

## No to text conversion:

**102 → One Zero Two**

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
#define p printf /* macro */
```

```
#define b break
```

```
#define c case
```

```
void main()
```

```
{
```

```
long n,m,rev=0; int r;
```

```
clrscr();
```

```
printf("Enter          n          value          ");
```

```
scanf("%ld",&n);if(n<0)p("-",n=-n); m=n;
```

```
while(n!=0) { r=n%10; rev=rev*10+r;n/=10;} /*  
rev */
```

```
do
{
switch(rev%10)
{
c 0: p("Zero");b;
c 1: p("One");b;
c 2: p("Two");b;
c 3: p("Three");b;
c 4: p("Four");b;
c 5: p("Five");b;
c 6: p("Six");b;
c 7: p("Seven");b;
c 8: p("Eight");b;
c 9: p("Nine");
}
```

```
rev/=10; p(" ");  
}while(rev!=0);  
while(m!=0 && m%10==0) p("Zero ",m/=10);  
getch();  
}
```

Enter n value -12003400

-One Two Zero Zero Three Four Zero Zero

Activate Windows  
Go to PC settings to activate Windows.

2:40 PM  
13-Sep-23

```
m=n;
while(m!=0) /* rev */{
r=m%10; rev=rev*10+r;m/=10;
}

do
{
switch(rev%10)
{
case 0: p("Zero");b;
case 1: p("One");b; ✓
case 2: p("Two");b;
case 9: p("Nine");}
rev/=10; while(rev!=0);
```

$$\frac{n}{102} \rightarrow \frac{rev}{204 \div 10 = 1 \text{ one}}$$

$$24 \div 10 = 2 \text{ zero}$$

$$7 \div 10 = 7 \text{ Two}$$

$$\frac{m}{100 \div 10 = 0}$$

one Zero Zero

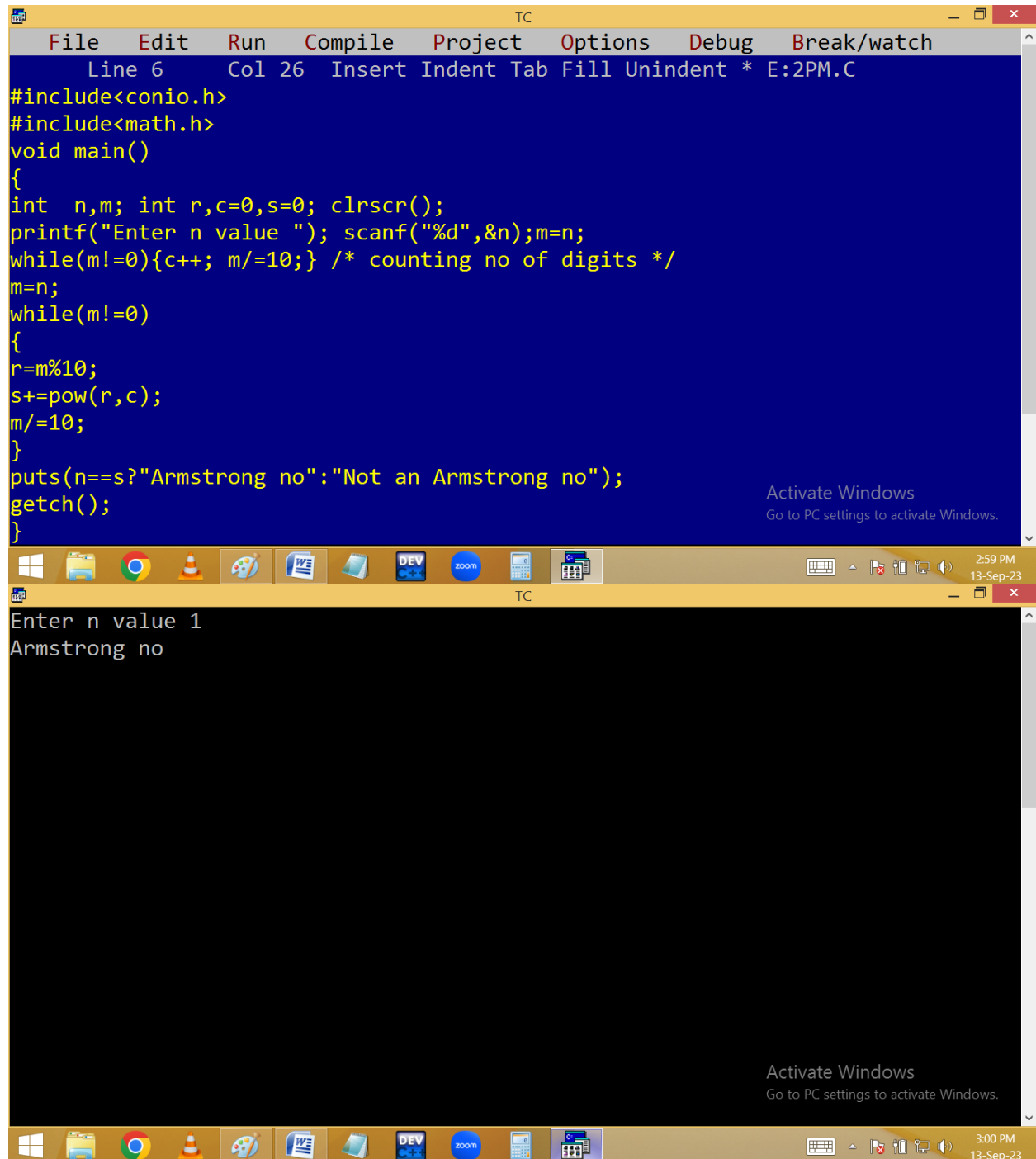
## Armstrong no.

**1 to 9, 153, 370, 371, 407, 1634, 8208,...**

**9 is a 1 digit no  $\rightarrow 9^1 = 9$**

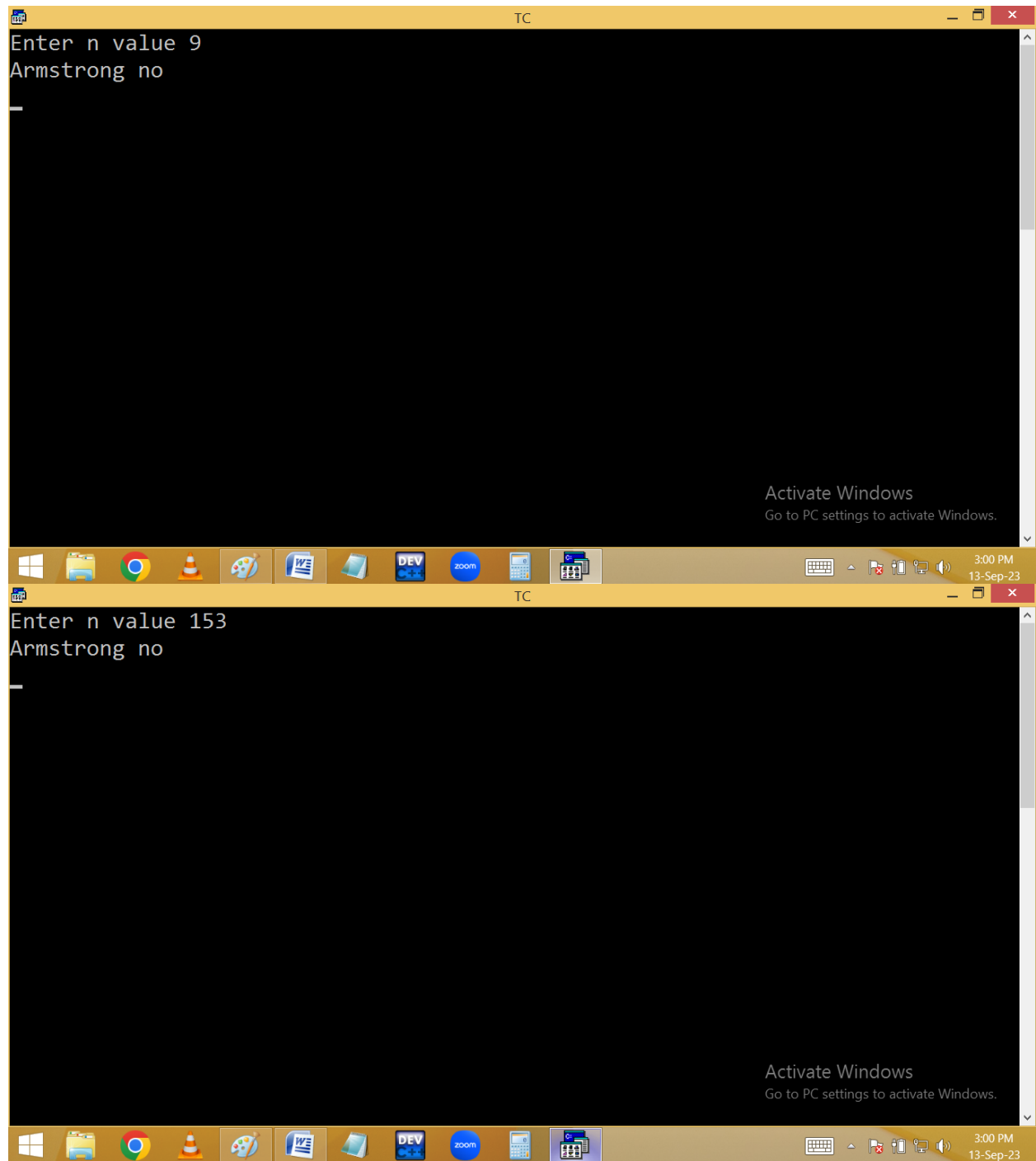
153 is 3 digit no  $\rightarrow 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$

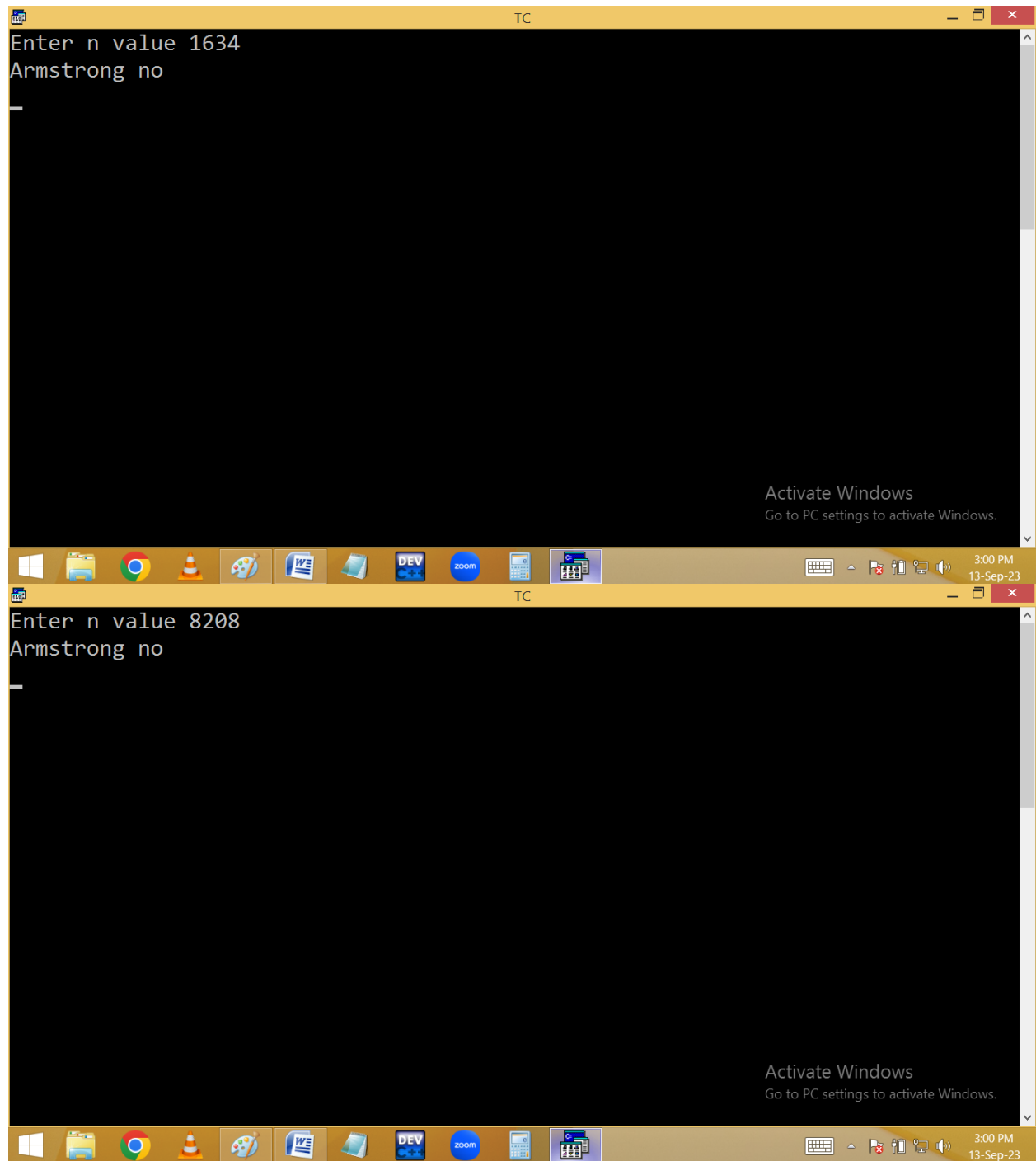
1634 is 4 digit no  $\rightarrow 1^4 + 6^4 + 3^4 + 4^4 = 1634$

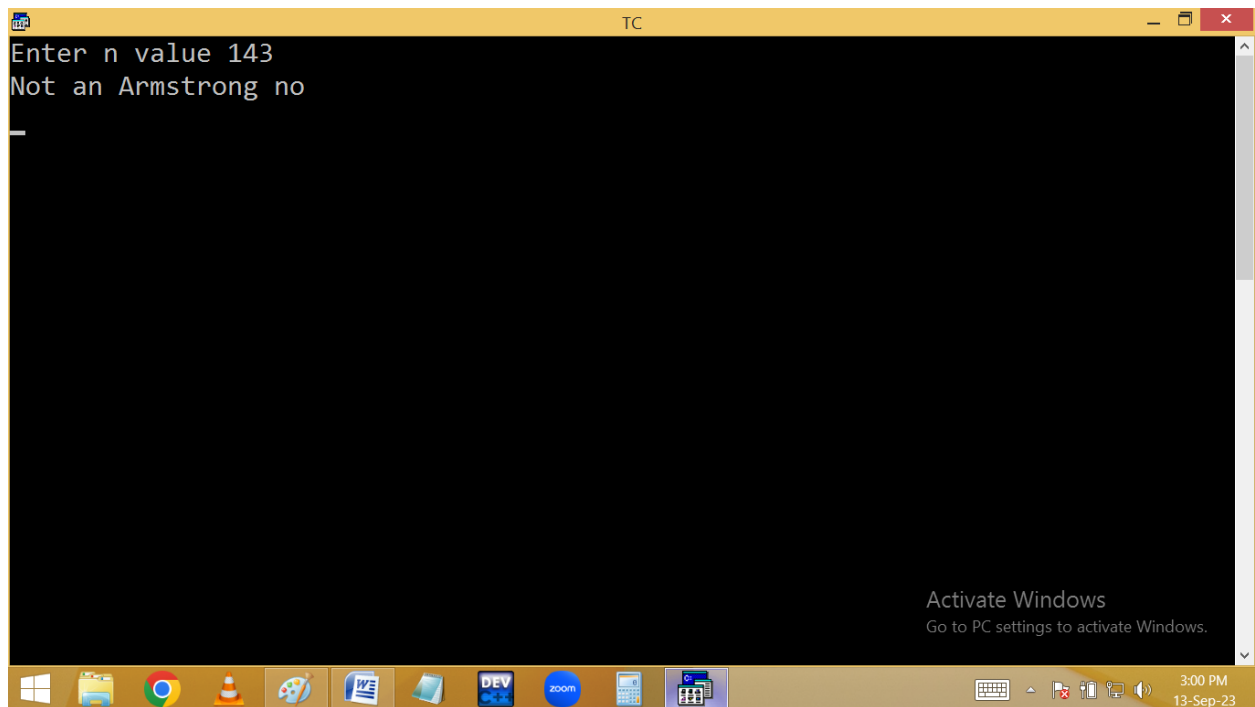
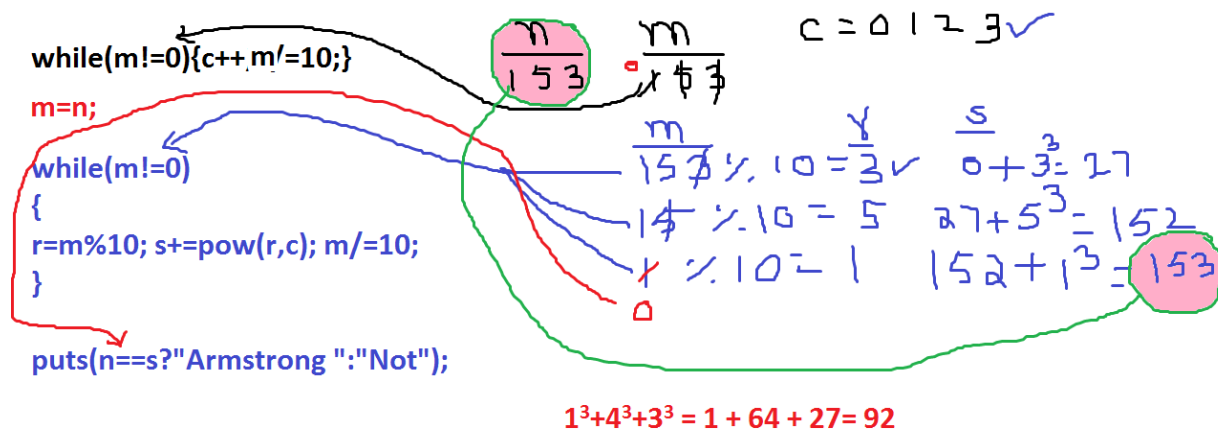


