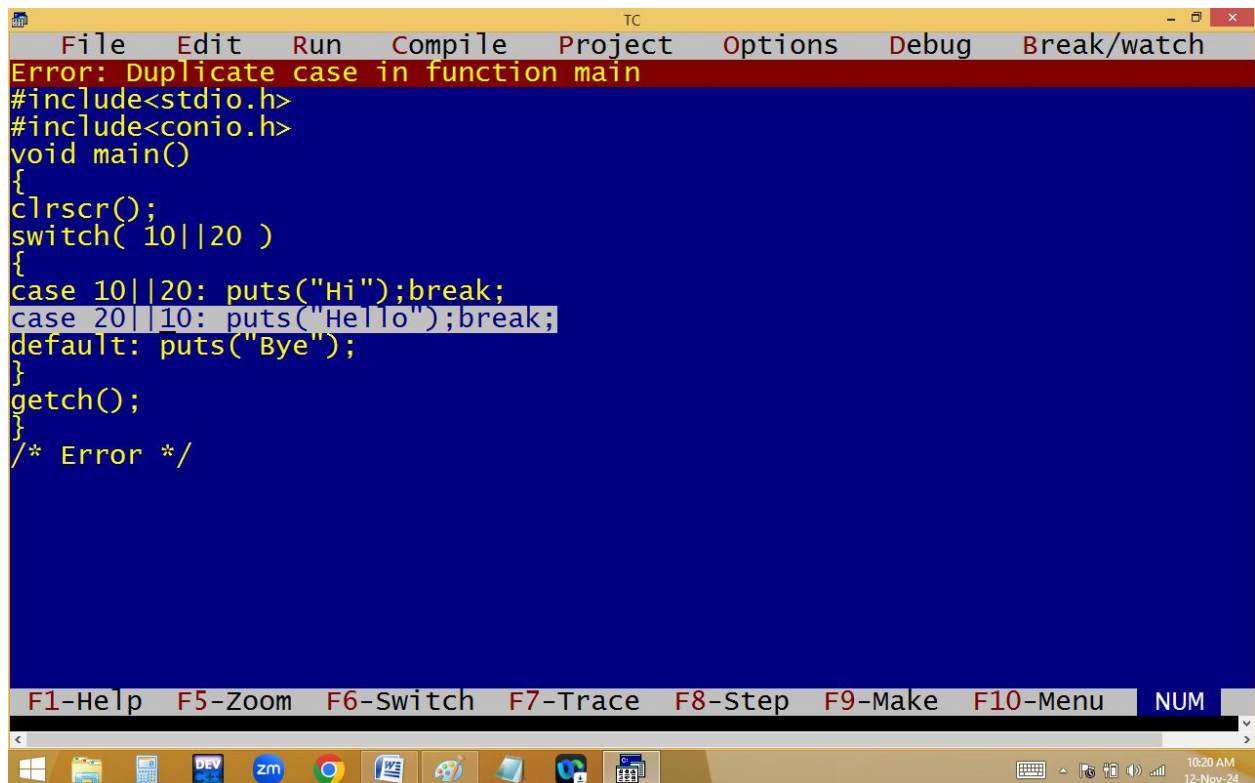
The code has been corrected. The switch statement now has two cases: "case 1-3: puts('Hi');break;" and "case 5-3: puts('Hello');break;". The status bar at the bottom shows the same function key shortcuts and the system clock (10:16 AM, 12-Nov-24).



