

Printing given table?

Eg: 9th table

$$9 * \mathbf{1} = 9$$

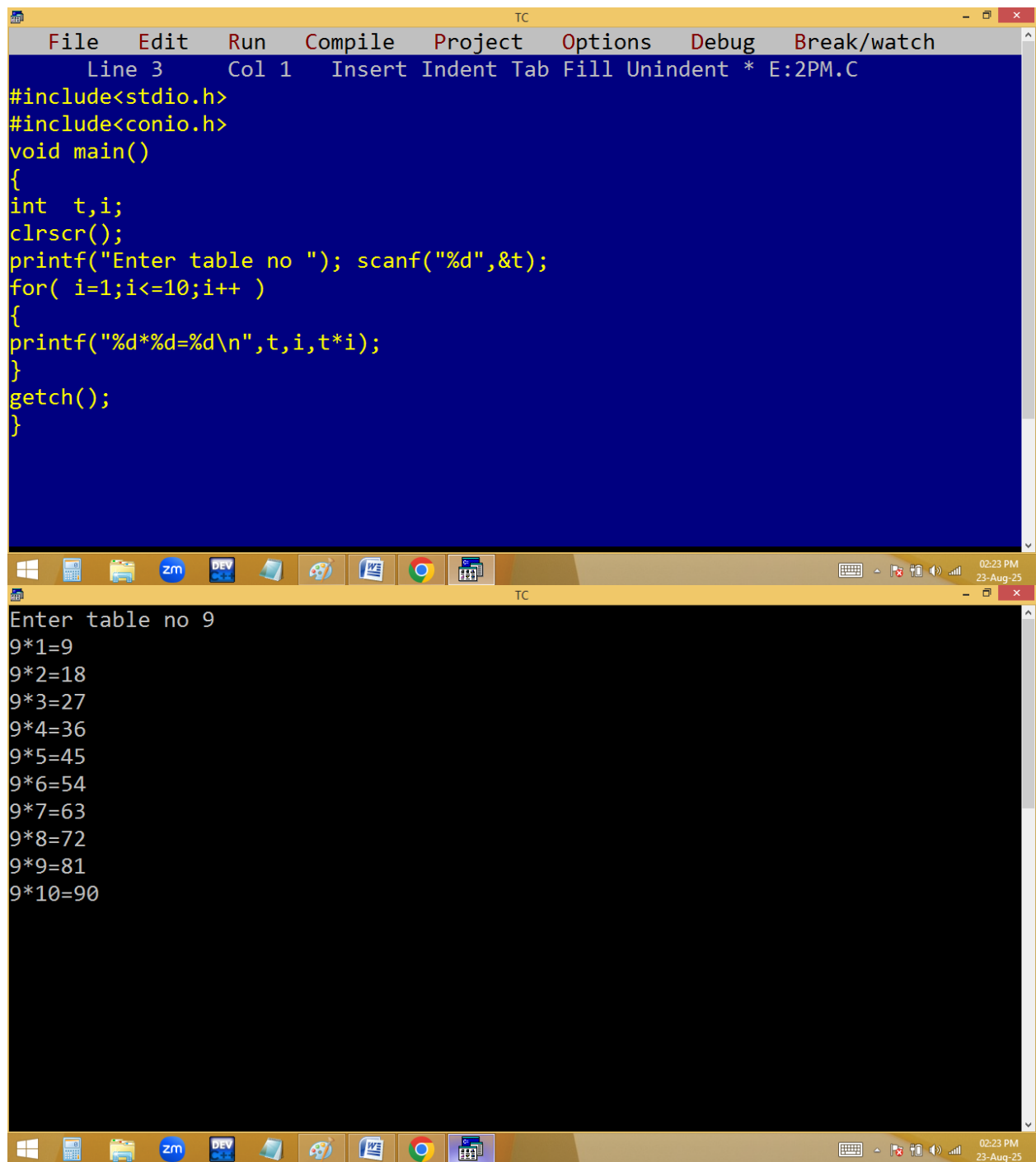
$$9 * 2 = 18$$

$$9 * 3 = 27$$

...

...

$$9 * \mathbf{10} = 90$$



The image displays two screenshots of the Turbo C++ (TC) IDE. The top screenshot shows the source code of a C program designed to calculate multiplication tables. The code includes headers for `stdio.h` and `conio.h`, and defines a `main` function. Inside `main`, it declares variables `t` and `i`, clears the screen with `clrscr()`, prompts the user to enter a table number, and then uses a `for` loop to print the multiplication table for that number from 1 to 10. The bottom screenshot shows the program's execution. It prompts the user to enter a table number, and the user has entered 9. The program then outputs the multiplication table for 9, displaying results from `9*1=9` to `9*10=90`. The Windows taskbar at the bottom of both screenshots shows the time as 02:23 PM on 23-Aug-23.

```
File Edit Run Compile Project Options Debug Break/watch
Line 3 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int t,i;
clrscr();
printf("Enter table no "); scanf("%d",&t);
for( i=1;i<=10;i++ )
{
printf("%d*%d=%d\n",t,i,t*i);
}
getch();
}
```

Enter table no 9

9*1=9
9*2=18
9*3=27
9*4=36
9*5=45
9*6=54
9*7=63
9*8=72
9*9=81
9*10=90

$$\frac{t}{9} \times \frac{i}{1} = \frac{t \times i}{9}$$

for(i=1; i<=10; i++)
 {
 9 * 1 = 9
 printf("%d * %d = %d\n", t, i, t*i);
 }

2
 3
 -
 -
 10 = 90

Print below series?

n=5 → 1+2+3+4+5=15

The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program in a blue editor window. The code calculates the sum of integers from 1 to n. The bottom screenshot shows the program's execution in a black console window, where the user has entered '5' and the program has outputted '1+2+3+4+5=15'. Both windows have a yellow title bar and a menu bar with options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The Windows taskbar at the bottom includes icons for various applications and the system clock showing 02:29 PM on 23-Aug-25.

```
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 19 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
printf("%d+",i,s+=i);
}
printf("\b=%d",s);
getch();
}
```

Enter the no 5
1+2+3+4+5=15

```

    ✓      ✓
for( i=1; i<= 5 ;i++ )
{
    printf("%d + ", i, s+=i );
}      1 + 2 + 3 + 4 + 5 = 15
      ↗ ↘
p("\b=%d",s);

```

<u>i</u>		<u>S</u>
1	+	0 = 1
2	+	1 = 3
3	+	3 = 6
4	+	6 = 10
5	+	10 = 15

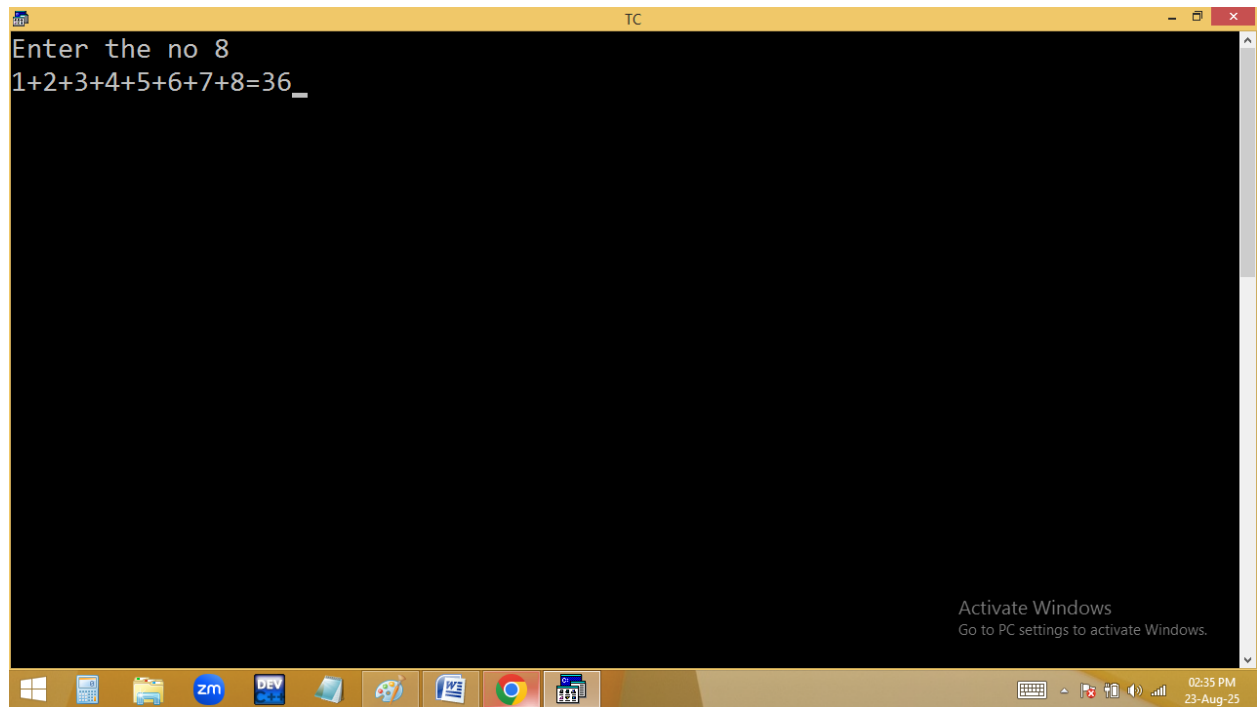
1 +

Without using \b:

The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program in a blue editor window. The code includes headers for `stdio.h` and `conio.h`, and defines a `main` function. Inside `main`, it declares variables `n`, `i`, and `s` (initialized to 0). It calls `clrscr()` to clear the screen, then prompts the user to "Enter the no " and reads the input into `n` using `scanf`. A `for` loop iterates from `i=1` to `i=n`, adding each `i` to `s`. After the loop, it prints the sum `s` using `printf` and waits for a key press with `getch()`. The bottom screenshot shows the same IDE with the program executed. The output window displays "Enter the no 5" followed by "1+2+3+4+5=15". Both screenshots show the Windows taskbar at the bottom with various application icons and a system clock indicating 02:34 PM on 23-Aug-23. An "Activate Windows" watermark is visible in the bottom right corner of both IDE windows.

```
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
s+=i;
if(i<n)printf("%d+",i);else printf("%d=%d",i,s);
}
getch();
}
```

Enter the no 5
1+2+3+4+5=15



Print below series?

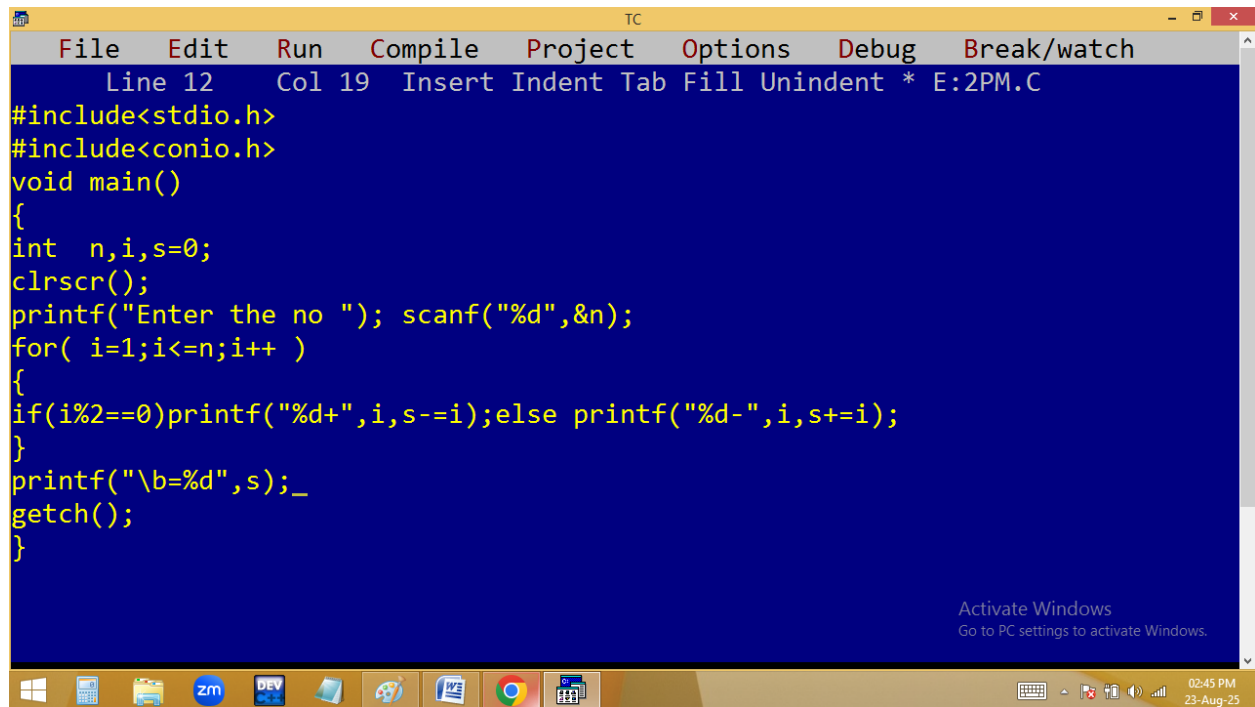
$$n=5 \rightarrow 1^2+2^2+3^2+4^2+5^2=55$$

```
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 58 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
s+=i*i;
if(i<n)printf("%d%c",i,253);else printf("%d%c=%d",i,253,s);
}
getch();
}
```

Enter the no 5
1²+2²+3²+4²+5²=55_

Print below series:

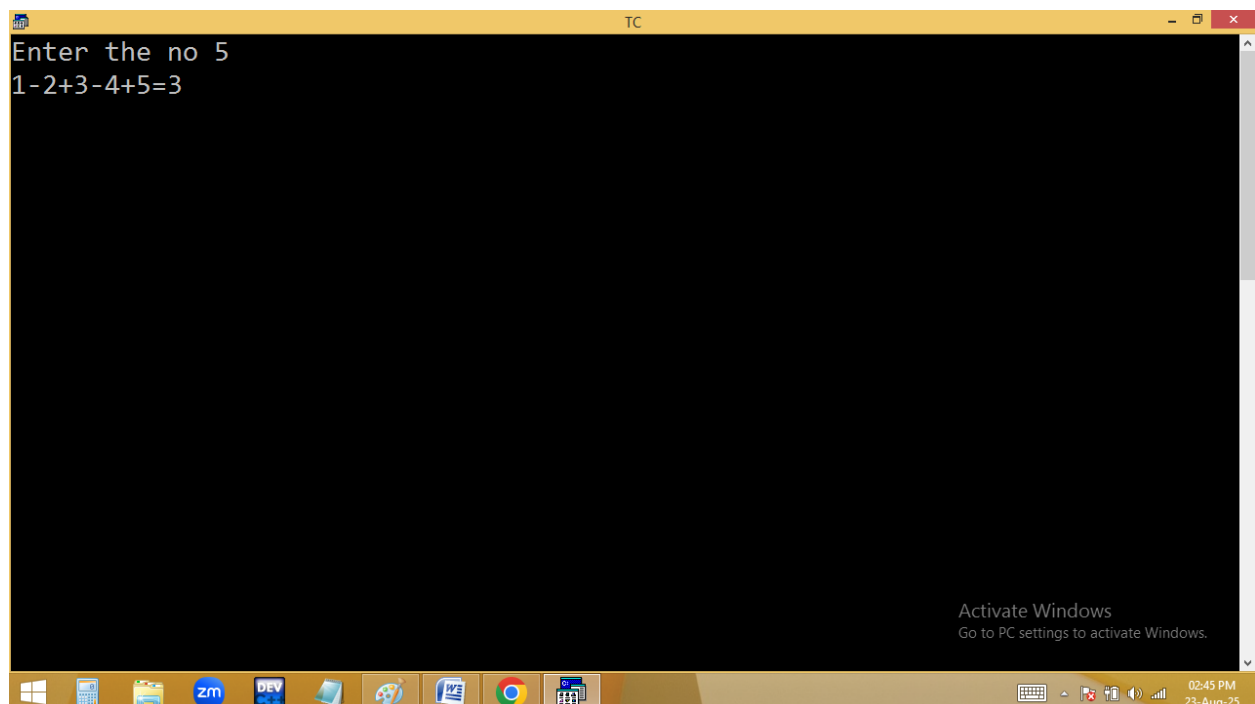
$n=5 \Rightarrow 1-2+3-4+5=3$



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 19 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
if(i%2==0)printf("%d+",i,s-=i);else printf("%d-",i,s+=i);
}
printf("\b=%d",s);_
getch();
}
```

Activate Windows
Go to PC settings to activate Windows.

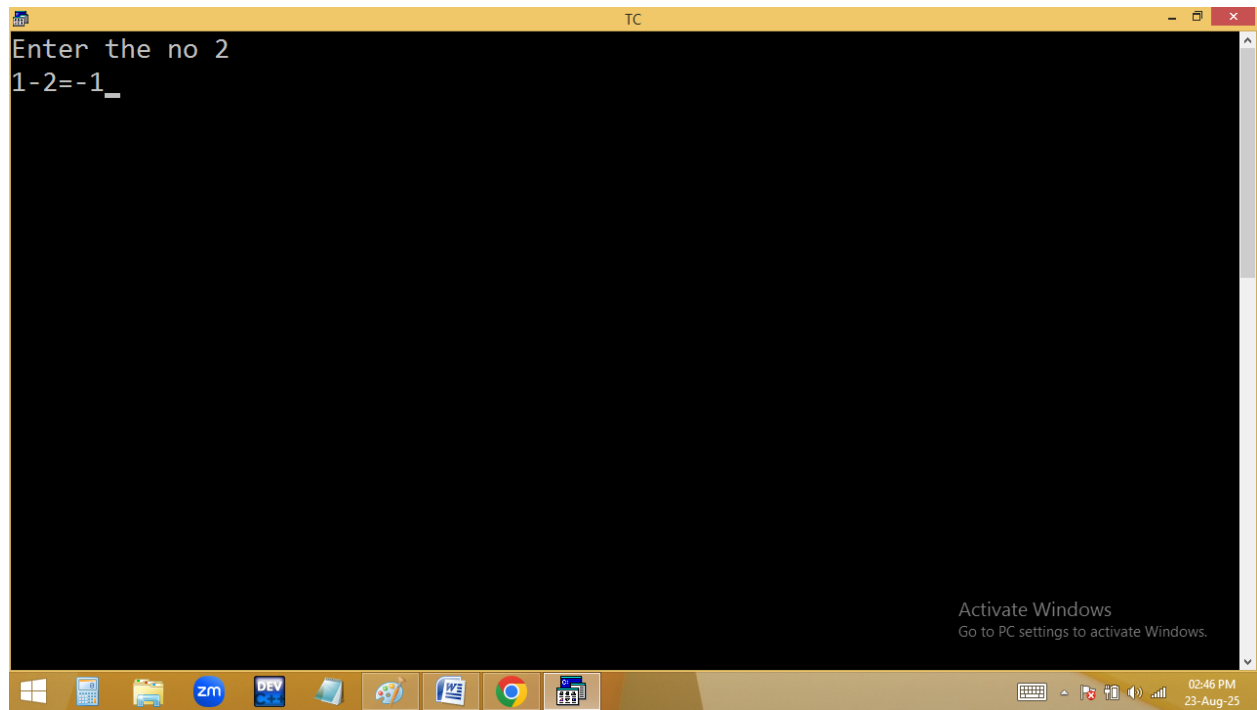
02:45 PM
23-Aug-25



```
TC
Enter the no 5
1-2+3-4+5=3
```

Activate Windows
Go to PC settings to activate Windows.

02:45 PM
23-Aug-25



```

Enter the no 10
1-2+3-4+5-6+7-8+9-10=-5

```

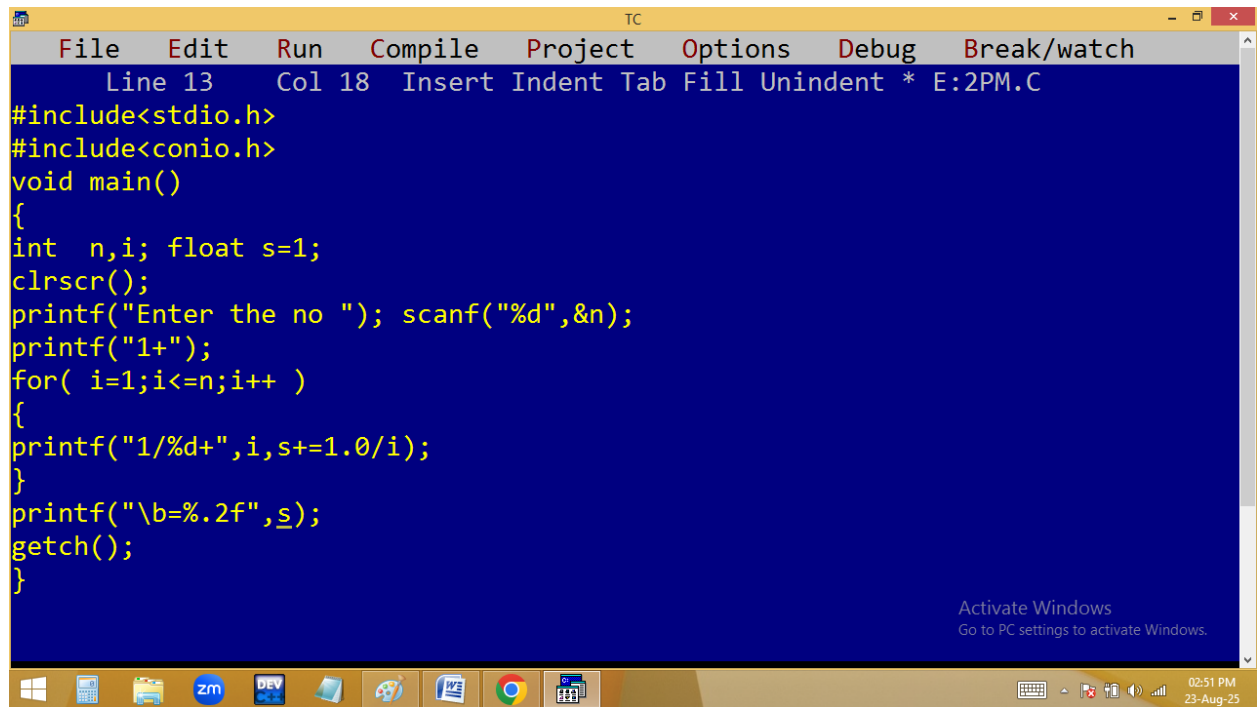
Activate Windows
Go to PC settings to activate Windows.

✓
 2+4+
 if(i%2==0) p("%d+",i,s+=i);
 else p("%d-",i,s+=i);
 1-3-5-
 p(s);

1-2+3-4+5
 S
 0+1=1
 1-2=-1
 -1+3=2
 2-4=-2
 -2+5=3 ✓
 1+3+5=9
 -2+-4=-6
 3

Print below **Harmonic** series:

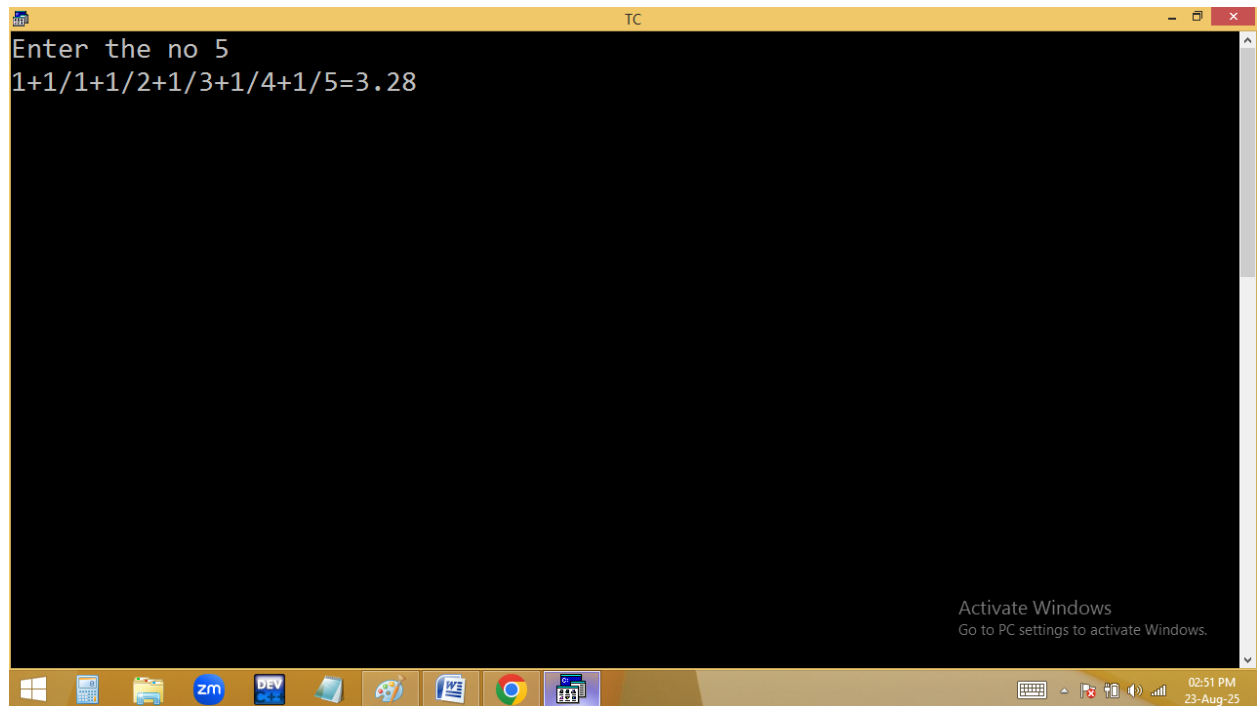
$$n=5 \rightarrow 1+1/1+1/2+1/3+1/4+1/5=3.28$$



The screenshot shows the Turbo C++ (TC) 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 18 Insert Indent Tab Fill Unindent * E:2PM.C'. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i; float s=1;
clrscr();
printf("Enter the no "); scanf("%d",&n);
printf("1+");
for( i=1;i<=n;i++ )
{
printf("1/%d+",i,s+=1.0/i);
}
printf("\nb=%.2f",s);
getch();
}
```