```
File Edit Run Compile Project Options Debug Break/watch
Line 6 Col 26 Insert Indent Tab Fill Unindent * E:2PM.C
#include<conio.h>
#include<math.h>
void main()
{
int n,m; int r,c=0,s=0; clrscr();
printf("Enter n value "); scanf("%d",&n);m=n;
while(m!=0){c++; m/=10;} /* counting no of digits */
m=n;
while(m!=0)
{
r=m%10;
s+=pow(r,c);
m/=10;
}
puts(n==s?"Armstrong no":"Not an Armstrong no");
getch();
}
```

Enter n value 1  
Armstrong no







## for loop:

It is an entry control loop.

for is a keyword.



**It is also used to repeat a program several times based on a condition.**

**When compared with while and do while, for loop is looking to be smart. In for it is compulsory to maintain two semicolons.**

**For works without condition also and default condition is always 1 i.e. true.**

**Generally for loop is having 3 expressions.**

- 1. Initialization**
- 2. Test condition / expression**
- 3. Increment/decrement / updation**

**At first entry of for loop the initialization part is executed and later the test condition is checked. If the condition is true then the for block statements are executed. After completion of the block,**

**the increment or decrement part is executed. Later once again the test condition is evaluated. If it is true then once again for block statements are executed. Like this the process is continued until the condition becomes false. Here the initialization part is executed only once, at the time of loop beginning.**

**It is mandatory to maintain 2 semicolon ( ; ) in a for loop.**

**If the for loop is having more than three expressions, it is mandatory to separate the expressions with , separator.**

**If the for loop is having less than three expressions, then leave the expressions with empty semicolon.**

```

...;
...;
for( initialization; condition; incr / decr / update )
{
...;
...;
}
...;

```