The screenshot shows the Turbo C++ IDE with a C program. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates Line 14, Col 7, and the file name E:9AM.C. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 10||20 )
{
case 10: puts("Hi");break;
case 20: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Bye_*/
```

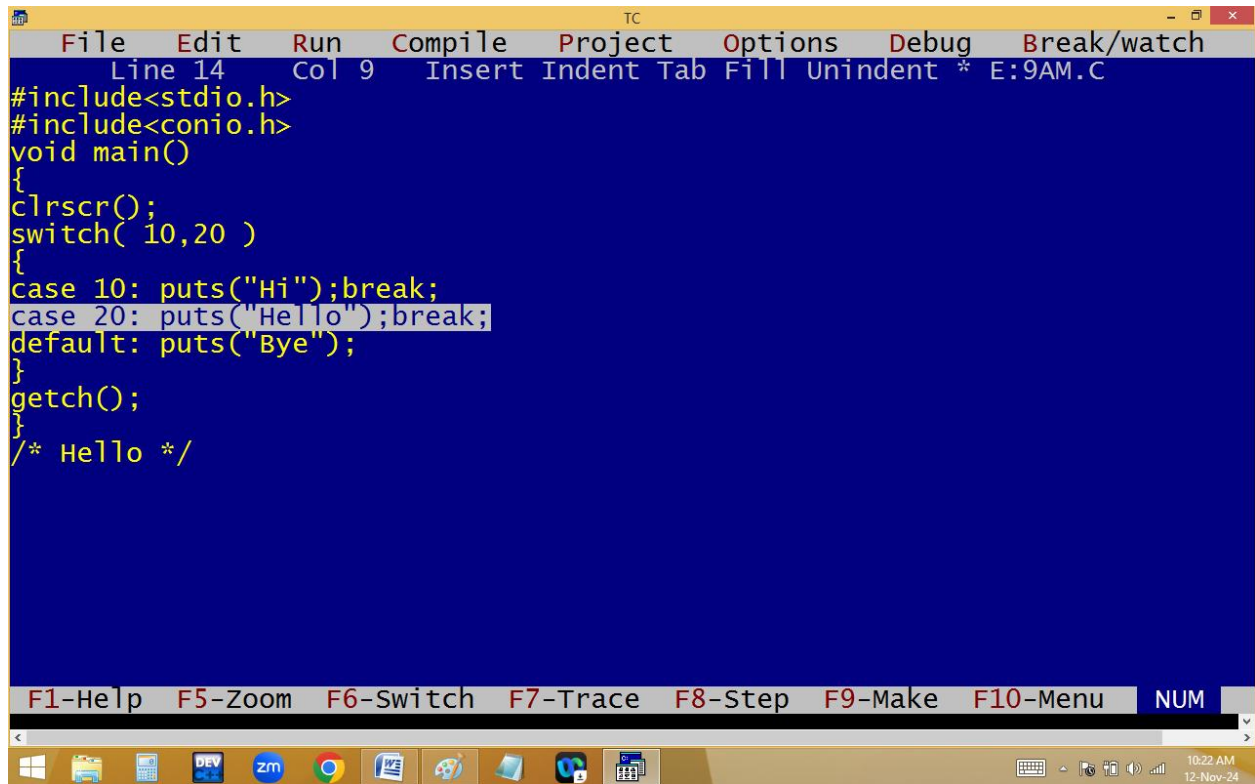
The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom shows the time as 10:18 AM on 12-Nov-24.



The screenshot shows the Turbo C++ IDE with a compilation error. The menu bar is the same as the previous image. The status bar at the top indicates Line 14, Col 7, and the file name E:9AM.C. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 10||20 )
{
case 10||20: puts("Hi");break;