An 'Activate Windows' watermark is visible in the bottom right corner of the IDE window.



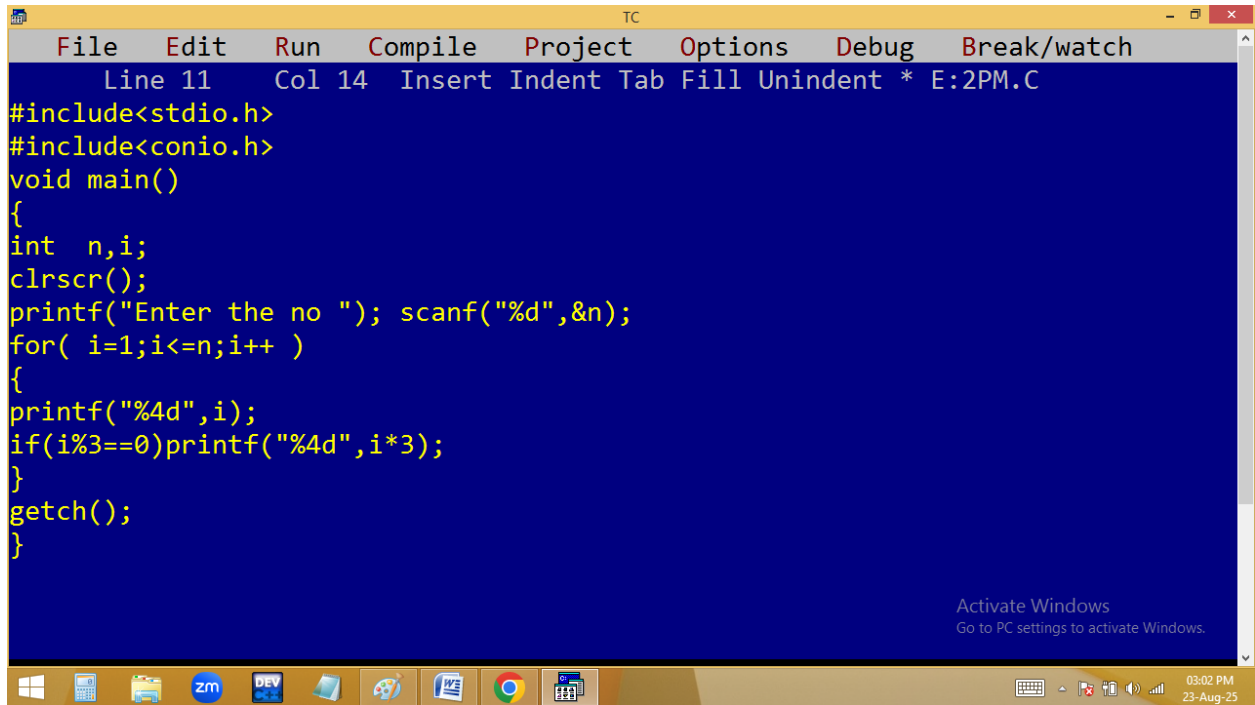
The screenshot shows the same Turbo C++ IDE window after execution. The output is displayed on a black background:

```
Enter the no 5
1+1/1+1/2+1/3+1/4+1/5=3.28
```

An 'Activate Windows' watermark is also present in the bottom right corner of the IDE window.

Print below series?

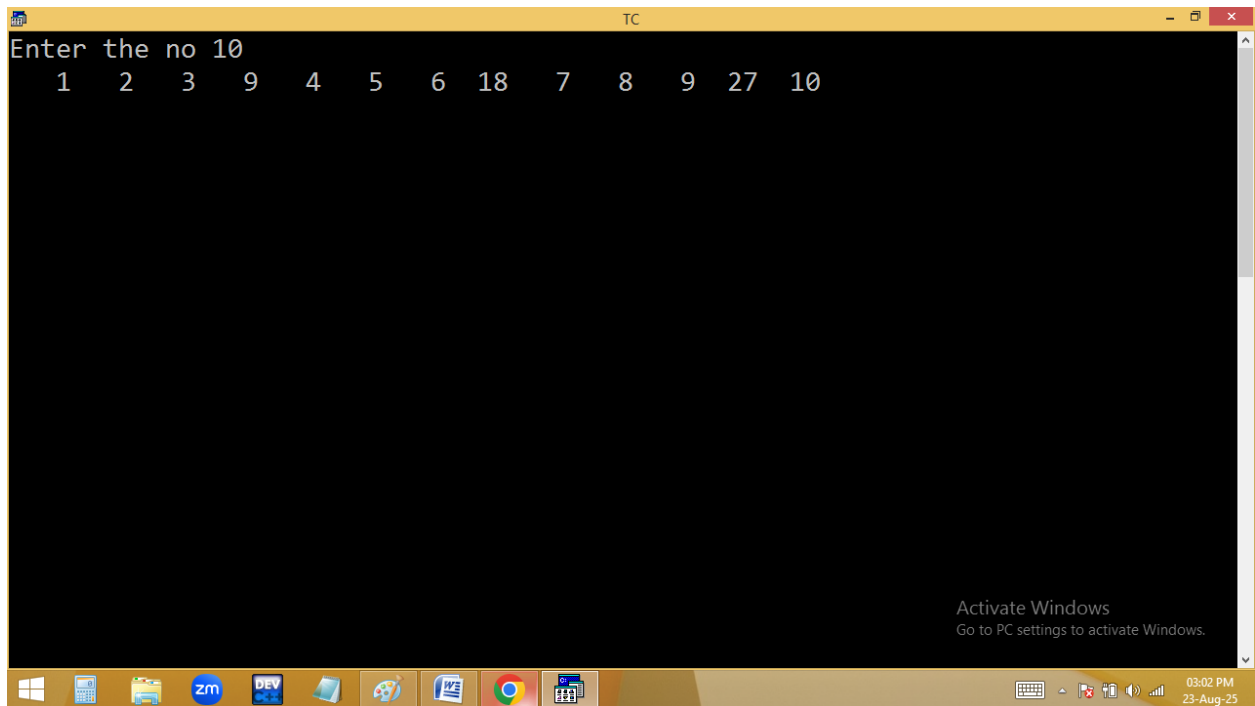
n=10 → 1 2 3 9 4 5 6 18 7 8 9 27 10



```
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 14 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
printf("%4d",i);
if(i%3==0)printf("%4d",i*3);
}
getch();
}
```

Activate Windows
Go to PC settings to activate Windows.