```

for( exp; exp; exp )
{
}
for( exp, exp; exp; exp, exp )
{
}
for ( ; exp ; )
{
}
for( ; ; )
{
}

```

**Eg:** printing given table.

Eg: 5<sup>th</sup> table

5\*1=5

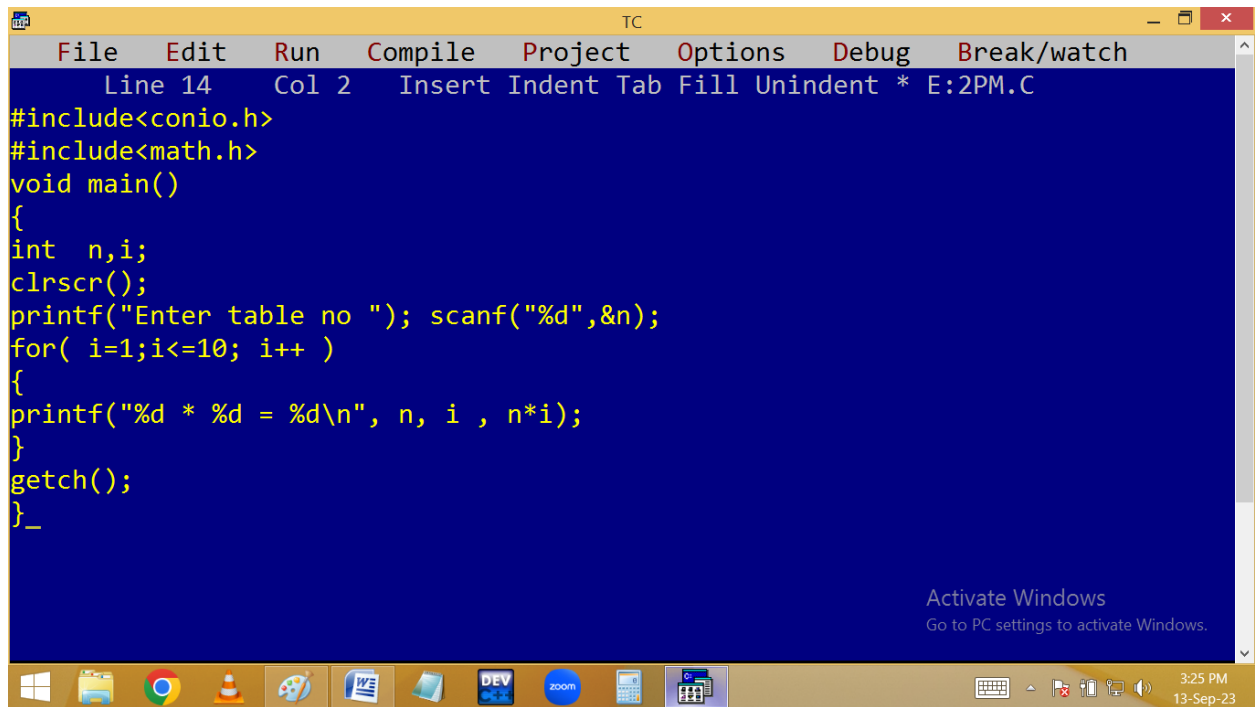
5\*2=10

5\*3=15

...

...

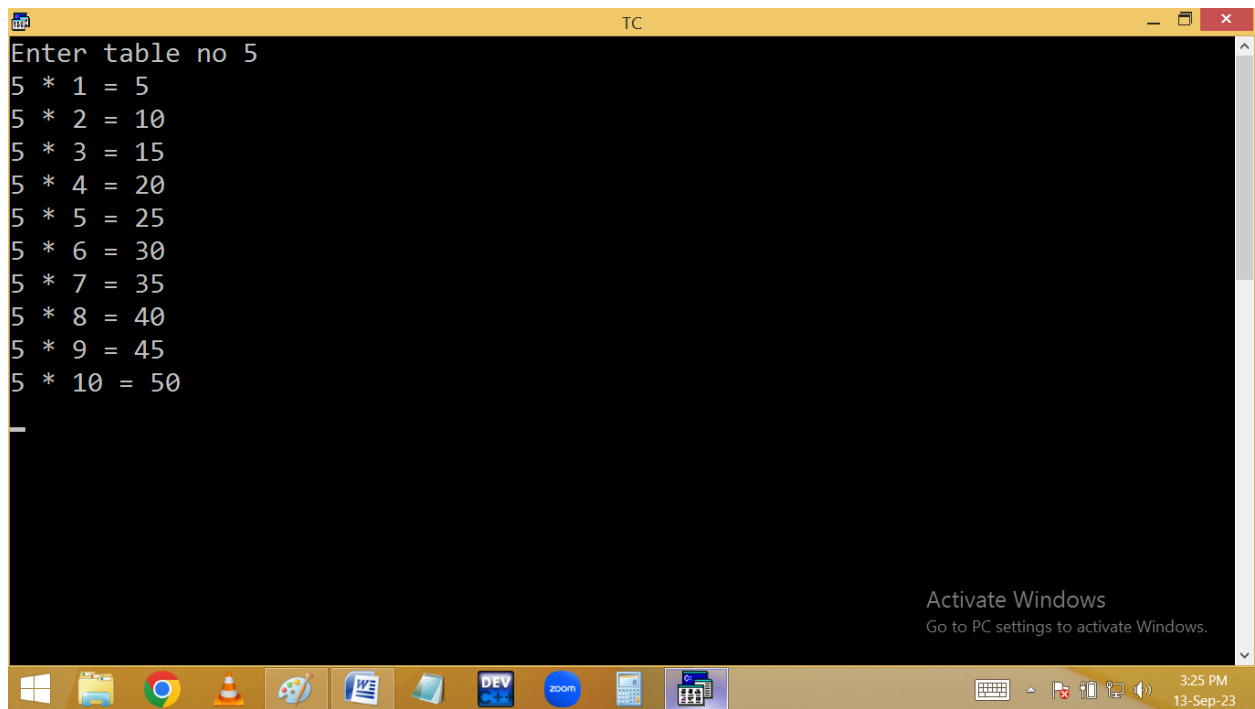
5\*10=50



The screenshot shows the Turbo C++ (TC) IDE with a yellow title bar and menu bar. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 14 Col 2 Insert Indent Tab Fill Unindent \* E:2PM.C'. The main editing area has a blue background and contains the following C code:

```
#include<conio.h>
#include<math.h>
void main()
{
int n,i;
clrscr();
printf("Enter table no "); scanf("%d",&n);
for( i=1;i<=10; i++ )
{
printf("%d * %d = %d\n", n, i , n*i);
}
getch();
}_
```

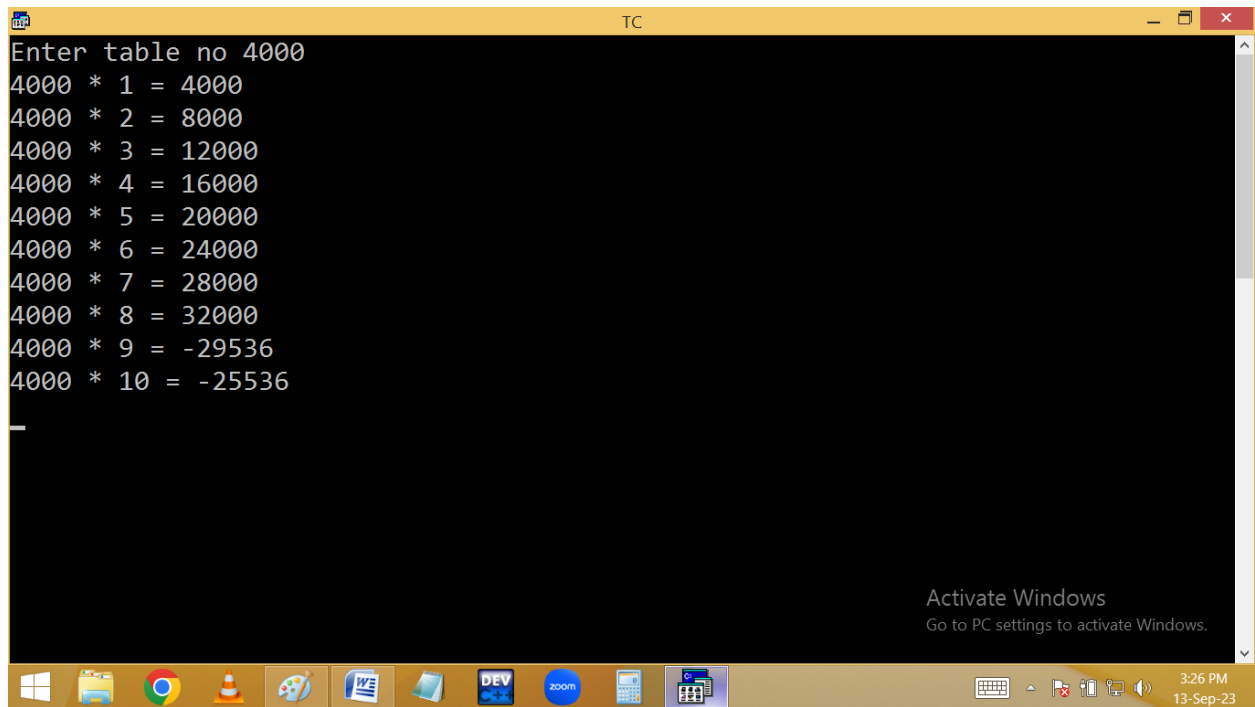
An 'Activate Windows' watermark is visible in the bottom right corner of the IDE window. The Windows taskbar at the bottom shows various icons including File Explorer, Chrome, VLC, Paint, Word, and several utility icons. The system clock shows 3:25 PM on 13-Sep-23.



The screenshot shows the same Turbo C++ IDE window after execution. The output is displayed in the main editing area on a black background with white text:

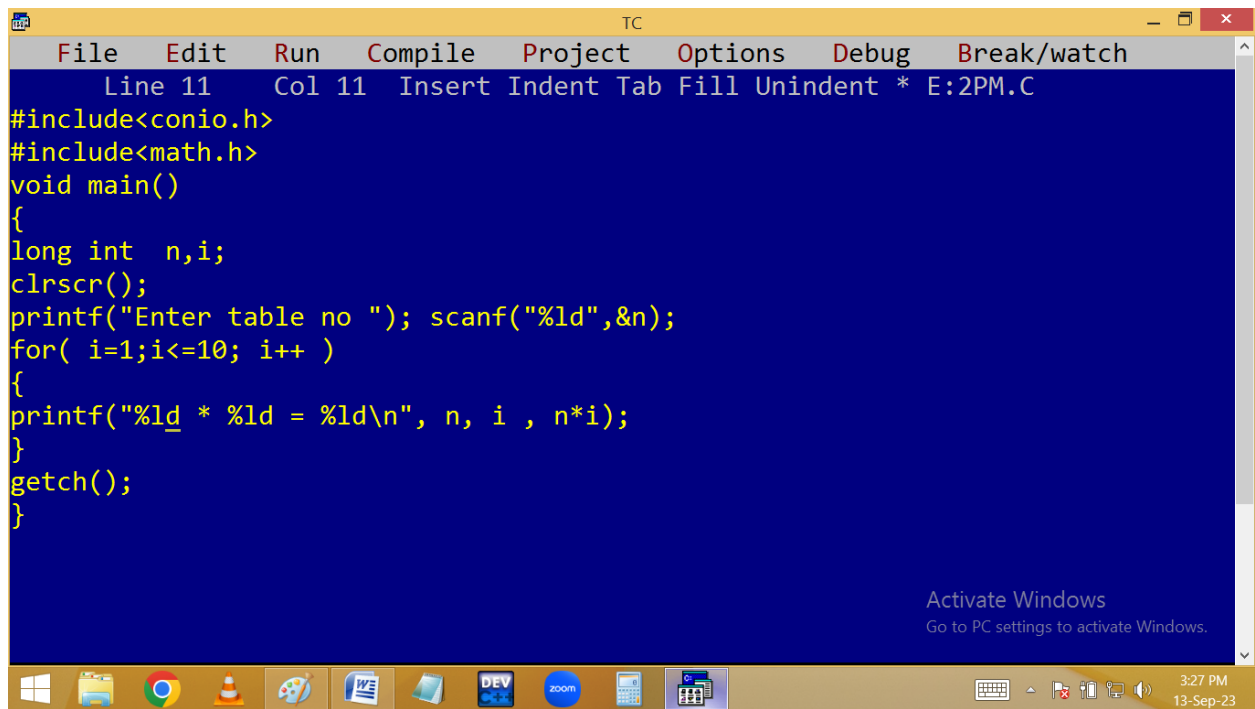
```
Enter table no 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