case 20||10: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Error */
```

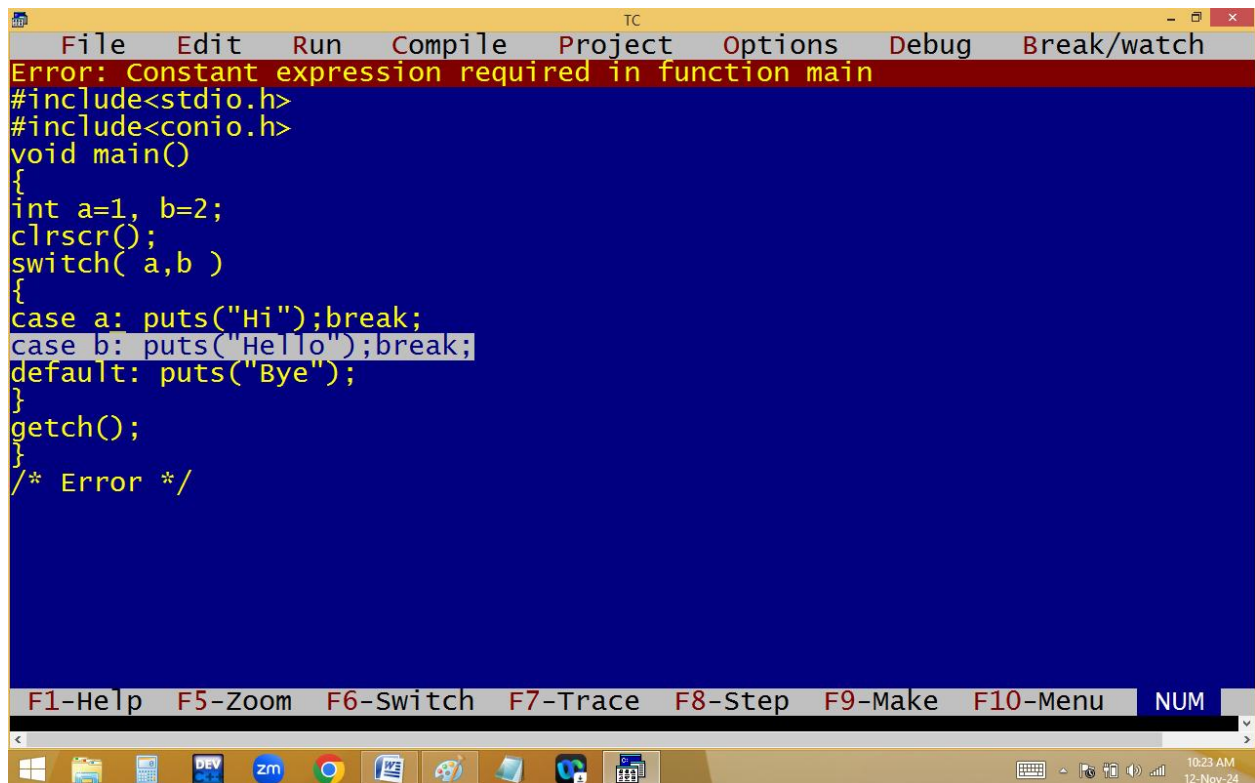
The bottom status bar shows function key shortcuts: F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom shows the time as 10:20 AM on 12-Nov-24.



The screenshot shows the Turbo C++ (TC) IDE interface. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 14 Col 9' and 'Insert Indent Tab Fill Unindent * E:9AM.C'. The code editor contains the following C program:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
switch( 10,20 )
{
case 10: puts("Hi");break;
case 20: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Hello */
```

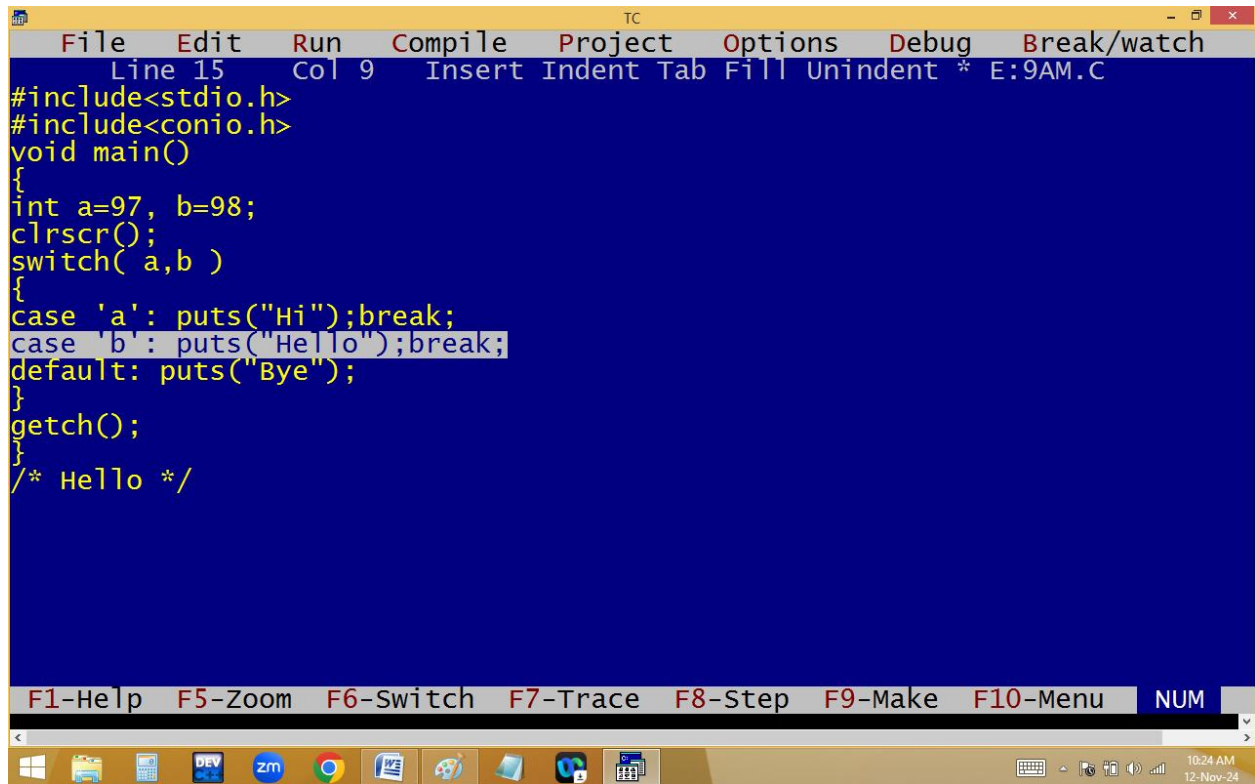
