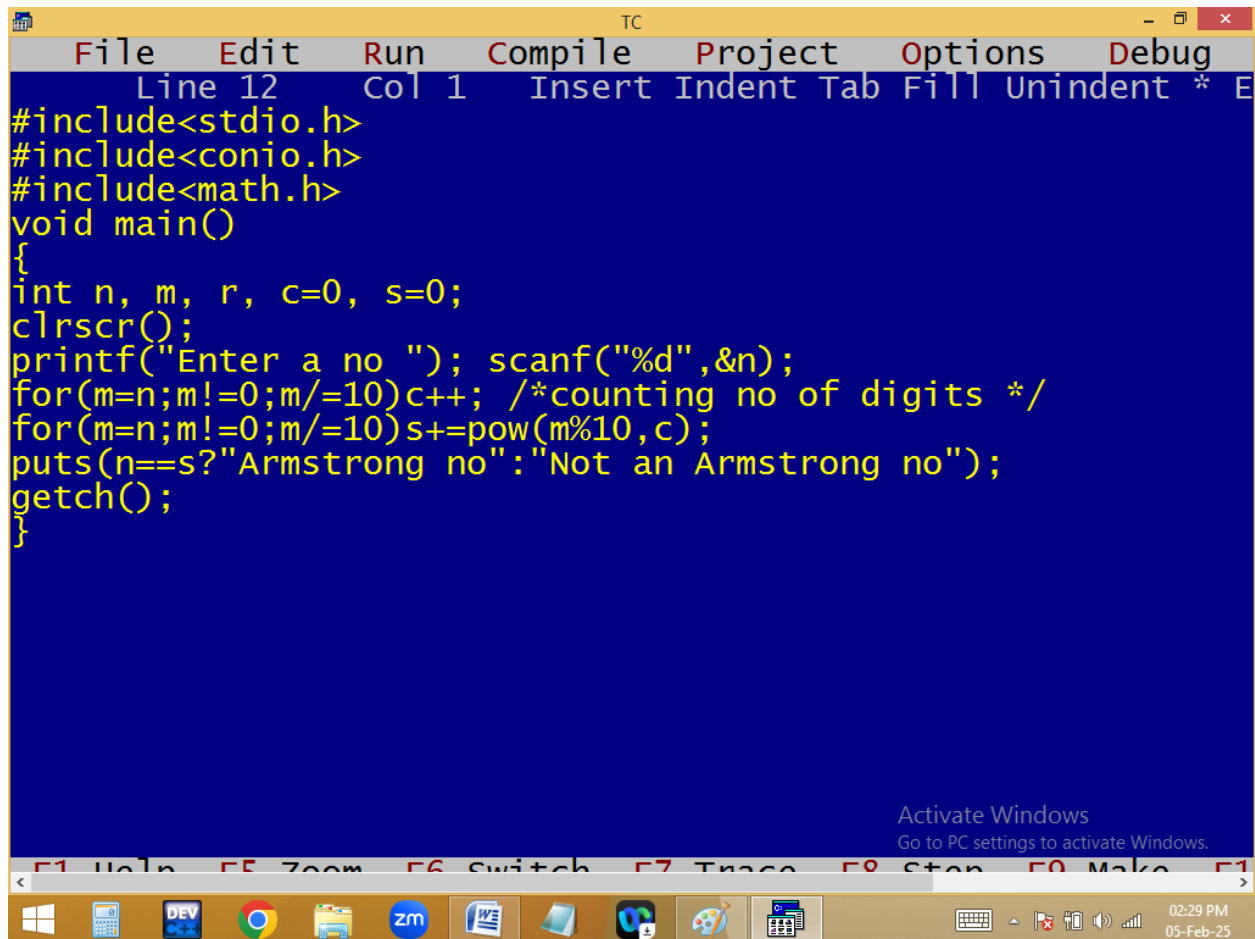


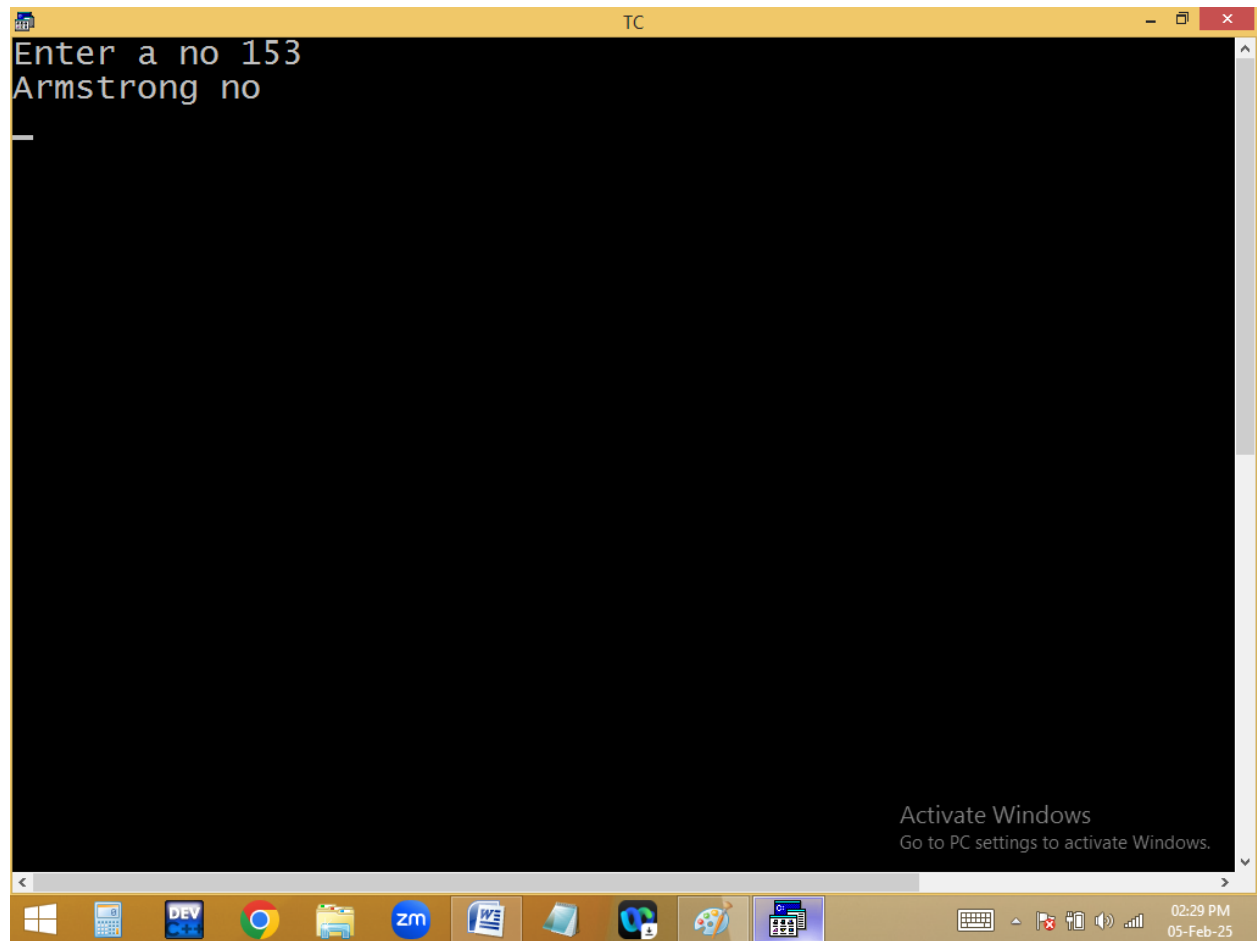
**Finding Armstrong no or not?**

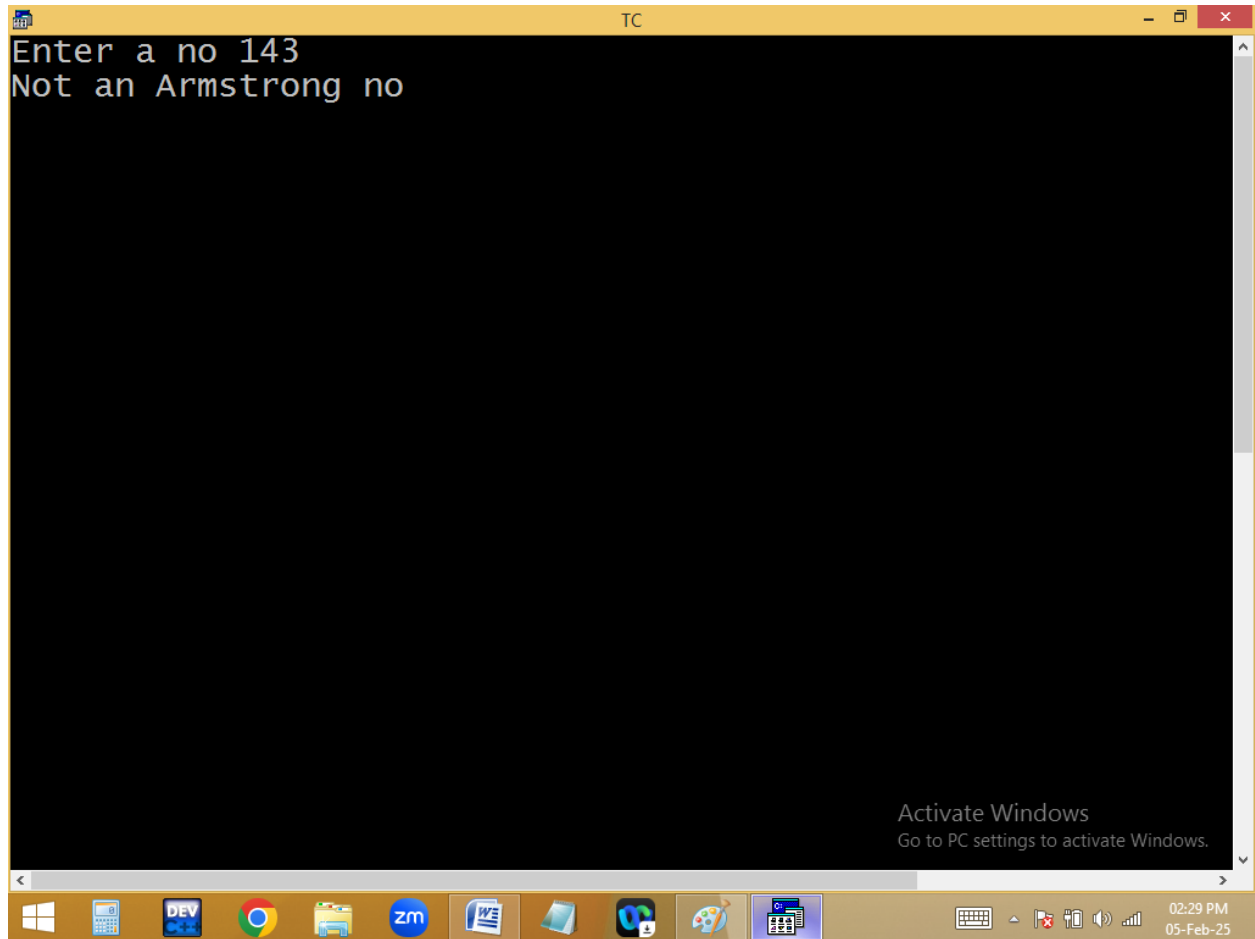


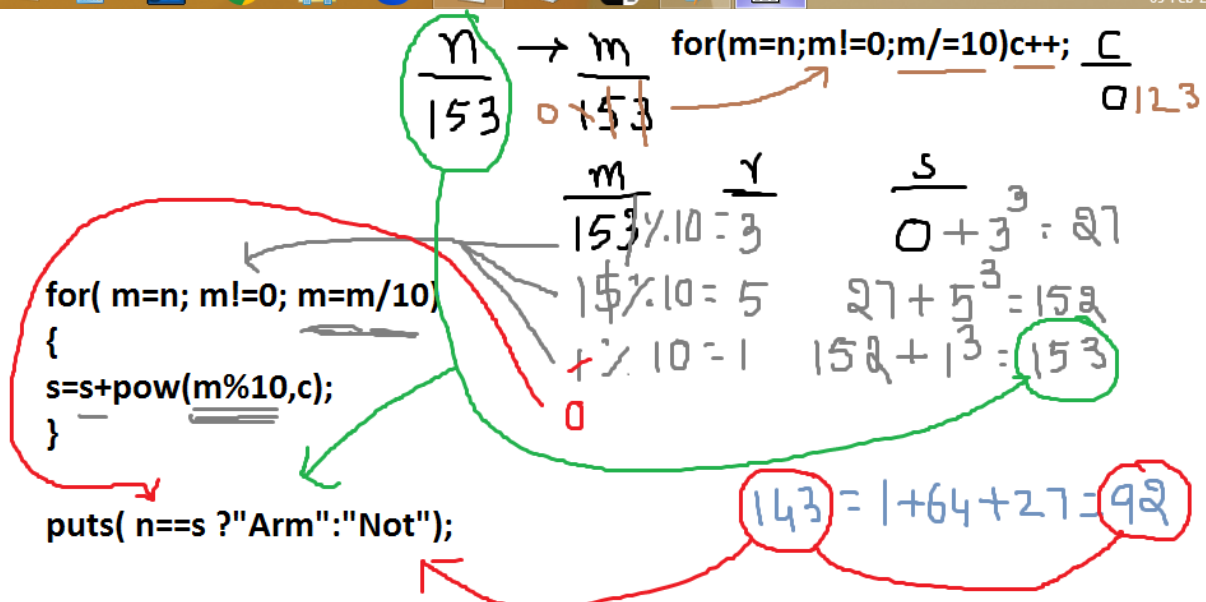
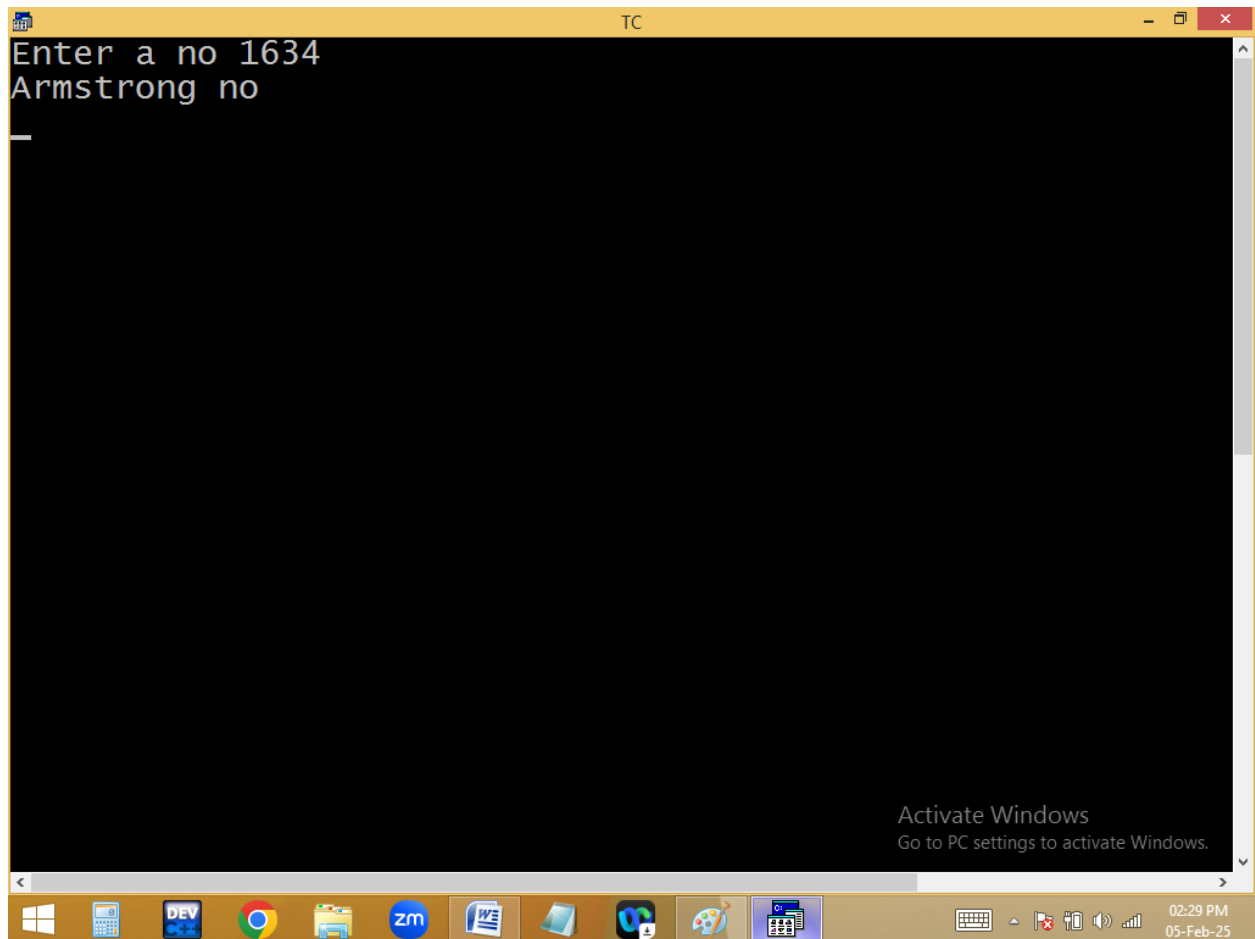
The image shows a screenshot of a Turbo C++ (TC) IDE window. The title bar at the top reads "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". Below the menu bar, the status bar shows "Line 12", "Col 1", and "Insert Indent Tab Fill Unindent \* E". The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int n, m, r, c=0, s=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(m=n;m!=0;m/=10)c++; /*counting no of digits */
for(m=n;m!=0;m/=10)s+=pow(m%10,c);
puts(n==s?"Armstrong no":"Not an Armstrong no");
getch();
}
```

At the bottom of the window, there is a taskbar with various application icons including Windows, Calculator, DEV C++, Google Chrome, File Explorer, Zoom, Word, and others. The system tray on the right shows the time as 02:29 PM and the date as 05-Feb-25. An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.