The 'Activate Windows' watermark is still present in the bottom right corner. The Windows taskbar at the bottom remains the same, showing the same icons and system clock (3:25 PM, 13-Sep-23).

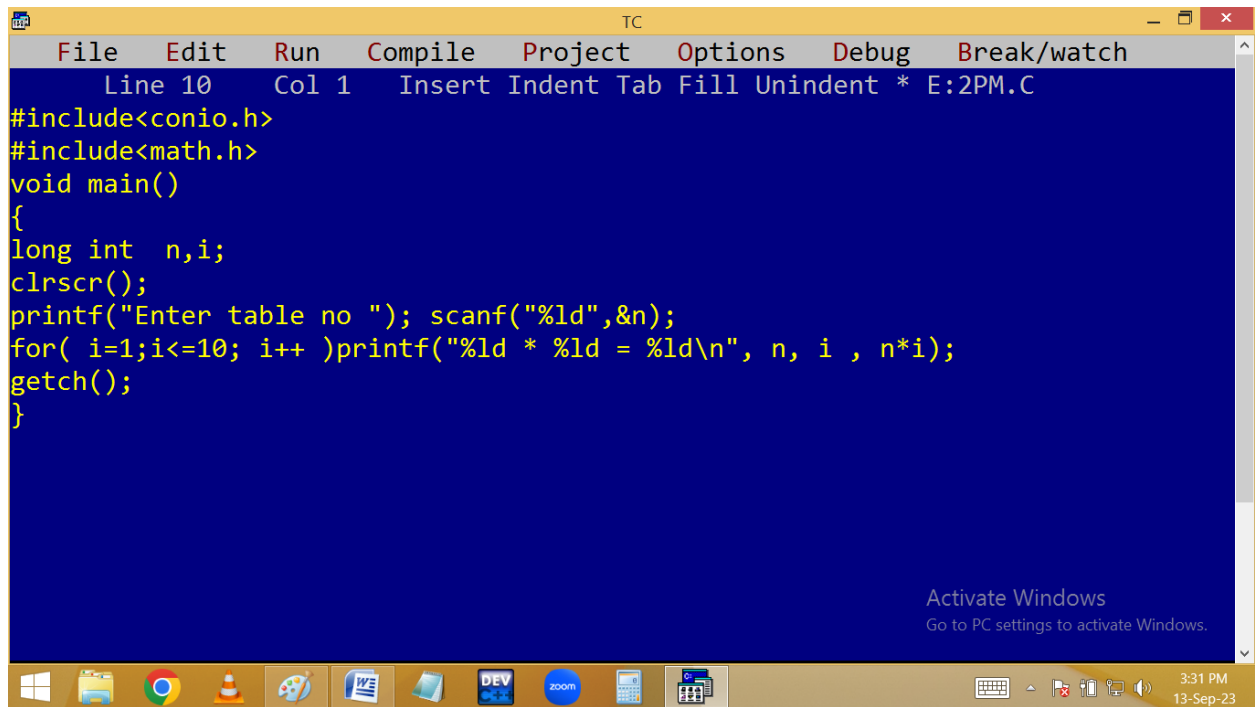


```
TC
Enter table no 4000
4000 * 1 = 4000
4000 * 2 = 8000
4000 * 3 = 12000
4000 * 4 = 16000
4000 * 5 = 20000
4000 * 6 = 24000
4000 * 7 = 28000
4000 * 8 = 32000
4000 * 9 = -29536
4000 * 10 = -25536

Activate Windows
Go to PC settings to activate Windows.
```



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 11 Insert Indent Tab Fill Unindent * E:2PM.C
#include<conio.h>
#include<math.h>
void main()
{
long int n,i;
clrscr();
printf("Enter table no "); scanf("%ld",&n);
for( i=1;i<=10; i++ )
{
printf("%ld * %ld = %ld\\n", n, i , n*i);
}
getch();
}
```



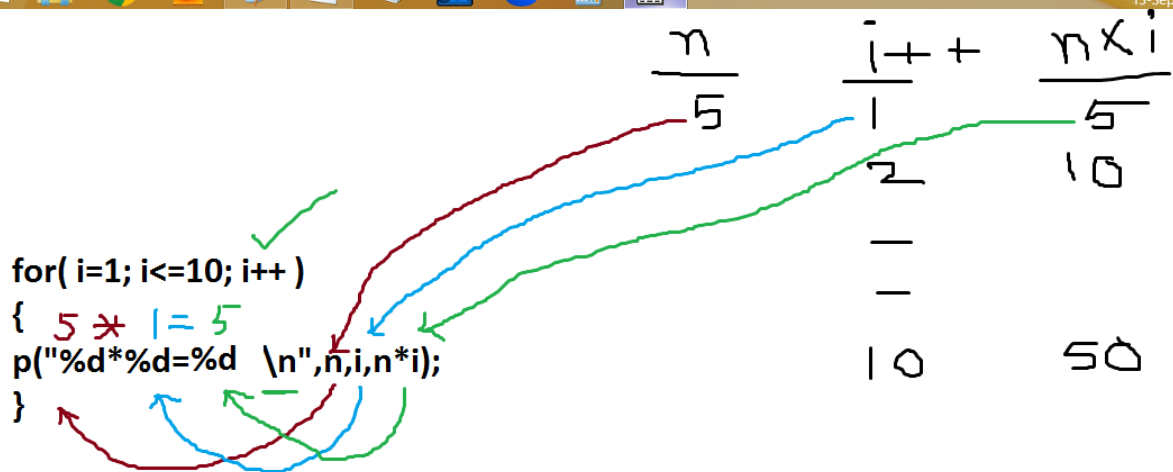
The image shows a screenshot of a Turbo C++ (TC) IDE window. The window has a yellow title bar with the text "TC" and standard window controls. Below the title bar is a menu bar with the following options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. Under the "Edit" menu, a submenu is visible with the options: Line 10, Col 1, Insert, Indent, Tab, Fill, Unindent, and \*. The main editing area has a dark blue background with yellow text. The code displayed is a C program that prompts the user to enter a table number and then prints the multiplication table for that number. The code is as follows:

```
#include<conio.h>
#include<math.h>
void main()
{
    long int  n,i;
    clrscr();
    printf("Enter table no "); scanf("%ld",&n);
    for( i=1;i<=10; i++ )printf("%ld * %ld = %ld\n", n, i , n*i);
    getch();
}
```

At the bottom of the window, there is a taskbar with several icons: Windows Start button, File Explorer, Google Chrome, VLC media player, Paint, Word, a folder icon, DEV C++, Zoom, a calculator, and a task manager icon. On the right side of the taskbar, there is a system tray with icons for keyboard, volume, and network, along with the system clock showing 3:31 PM on 13-Sep-23. An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.