The function key bar at the bottom shows F1-Help, F5-Zoom, F6-Switch, F7-Trace, F8-Step, F9-Make, F10-Menu, and NUM. The Windows taskbar at the bottom shows various application icons and the system clock indicating 10:22 AM on 12-Nov-24.



The screenshot shows the Turbo C++ (TC) IDE interface with a compilation error. The menu bar and status bar are the same as in the previous image. The code editor displays the following C program:

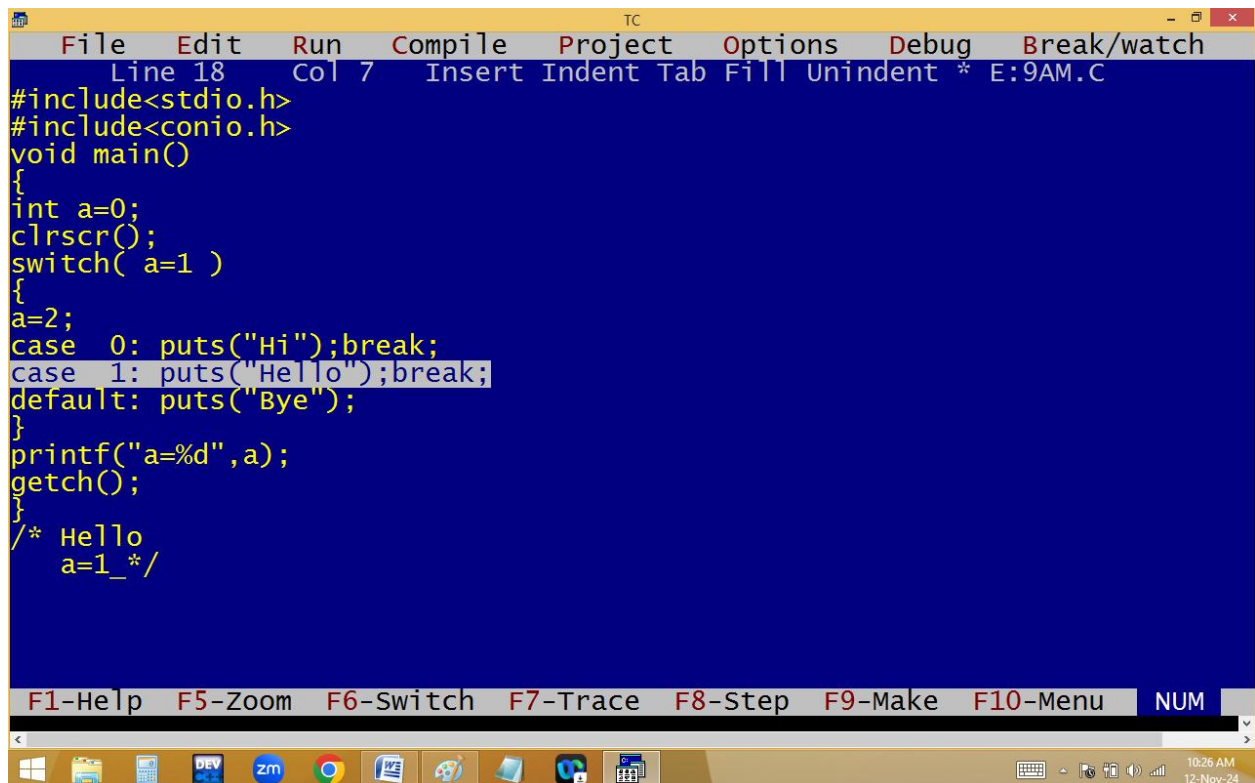
```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=1, b=2;
clrscr();
switch( a,b )
{
case a: puts("Hi");break;
case b: puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Error */
```

A red error message banner at the top of the code editor reads: "Error: Constant expression required in function main". The function key bar and Windows taskbar are also visible at the bottom.