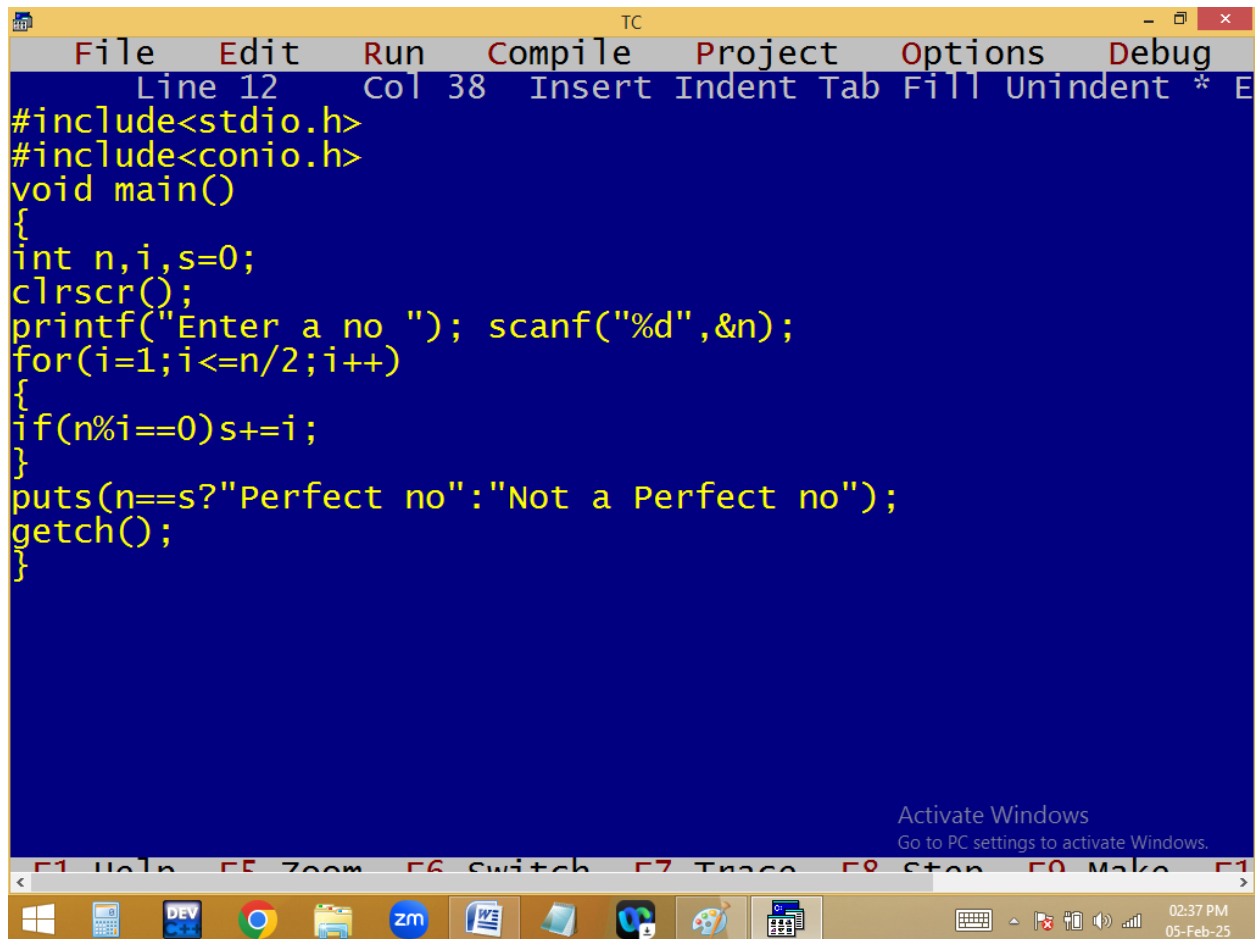
## Finding perfect no or not?

Sum of factors is equal to given no

6 factors sum is  $1+2+3=6$

28 factors sum is  $1+2+4+7+14=28$

4 factors sum is  $1+2=3$  ← not a perfect no



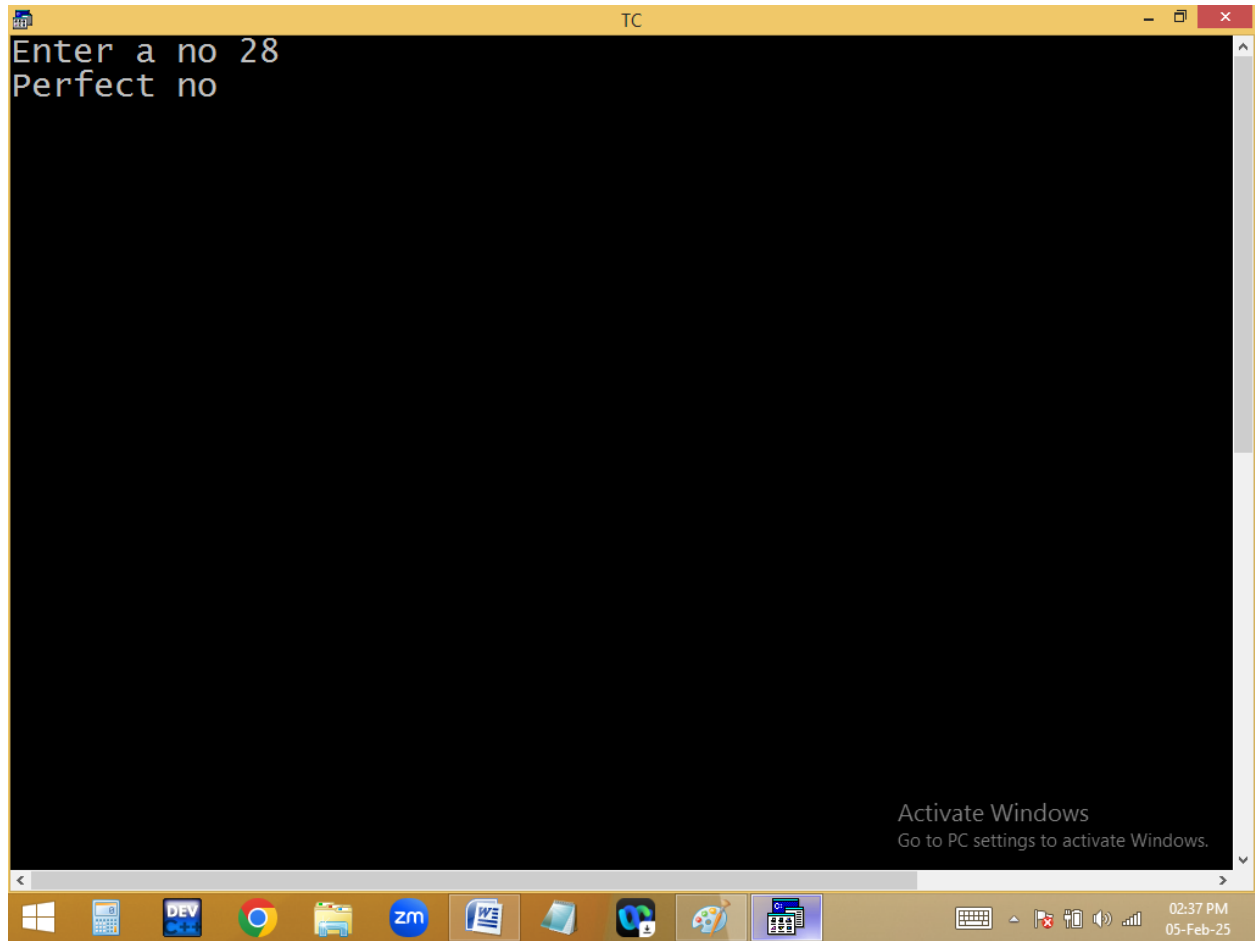
The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". The status bar at the top indicates "Line 12", "Col 38", and lists keyboard shortcuts: "Insert", "Indent", "Tab", "Fill", "Unindent", "\*", and "E". The