```
TC
Enter table no 4000000
4000000 * 1 = 4000000
4000000 * 2 = 8000000
4000000 * 3 = 12000000
4000000 * 4 = 16000000
4000000 * 5 = 20000000
4000000 * 6 = 24000000
4000000 * 7 = 28000000
4000000 * 8 = 32000000
4000000 * 9 = 36000000
4000000 * 10 = 40000000

Activate Windows
Go to PC settings to activate Windows.
```

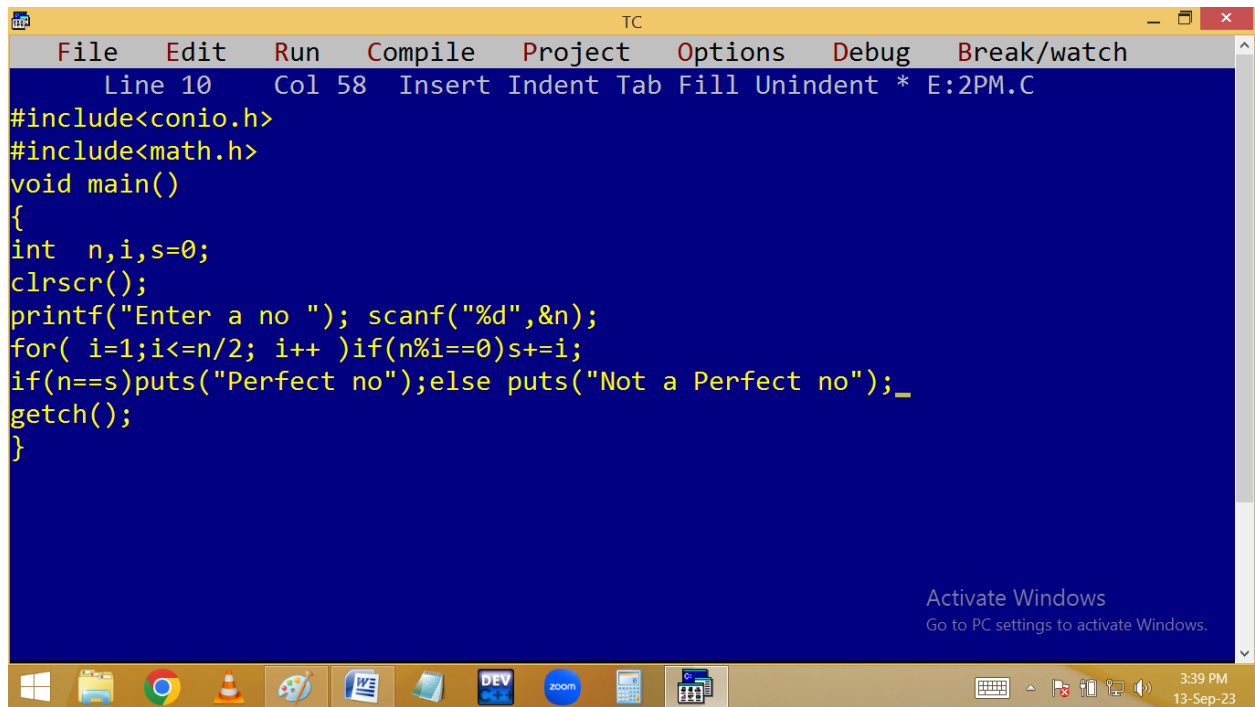


**Eg. Finding perfect no or not.**

**Factors sum is equal to given no.**

**6** factors  $1+2+3=6$

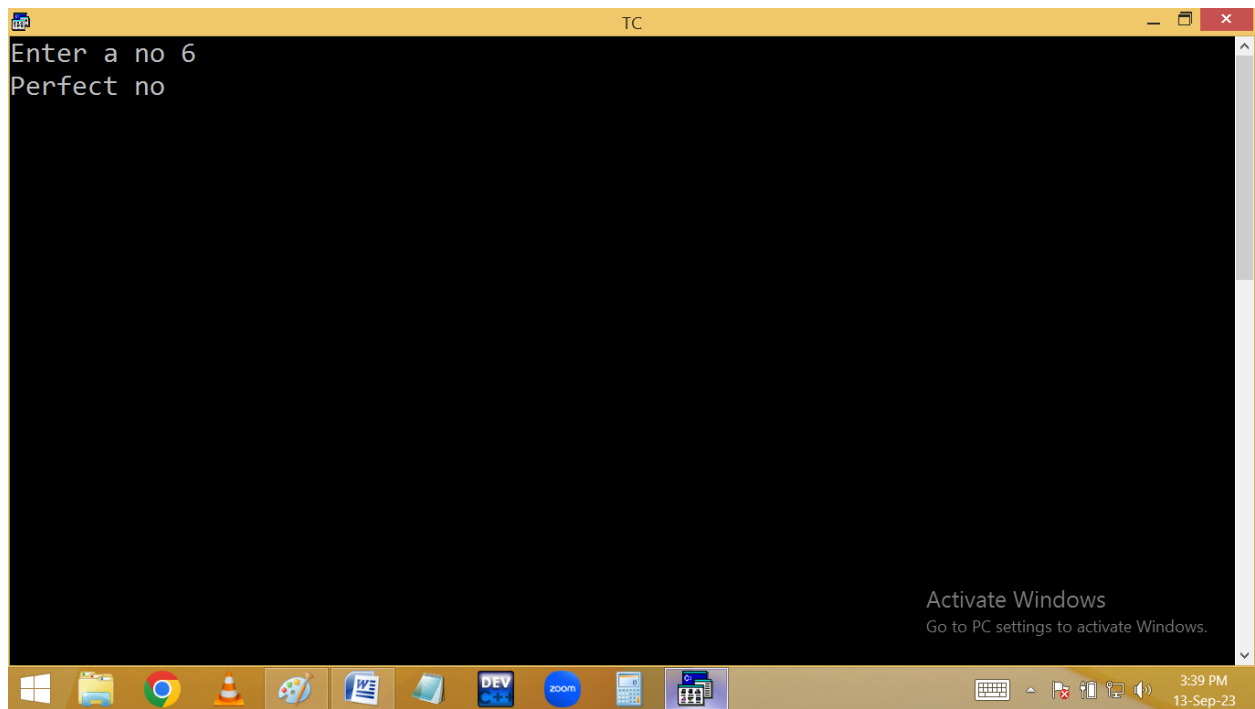
**28** factors  $1+2+4+7+14=28$



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 58 Insert Indent Tab Fill Unindent * E:2PM.C
#include<conio.h>
#include<math.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for( i=1;i<=n/2; i++ )if(n%i==0)s+=i;
if(n==s)puts("Perfect no");else puts("Not a Perfect no");_
getch();
}
```

Activate Windows  
Go to PC settings to activate Windows.