```
File Edit Run Compile Project Options Debug Break/watch
Line 15 Col 9 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=97, b=98;
clrscr();
switch( a,b )
{
case 'a': puts("Hi");break;
case 'b': puts("Hello");break;
default: puts("Bye");
}
getch();
}
/* Hello */

F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```



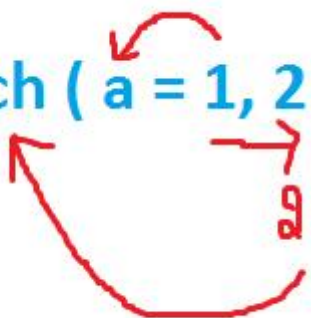
```
File Edit Run Compile Project Options Debug Break/watch
Line 18 Col 7 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0;
clrscr();
switch( a=1 )
{
a=2;
case 0: puts("Hi");break;
case 1: puts("Hello");break;
default: puts("Bye");
}
printf("a=%d",a);
getch();
}
/* Hello
a=1 */

F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 16 Col 7 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0;
clrscr();
switch( a=1,2 )
{
case 0: puts("Hi");break;
case 1: puts("Hello");break;
default: puts("Bye");
}
printf("a=%d",a);
getch();
}
/* Bye
a=1 */

F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

switch (a = 1, 2)

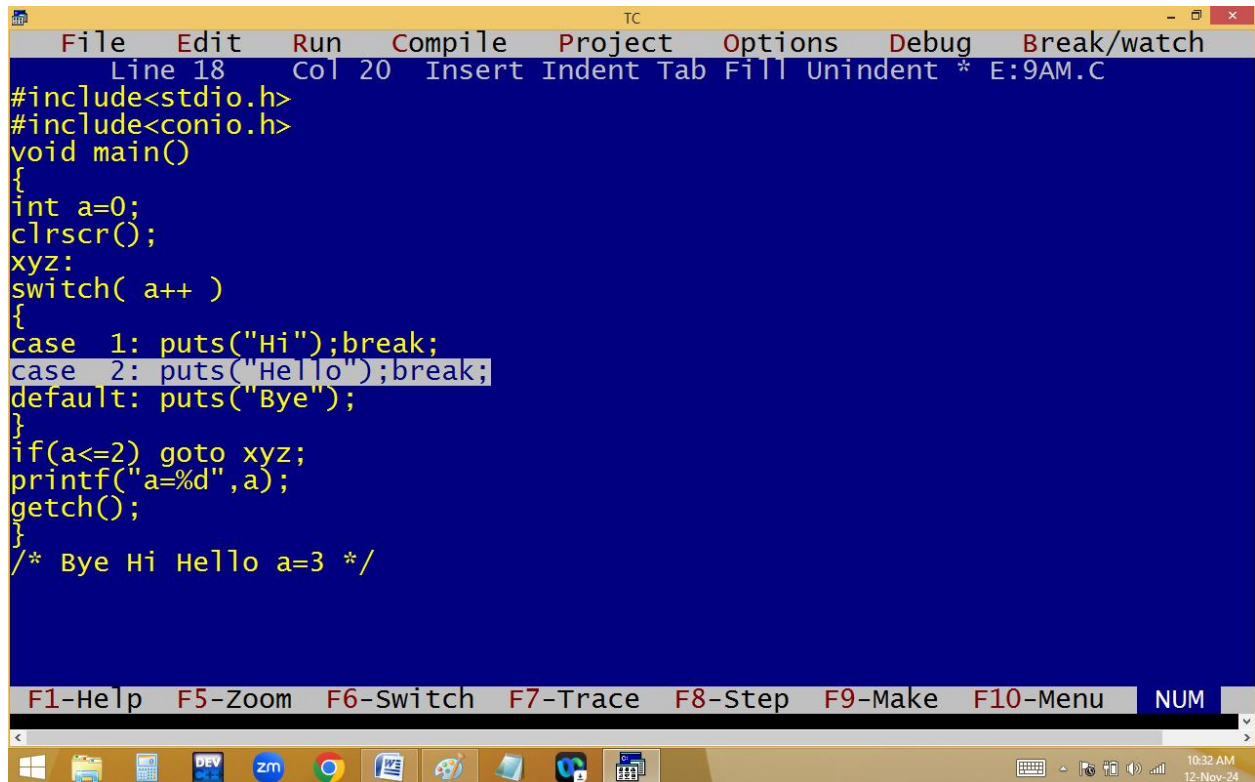



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 17 Col 7 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0;
clrscr();
switch( a=(1,2),0 )
{
case 0: puts("Hi");break;
case 1: puts("Hello");break;
default: puts("Bye");
}
printf("a=%d",a);
getch();
}
/* Hi
a=2 */