main editing area has a blue background and contains the following C code:

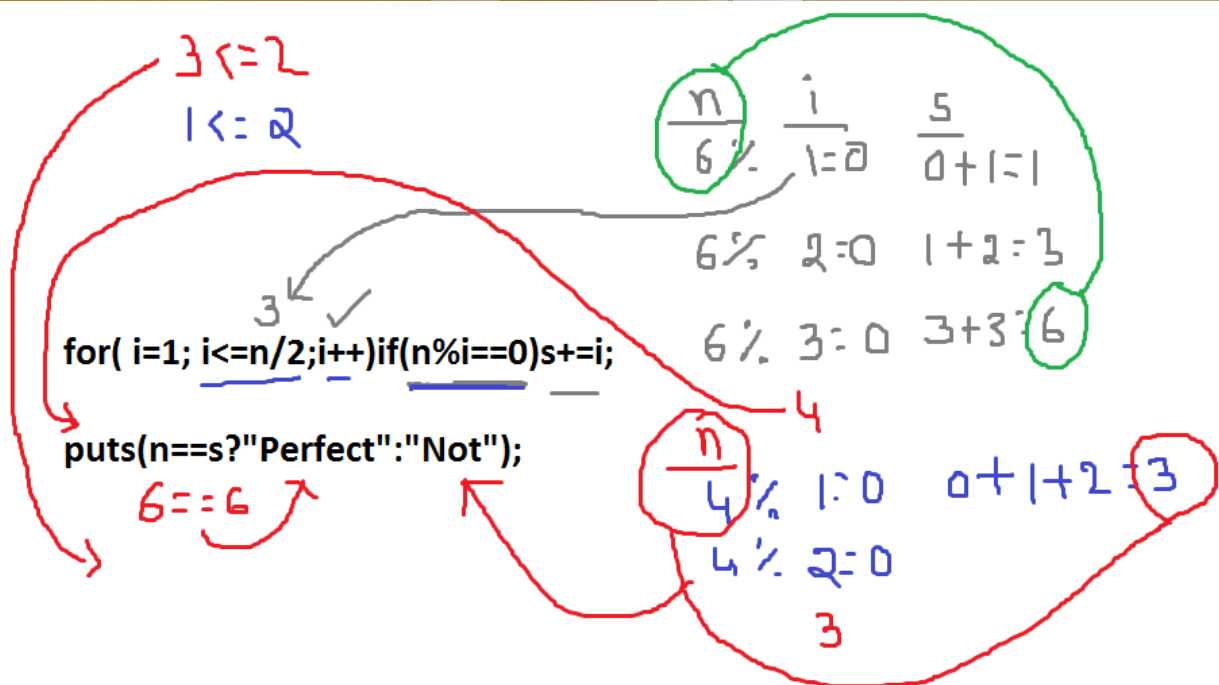
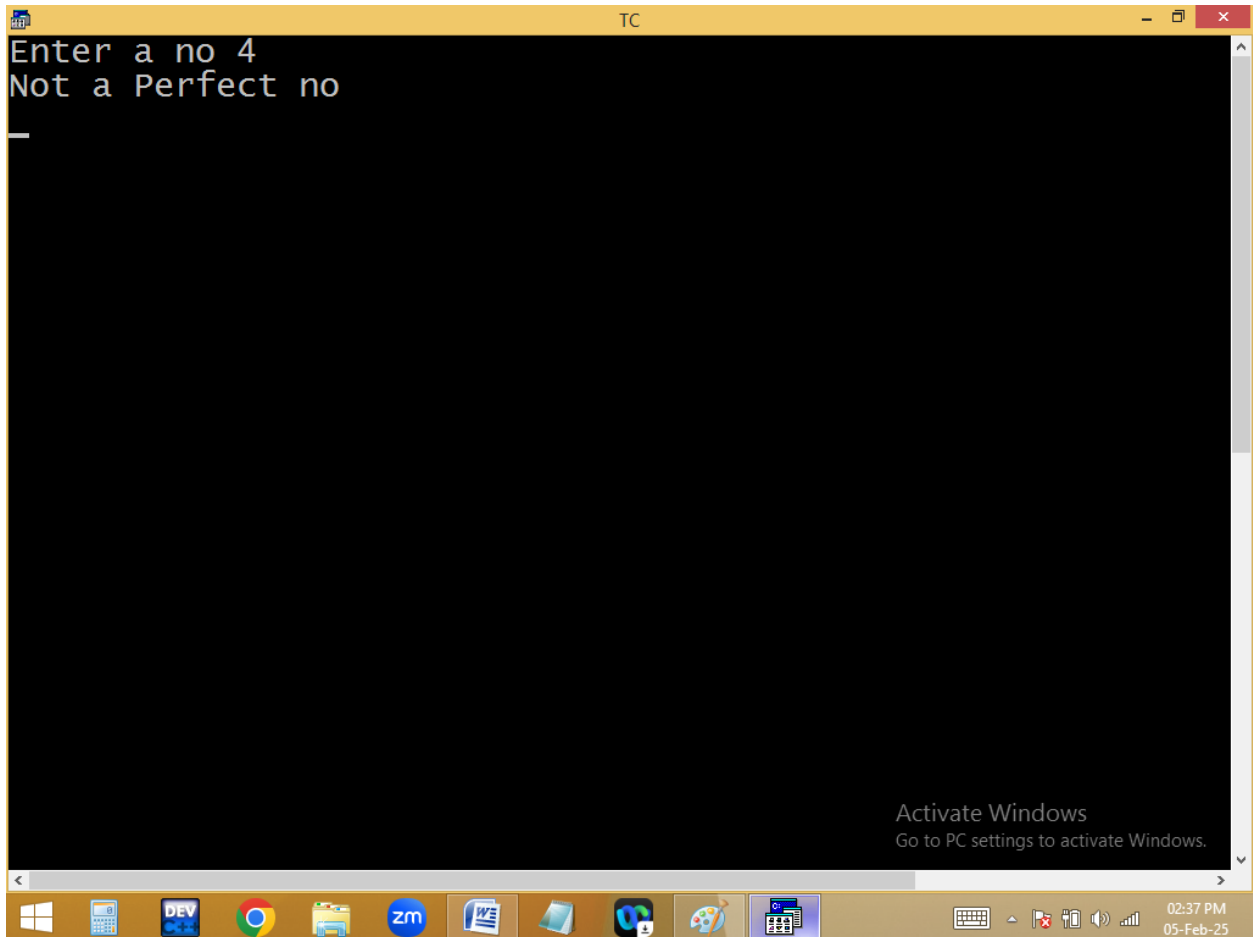
```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,s=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(i=1;i<=n/2;i++)
{
if(n%i==0)s+=i;
}
puts(n==s?"Perfect no":"Not a Perfect no");
getch();
}
```

At the bottom of the IDE window, there is a text prompt: "Activate Windows Go to PC settings to activate