3:39 PM  
13-Sep-23

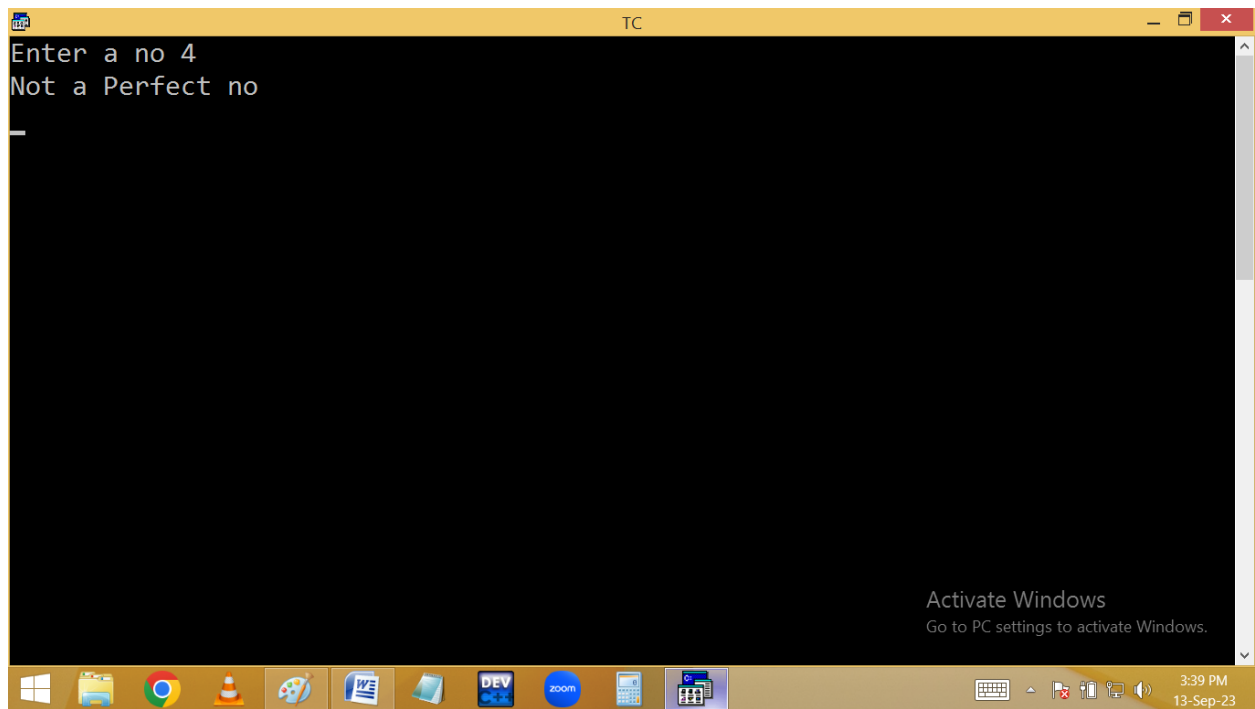
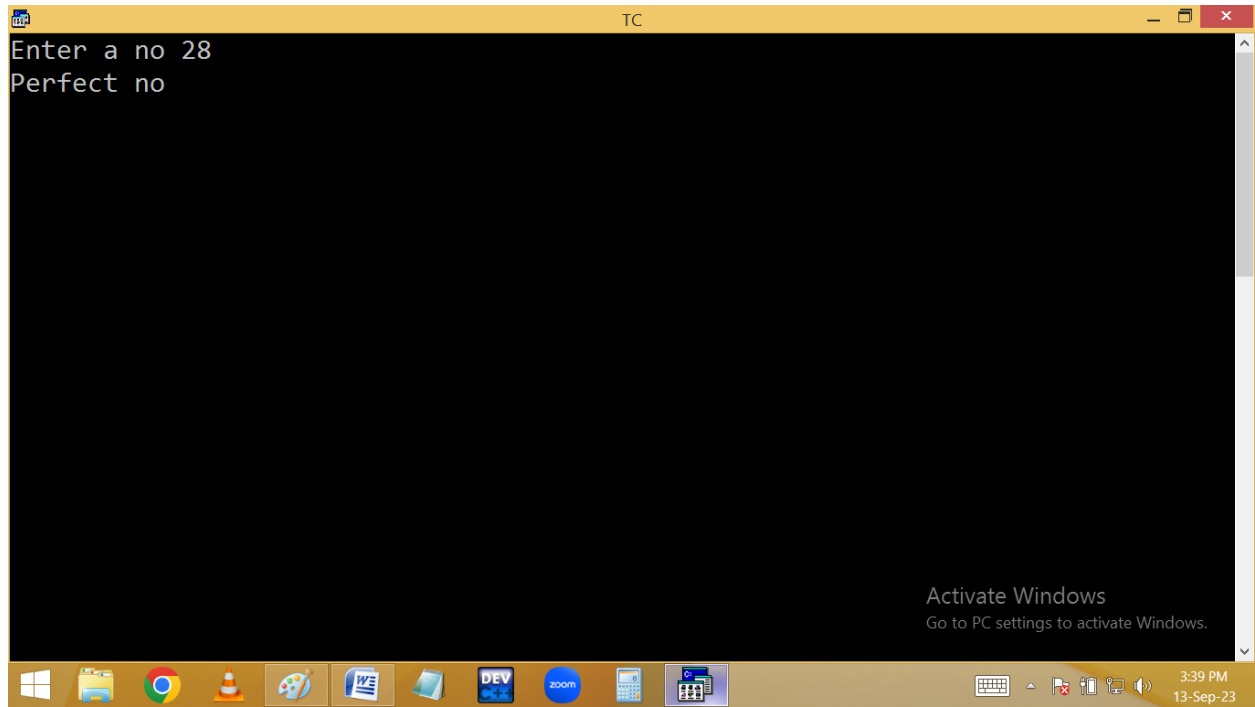


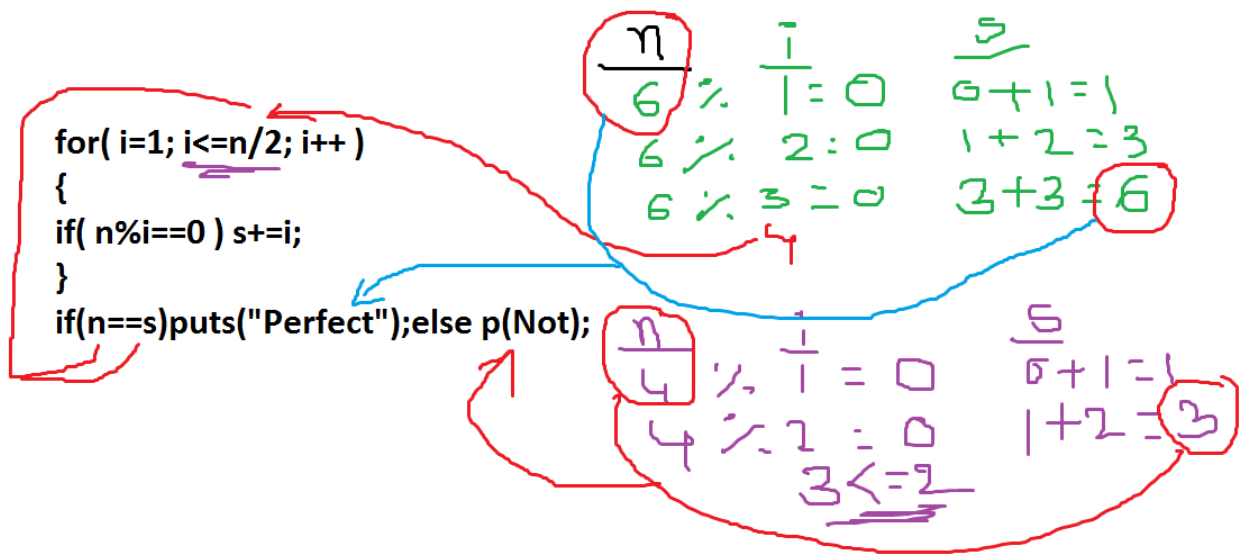
```
TC
Enter a no 6
Perfect no
```

Activate Windows  
Go to PC settings to activate Windows.