F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

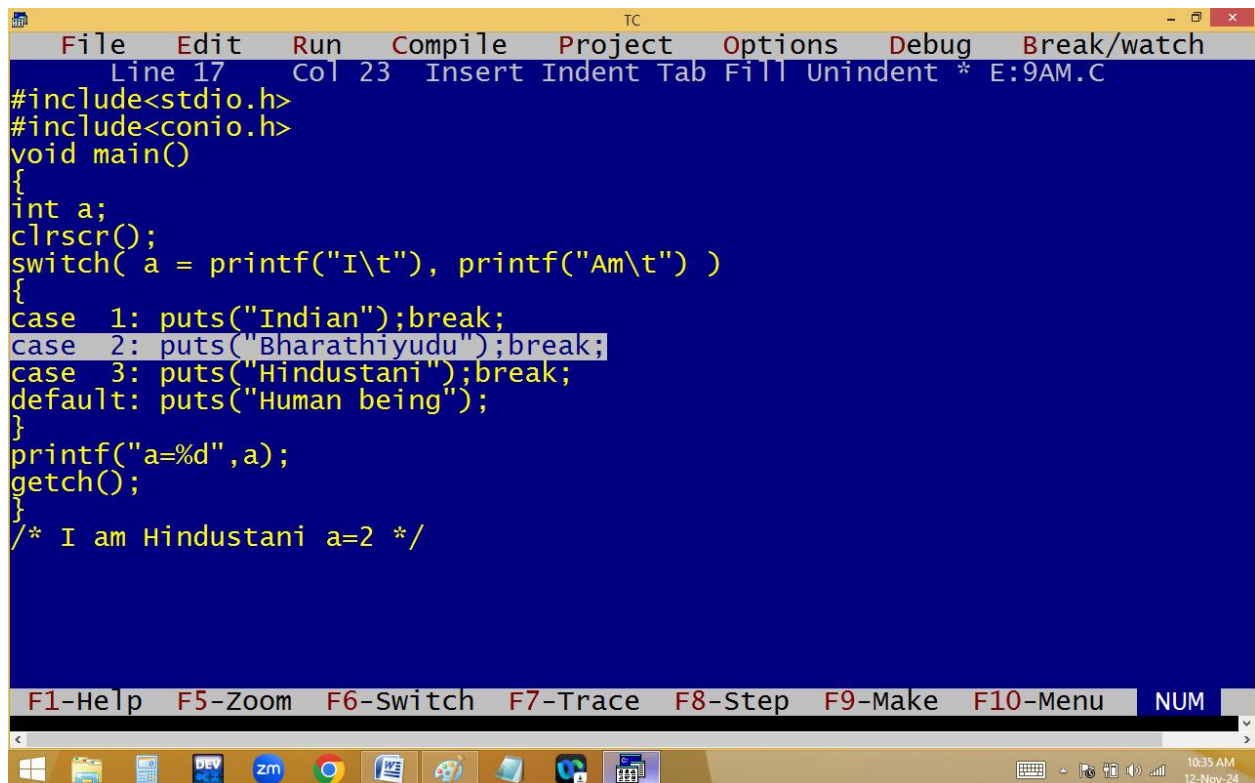
switch (a = (1, 2), 0)





The screenshot shows the Turbo C++ IDE with a C program. The code uses `#include<stdio.h>` and `#include<conio.h>`. The `main` function initializes `a=0` and calls `clrscr()`. A label `xyz:` is followed by a `switch(a++)` statement with three cases: `case 1: puts("Hi"); break;`, `case 2: puts("Hello"); break;`, and `default: puts("Bye");`. A loop is implemented using `if(a<=2) goto xyz;`. The program prints the value of `a` and waits for a key press with `getch()`. A comment at the bottom indicates the output: `/* Bye Hi Hello a=3 */`. The status bar shows line 18, column 20.

```
File Edit Run Compile Project Options Debug Break/watch
Line 18 Col 20 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=0;
clrscr();
xyz:
switch( a++ )
{
case 1: puts("Hi");break;
case 2: puts("Hello");break;
default: puts("Bye");
}
if(a<=2) goto xyz;
printf("a=%d",a);
getch();
}
/* Bye Hi Hello a=3 */
F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

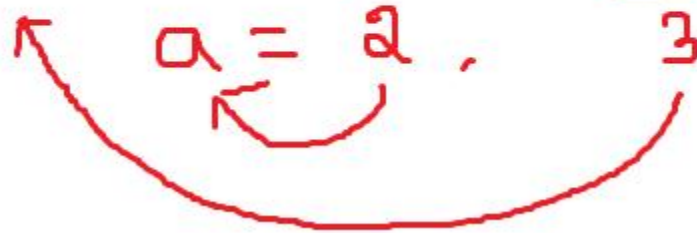


The screenshot shows the Turbo C++ IDE with a C program. The code uses `#include<stdio.h>` and `#include<conio.h>`. The `main` function declares `int a;` and calls `clrscr()`. A `switch` statement is used where the condition is `a = printf("I\t"), printf("Am\t")`. There are three cases: `case 1: puts("Indian"); break;`, `case 2: puts("Bharathiyudu"); break;`, and `case 3: puts("Hindustani"); break;`, followed by a `default: puts("Human being");`. The program prints the value of `a` and waits for a key press with `getch()`. A comment at the bottom indicates the output: `/* I am Hindustani a=2 */`. The status bar shows line 17, column 23.

```
File Edit Run Compile Project Options Debug Break/watch
Line 17 Col 23 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
clrscr();
switch( a = printf("I\t"), printf("Am\t") )
{
case 1: puts("Indian");break;
case 2: puts("Bharathiyudu");break;
case 3: puts("Hindustani");break;
default: puts("Human being");
}
printf("a=%d",a);
getch();
}
/* I am Hindustani a=2 */
F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

switch (a = p("I"\t), p("Am"\t))

a = 2, 3



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 17 Col 20 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
clrscr();
switch( a = * ( "I Like""ABCD"+7 ))
{
case 65: puts("Alia Bhatt");break;
case 66: puts("Pooja Hegde");break;
case 67: puts("Jhanvi Kapoor");break;
default: puts("Shradda Kapoor");
}
printf("a=%d",a);
getch();
}
/* Pooja Hegde a=66 */

F1-Help F5-Zoom F6-Switch F7-Trace F8-Step F9-Make F10-Menu NUM
```

switch(a = * (~~"I Like""ABCD"~~ + 7))