03:02 PM
23-Aug-25



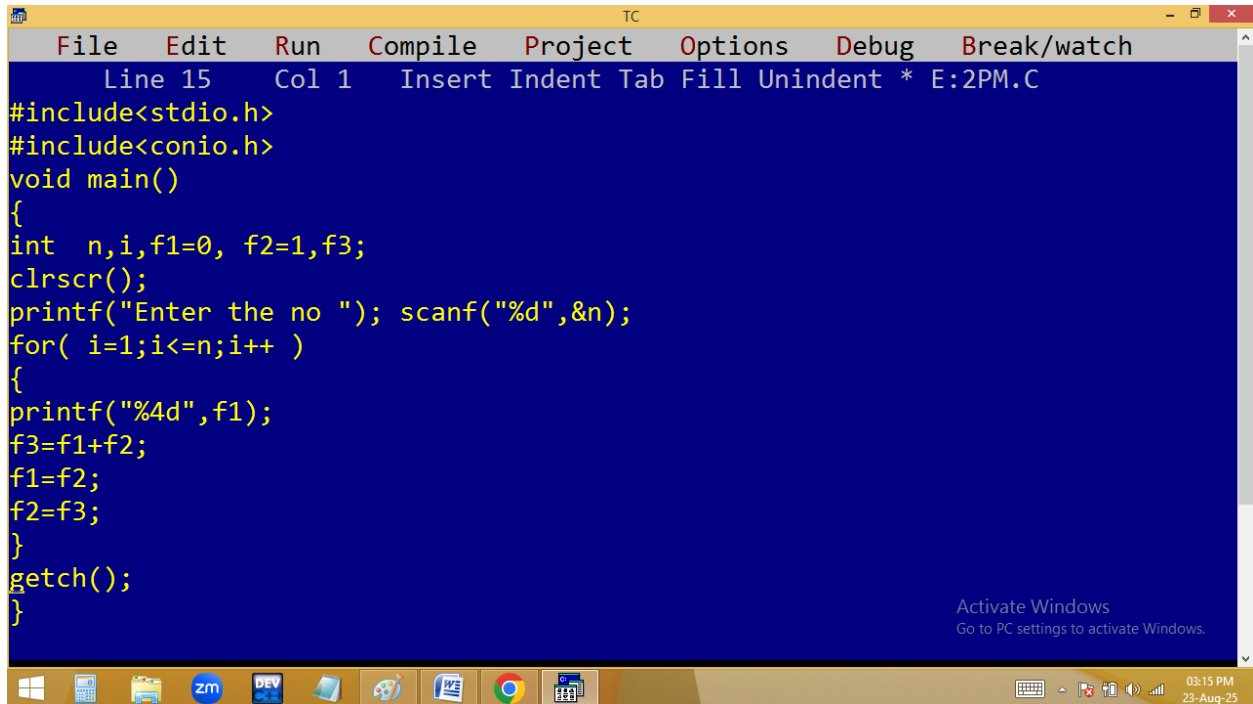
```
Enter the no 10
1 2 3 9 4 5 6 18 7 8 9 27 10
```

Activate Windows
Go to PC settings to activate Windows.

03:02 PM
23-Aug-25

Fibonacci series:

n=5 → 0 1 1 2 3



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 15 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,f1=0, f2=1,f3;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( i=1;i<=n;i++ )
{
printf("%4d",f1);
f3=f1+f2;
f1=f2;
f2=f3;
}
getch();
}
```

Activate Windows
Go to PC settings to activate Windows.

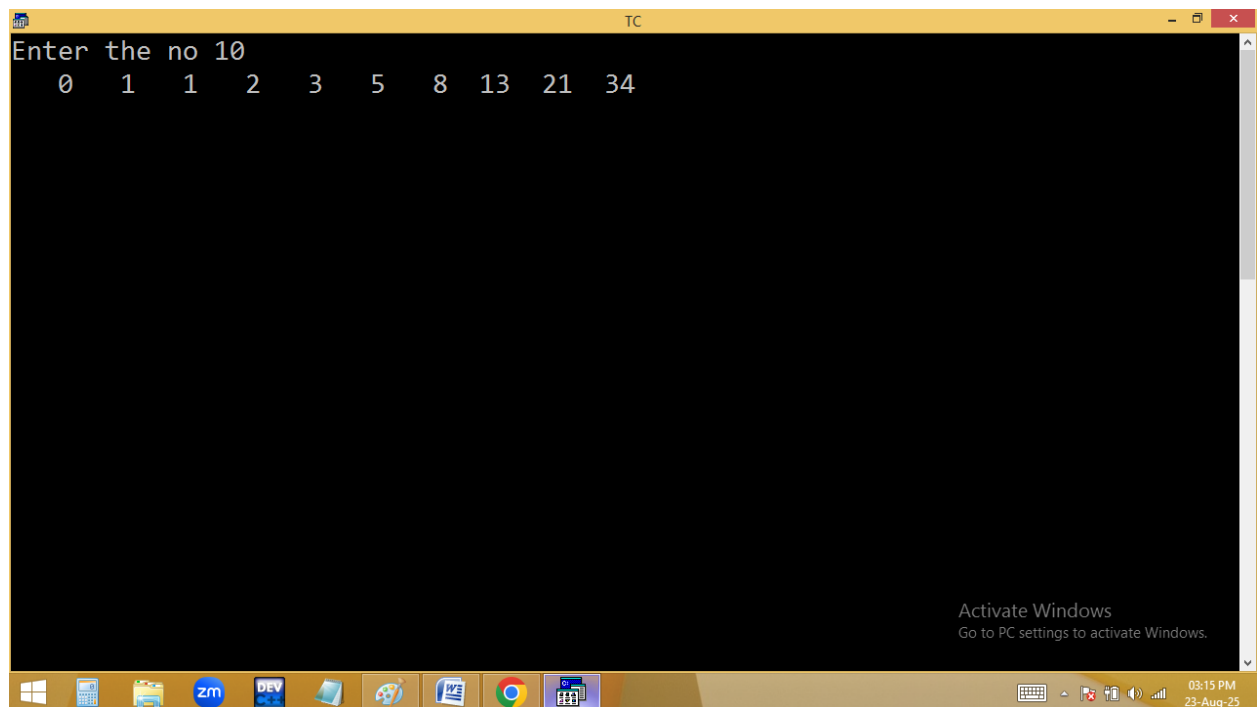
03:15 PM
23-Aug-25



```
TC
Enter the no 5
0 1 1 2 3
```

Activate Windows
Go to PC settings to activate Windows.

03:15 PM
23-Aug-25