3:39 PM  
13-Sep-23

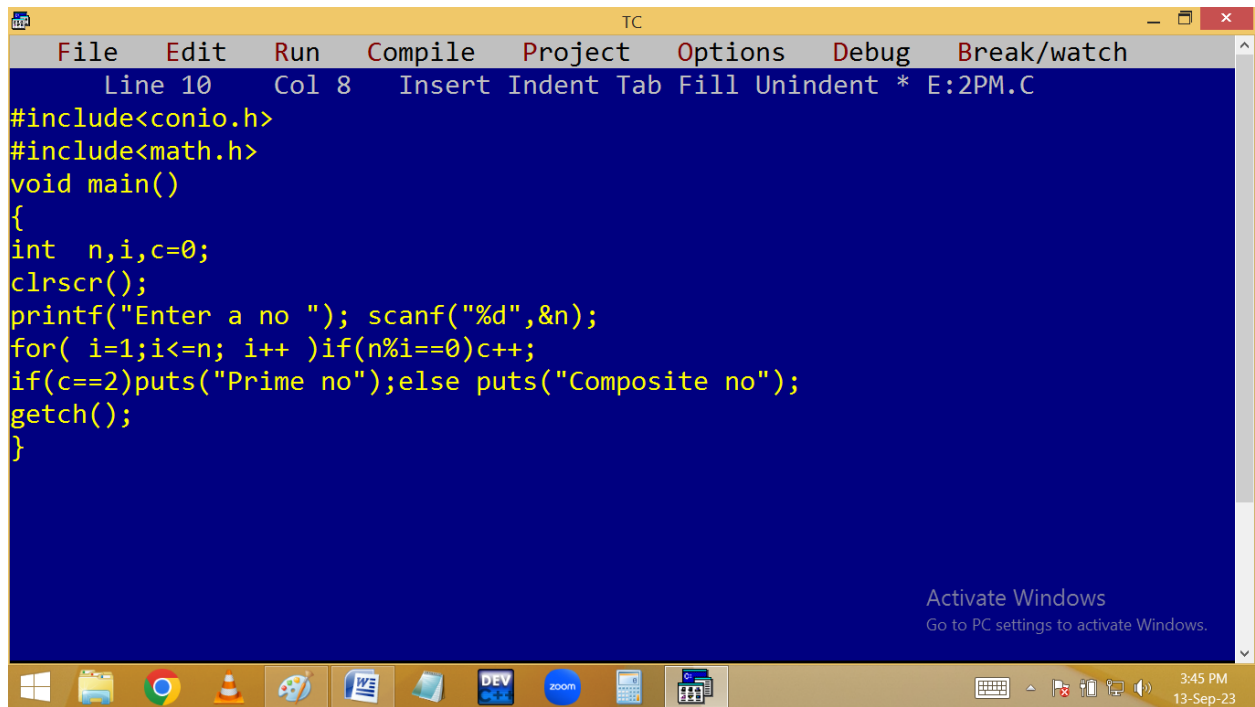






**Prime no**: the no having two factors is called prime or  
The no divisible with 1 and itself only [ except 1 ].

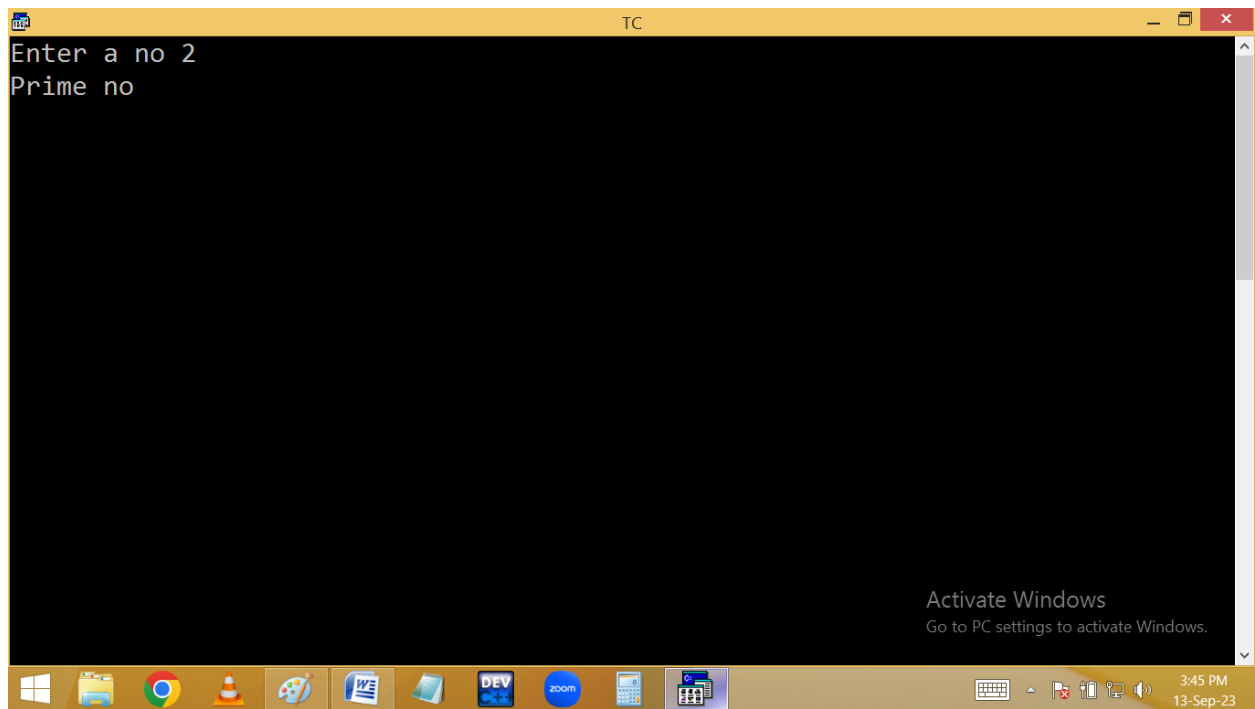
$2 \div 1 = 0$	$3 \div 1 = 0$	$4 \div 1 = 0$
$2 \div 2 = 0$	$3 \div 2 = 1$	$4 \div 2 = 0$
$2 \div 2 = 0$	$3 \div 3 = 0$	$4 \div 4 = 0$
✓	✓	X



The screenshot shows the Turbo C++ (TC) IDE with a yellow title bar and a menu bar containing File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 10 Col 8 Insert Indent Tab Fill Unindent \* E:2PM.C'. The main editing area has a blue background and contains the following C code:

```
#include<conio.h>
#include<math.h>
void main()
{
int n,i,c=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for( i=1;i<=n; i++ )if(n%i==0)c++;
if(c==2)puts("Prime no");else puts("Composite no");
getch();
}
```

An 'Activate Windows' watermark is visible in the bottom right corner of the IDE window. The Windows taskbar at the bottom shows various application icons and the system clock displaying 3:45 PM on 13-Sep-23.



The screenshot shows the same Turbo C++ IDE window, but the main editing area now has a black background, indicating the program has been executed. The output displayed is:

```
Enter a no 2
Prime no
```

The 'Activate Windows' watermark and the Windows taskbar with the system clock (3:45 PM, 13-Sep-23) are also visible in this screenshot.