```

for(i=1; i<=n; i++) ✓✓
{
  p(f1); ✓
  f3=f1+f2;
  f1=f2; ✓
  f2=f3; ✓
}

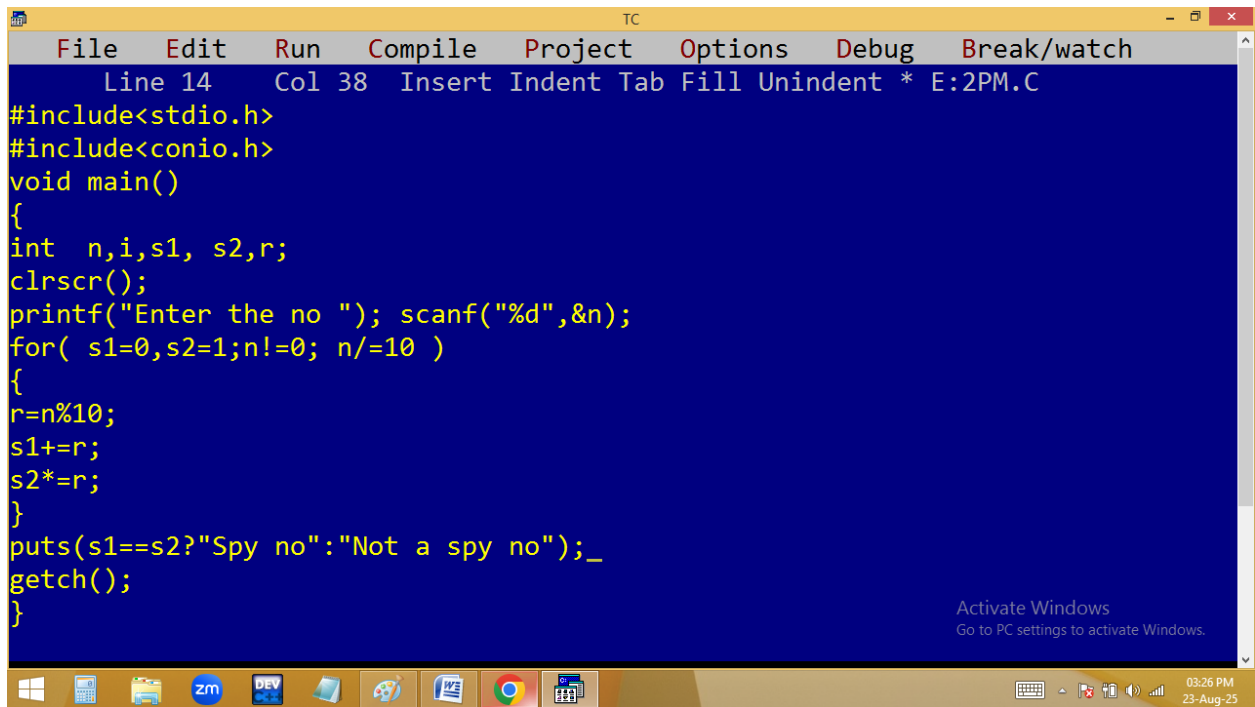
```

$\frac{n}{5}$	i	$f1$		$f2$		$f3$
	1	✓ 0	+	1	→	1
	2	✓ 1	←	1	→	2
	3	✓ 1	←	2	→	3
	4	✓ 2	+	3	→	5
	5	✓ 3		5		
	6					

Finding spy no or not?

123 → $1+2+3=6$ or $1*2*3=6$

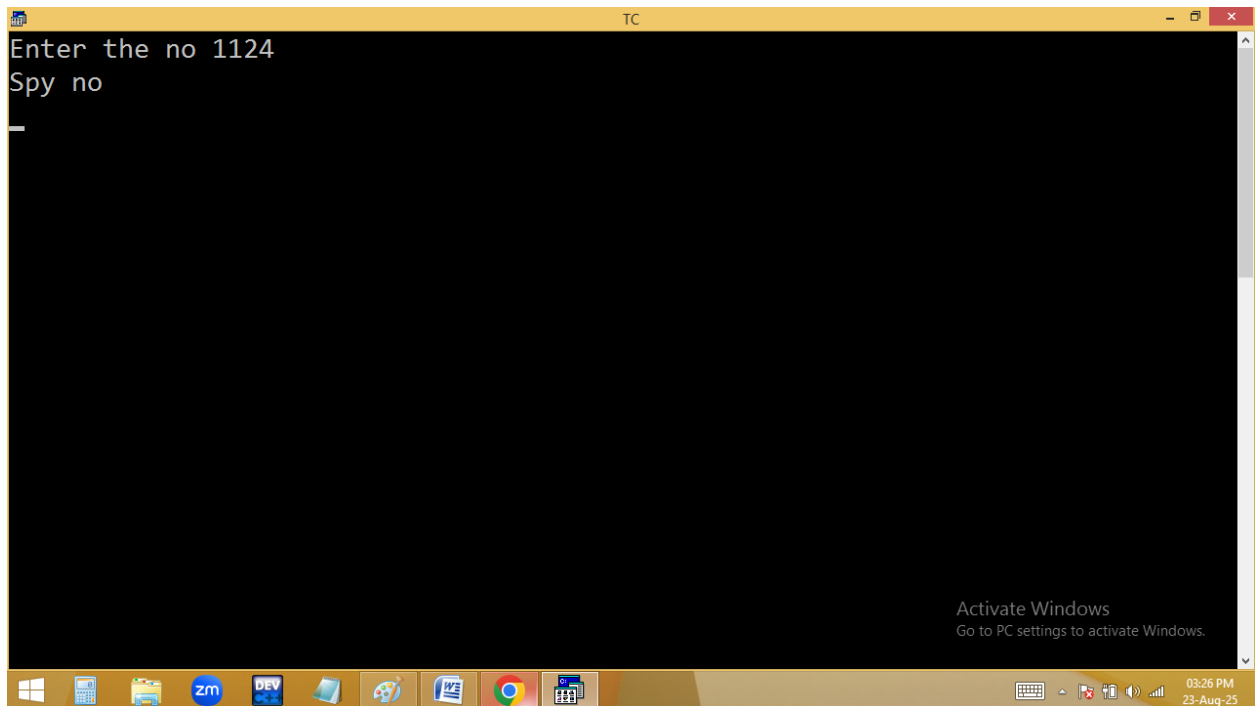
1124 → $1+1+2+4=8$ or $1*1*2*4=8$



The screenshot shows the Turbo C++ (TC) IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a status bar (Line 14, Col 38, Insert, Indent, Tab, Fill, Unindent, * E:2PM.C). The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int  n,i,s1, s2,r;
clrscr();
printf("Enter the no "); scanf("%d",&n);
for( s1=0,s2=1;n!=0; n/=10 )
{
r=n%10;
s1+=r;
s2*=r;
}
puts(s1==s2?"Spy no":"Not a spy no");_
getch();
}
```

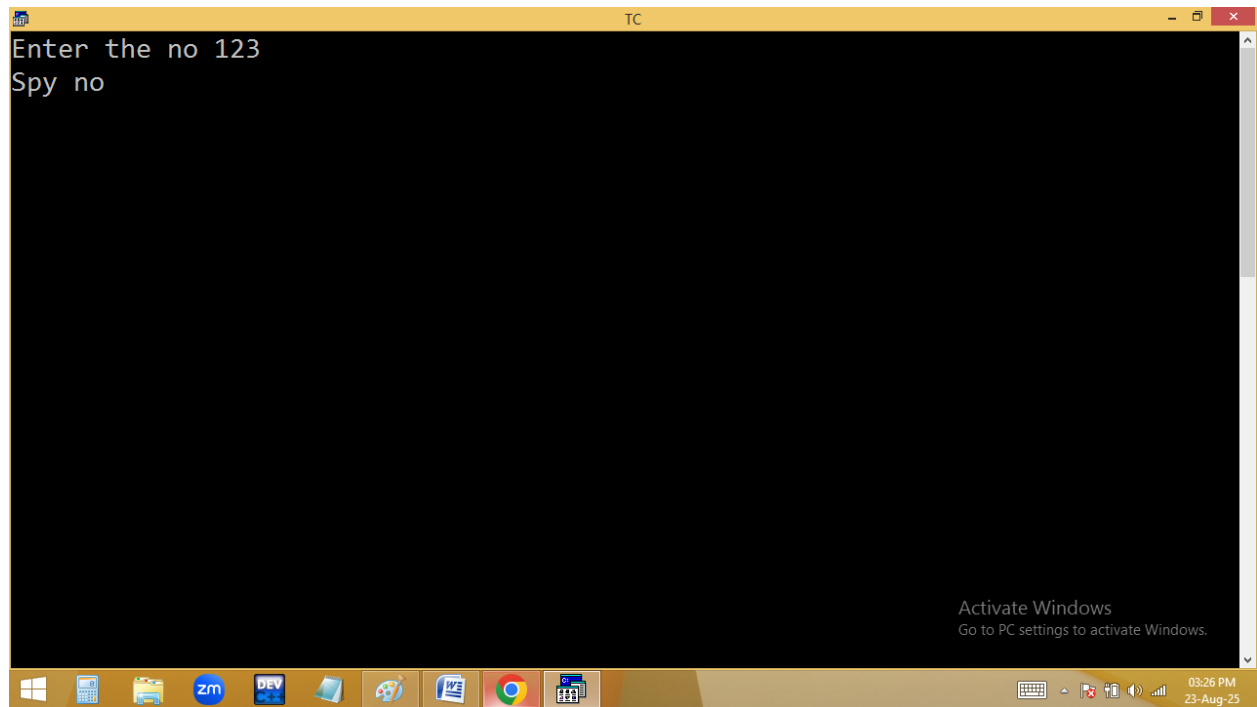
An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.



The screenshot shows the Turbo C++ (TC) IDE with the same menu bar and status bar. The output window displays the following text:

```
Enter the no 1124
Spy no
```

An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.



```
Enter the no 234
Not a spy no
```

	<u>n</u>	<u>γ</u>	<u>s1</u>	<u>s2</u>
	$1124 \% 10 = 4$		$0 + 4 = 4$	$1 \times 4 = 4$
	$112 \% 10 = 2$		$4 + 2 = 6$	$4 \times 2 = 8$
	$11 \% 10 = 1$		$6 + 1 = 7$	$8 \times 1 = 8$
	$1 \% 10 = 1$		$7 + 1 = 8$	$8 \times 1 = 8$

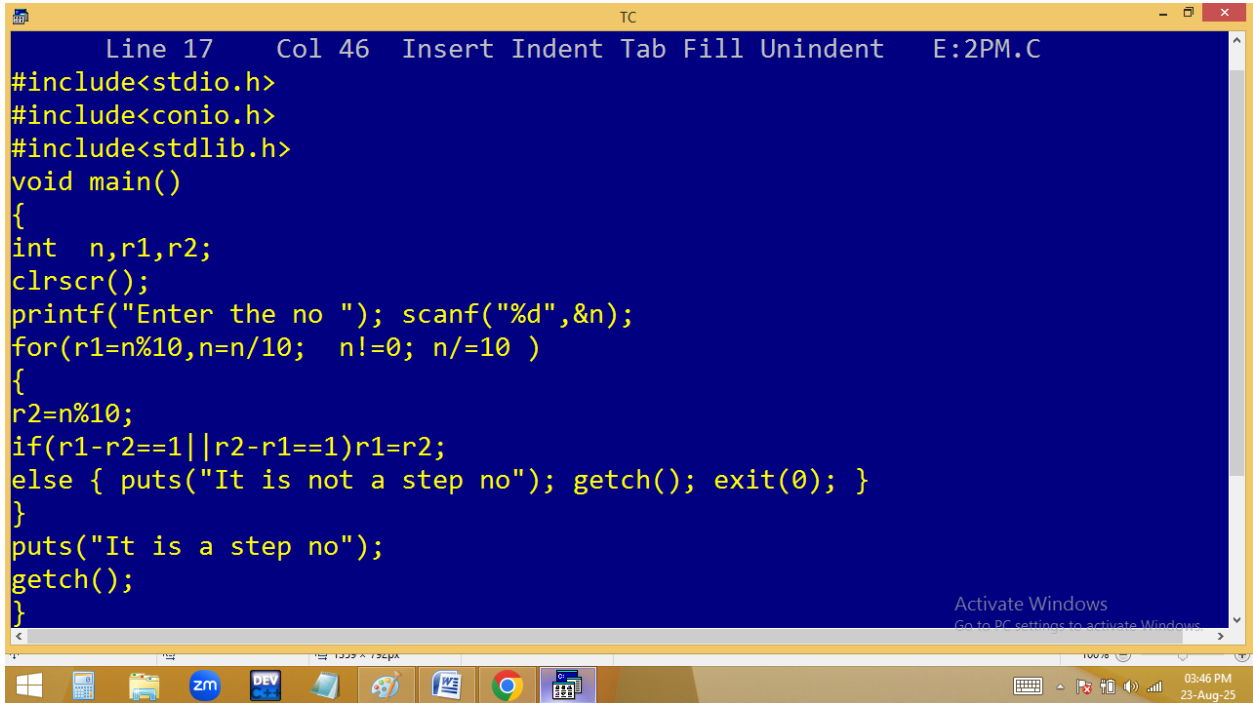

```
for( s1=0, s2=1; n!=0; n/=10 )
{
    r=n%10; ✓✓
    s1+=r; ✓
    s2*=r; ✓
}
puts(s1==s2?"Spy no":"Not a Spy no");
```

Handwritten annotations include blue arrows pointing from the loop condition `n!=0` to the first row of the table, and red arrows pointing from the final values of `s1` and `s2` (both 8) to the `puts` statement.

Finding step no or not?

1234 , 4321, 5678,...

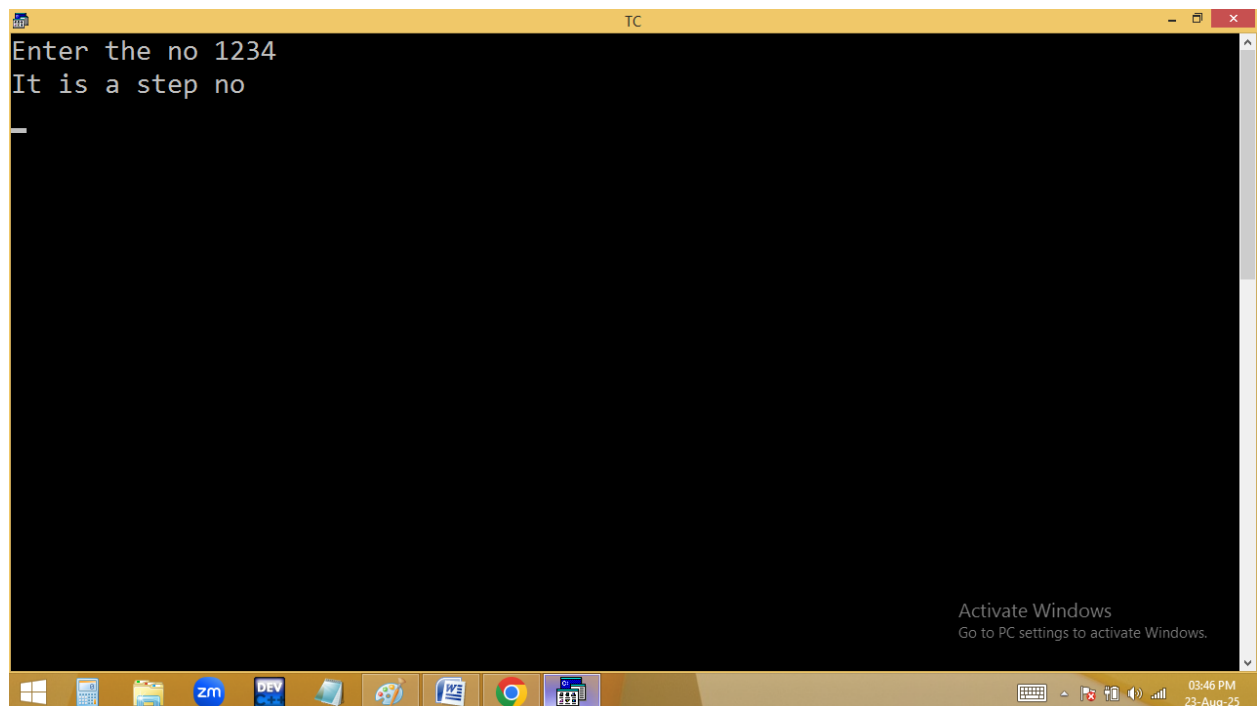
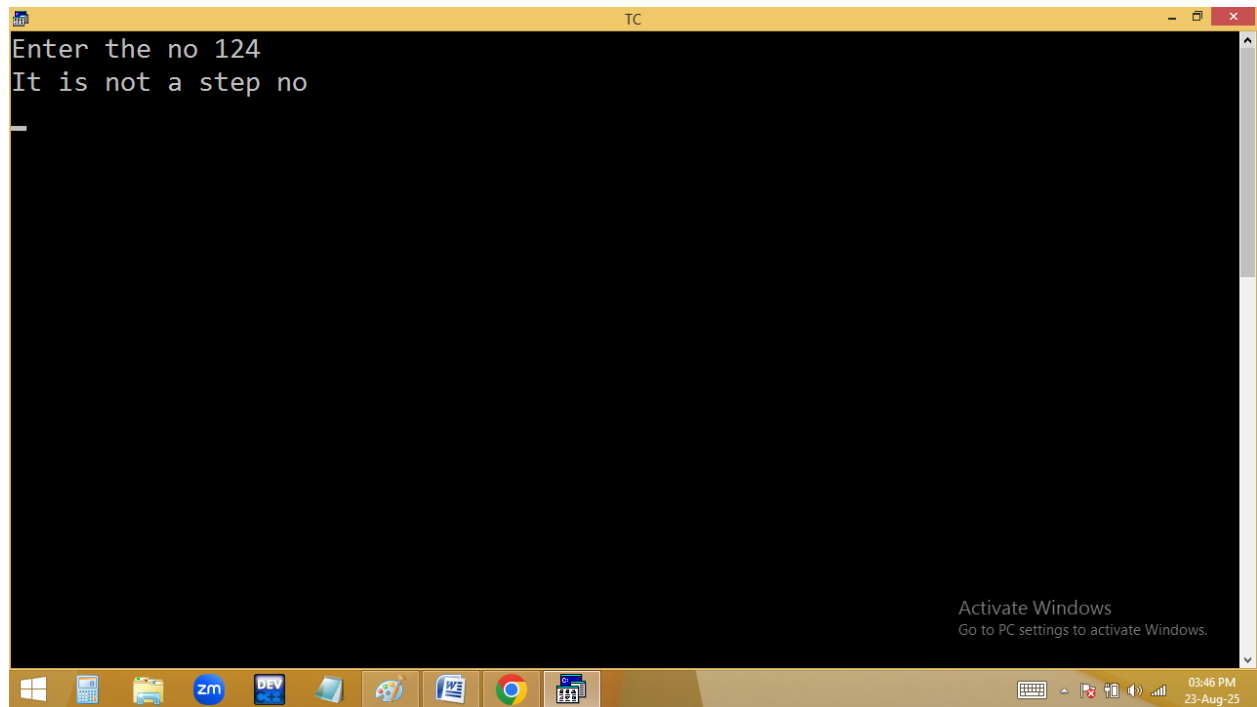
5677 ← not a step no

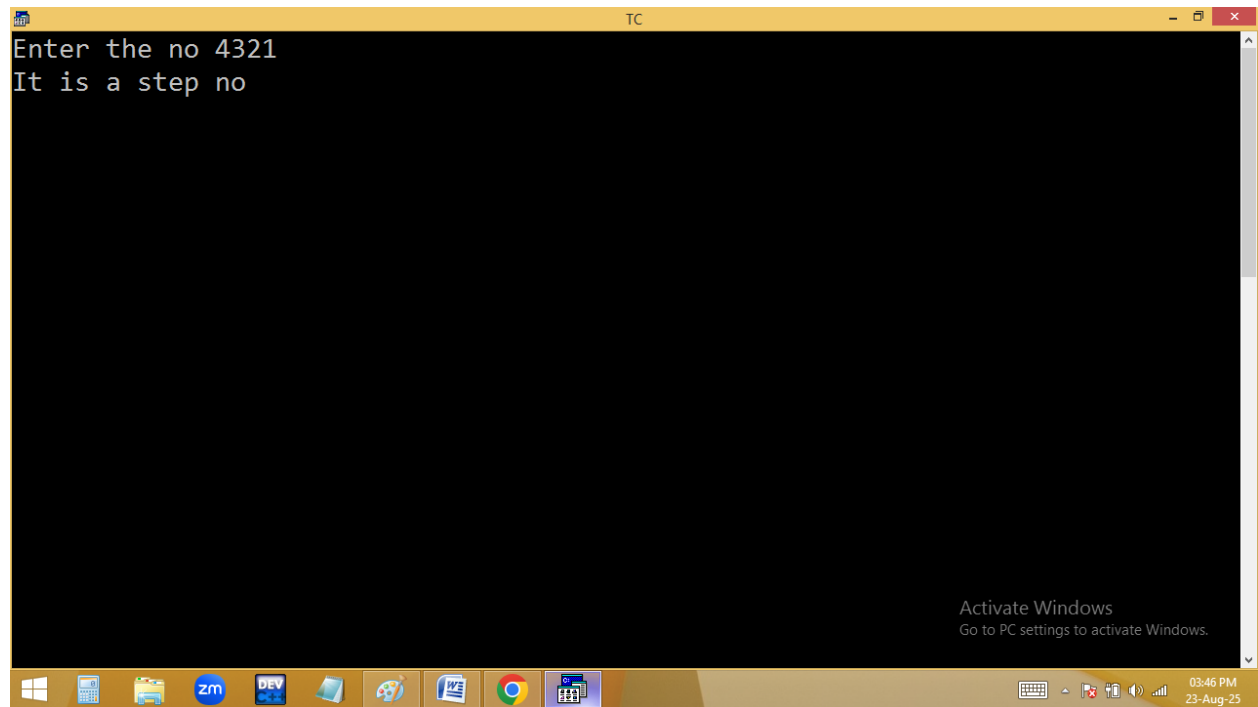


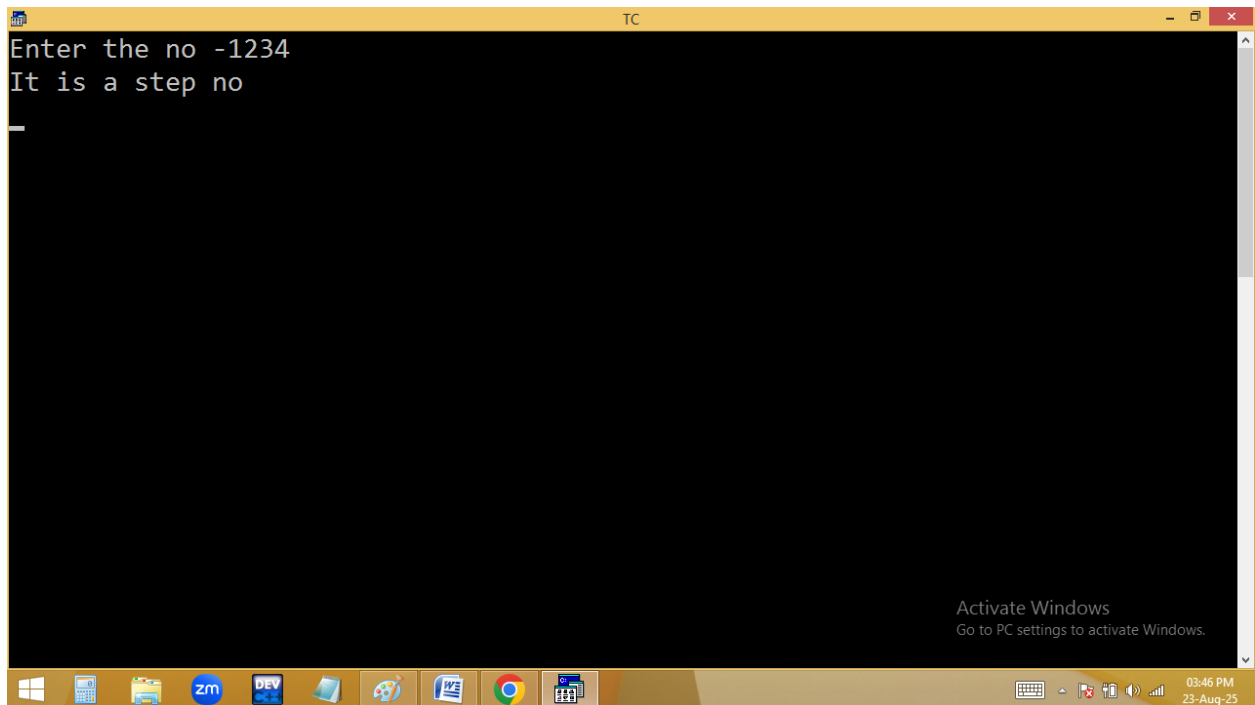
The screenshot shows a Turbo C++ (TC) IDE window titled "TC" with a menu bar (File, Edit, Compile, Run, Debug, Format, Help) and a status bar (Line 17, Col 46, Insert, Indent, Tab, Fill, Unindent, E:2PM.C). The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
    int n,r1,r2;
    clrscr();
    printf("Enter the no "); scanf("%d",&n);
    for(r1=n%10,n=n/10; n!=0; n/=10 )
    {
        r2=n%10;
        if(r1-r2==1||r2-r1==1)r1=r2;
        else { puts("It is not a step no"); getch(); exit(0); }
    }
    puts("It is a step no");
    getch();
}
```

The Windows taskbar at the bottom shows the Start button, several application icons (Calculator, File Explorer, Zoom, DEV, etc.), and the system tray with the date and time (03:46 PM, 23-Aug-25). An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.







Handwritten annotations and calculations for the step number program:

$$\begin{array}{r} n \\ 1234 \div 10 = 4 \\ \hline 123 \\ 123 \div 10 = 3 \\ \hline 12 \\ 12 \div 10 = 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} r1 \\ 5677 : 0 \\ \hline 5677 \\ 5677 \div 12 = 473 \\ \hline 5677 \end{array}$$

for($r1 = n \% 10$, $n /= 10$; $n != 0$; $n /= 10$)
 {
 $r2 = n \% 10$;
 if($r1 - r2 == 1$ || $r2 - r1 == 1$) $r1 = r2$;
 else { p("Not a step no"); getch(); exit(0); }
 p("Step no");
 }

Home work:

Find perfect no or not? Sum of factors is equal to given no

Eg: 6, 28 are perfect no's

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

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

Find prime no or not? No having 2 factors or divisible with 1 and itself only.

2 divisible with 1 and 2 only ← prime

3 divisible with 1 and 3 only ← prime

4 divisible with 1, 2, 4 only ← composite no