Windows." Below the IDE window is the Windows taskbar, which includes icons for the Start menu, Task View, File Explorer, Microsoft Edge, Zoom, Word, and several other applications. The system tray on the right shows the date and time as "02:37 PM 05-Feb-25".









## Finding prime / composite no?

No divisible with 1 and itself only is called prime

Or

No having 2 factors is called prime

$$1\%1=1$$

$$1\%1=1$$

1 is neither not a prime / composite no

$$2\%1=0$$

$$2\%2=0$$

$$3\%1=0$$

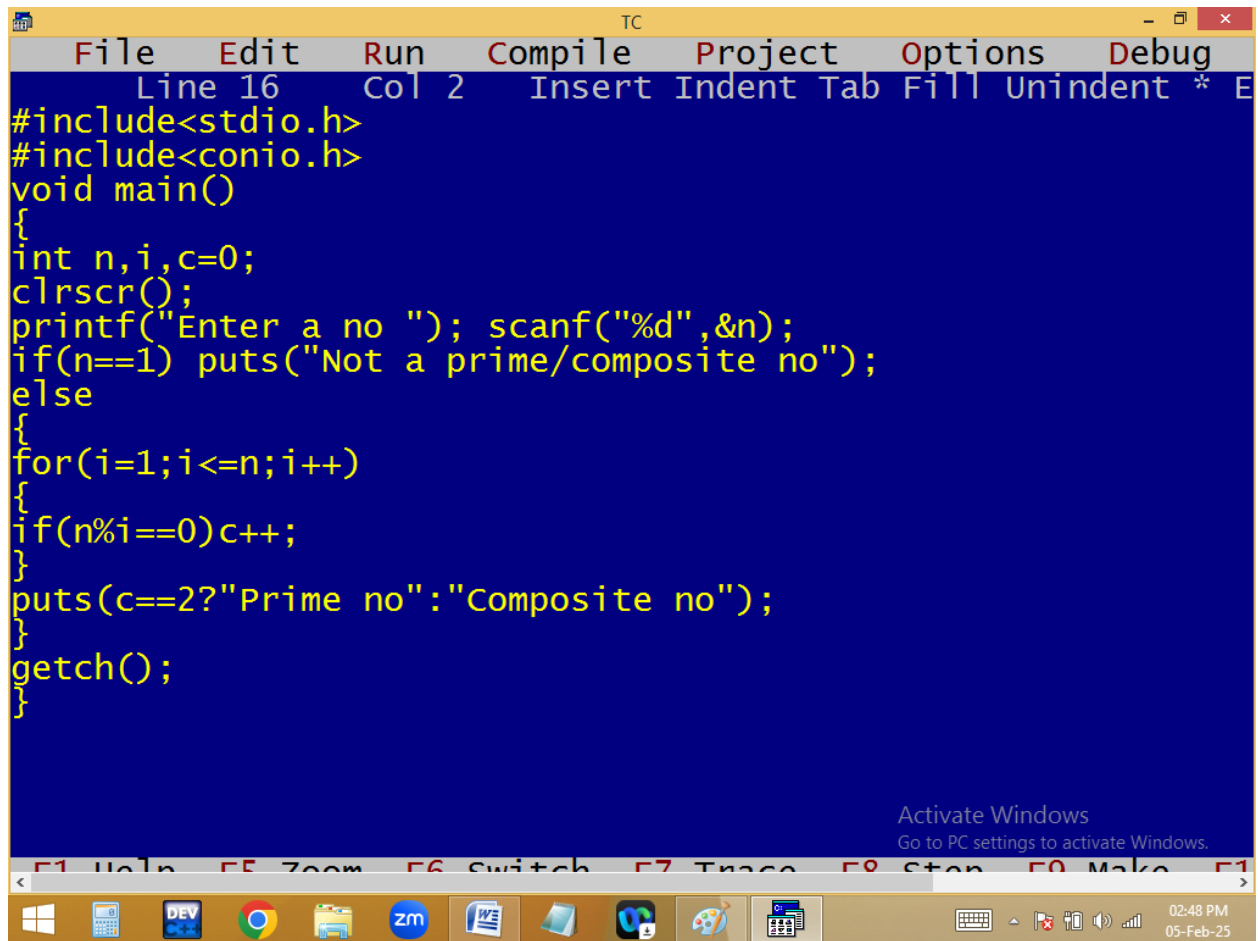
$$3\%2=1$$

$$3\%3=0$$

$$4\%1=0$$

$$4\%2=0$$

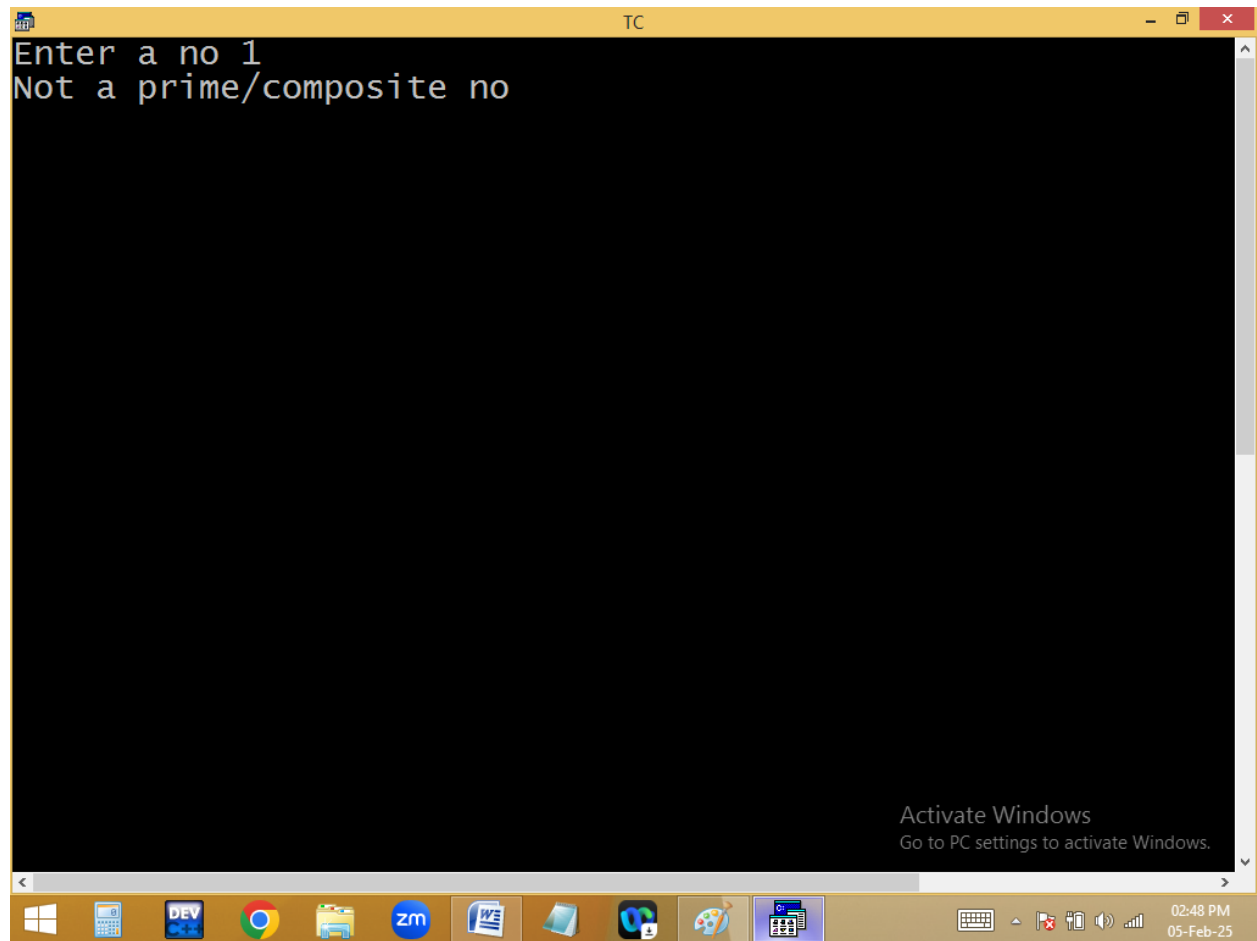
$$4\%4=0$$



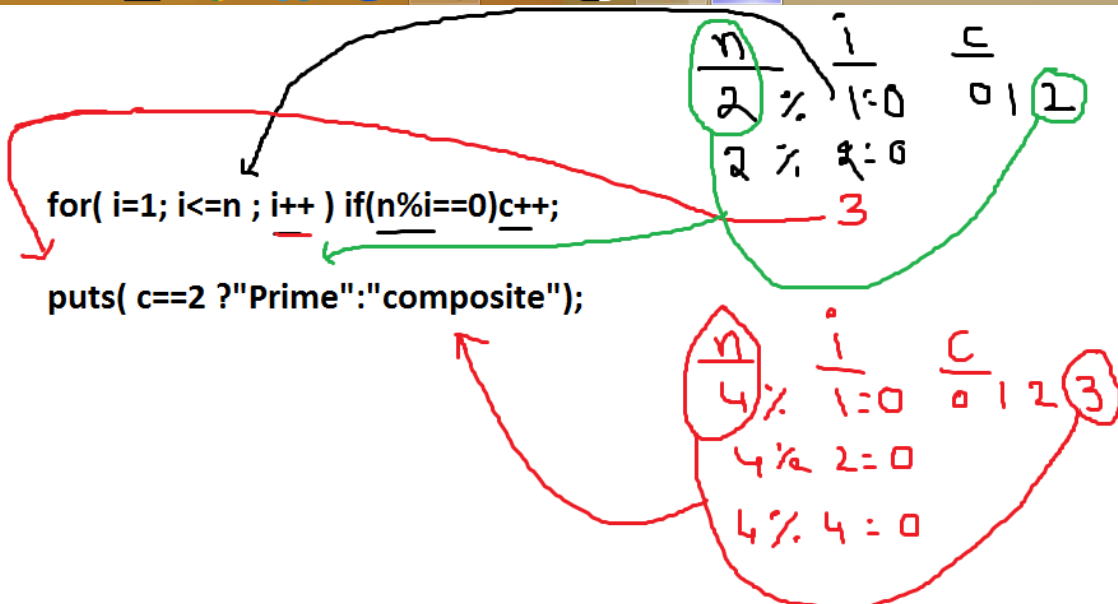
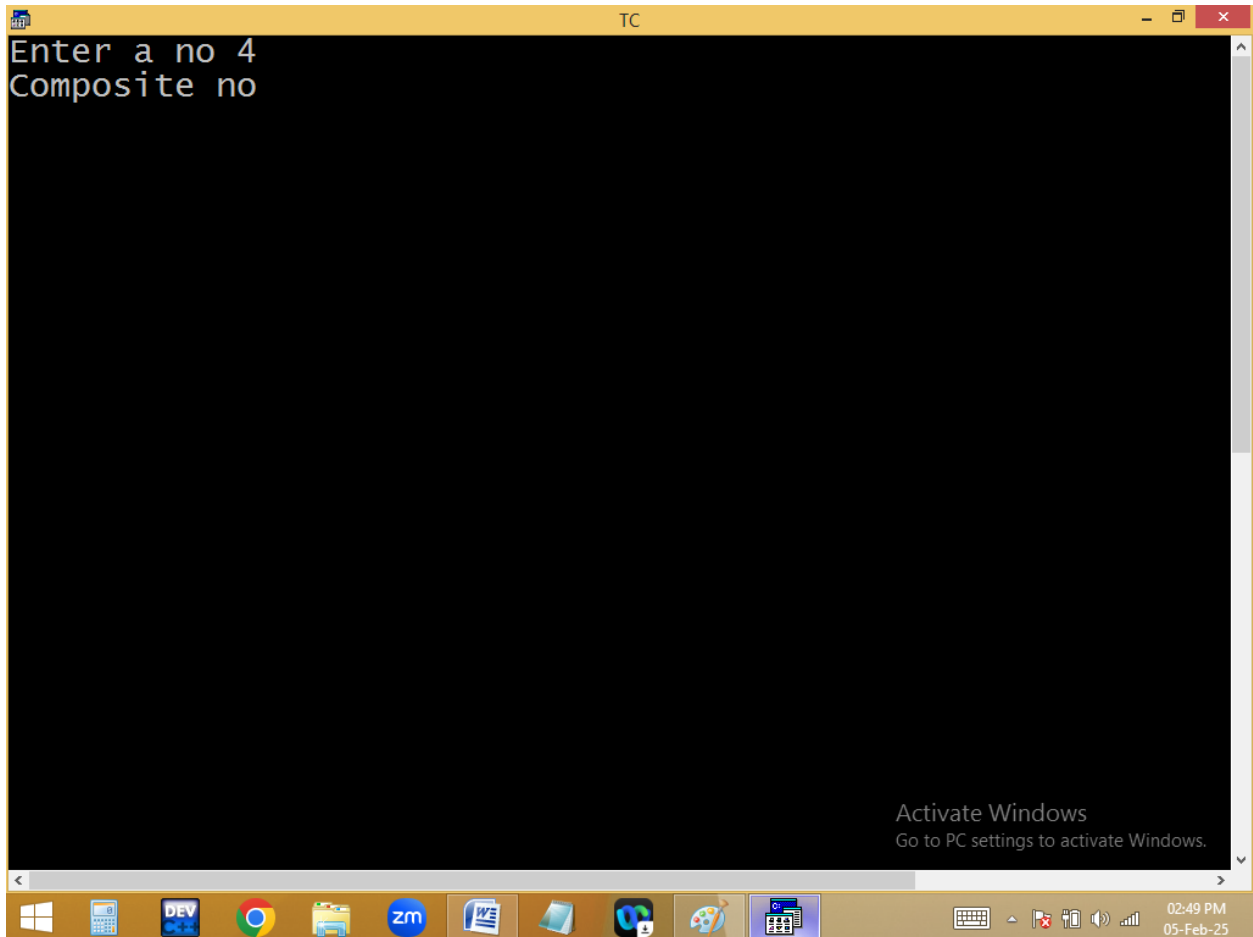
The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". The status bar at the top indicates "Line 16", "Col 2", and "Insert Indent Tab Fill Unindent \* E". The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,c=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
if(n==1) puts("Not a prime/composite no");
else
{
for(i=1;i<=n;i++)
{
if(n%i==0)c++;
}
puts(c==2?"Prime no":"Composite no");
}
getch();
}
```

At the bottom of the window, there is a taskbar with various application icons (Windows, calculator, DEV, Chrome, File Explorer, Zoom, Word, etc.) and a system tray showing the time "02:48 PM" and date "05-Feb-25". An "Activate Windows" watermark is visible in the bottom right corner of the IDE window.



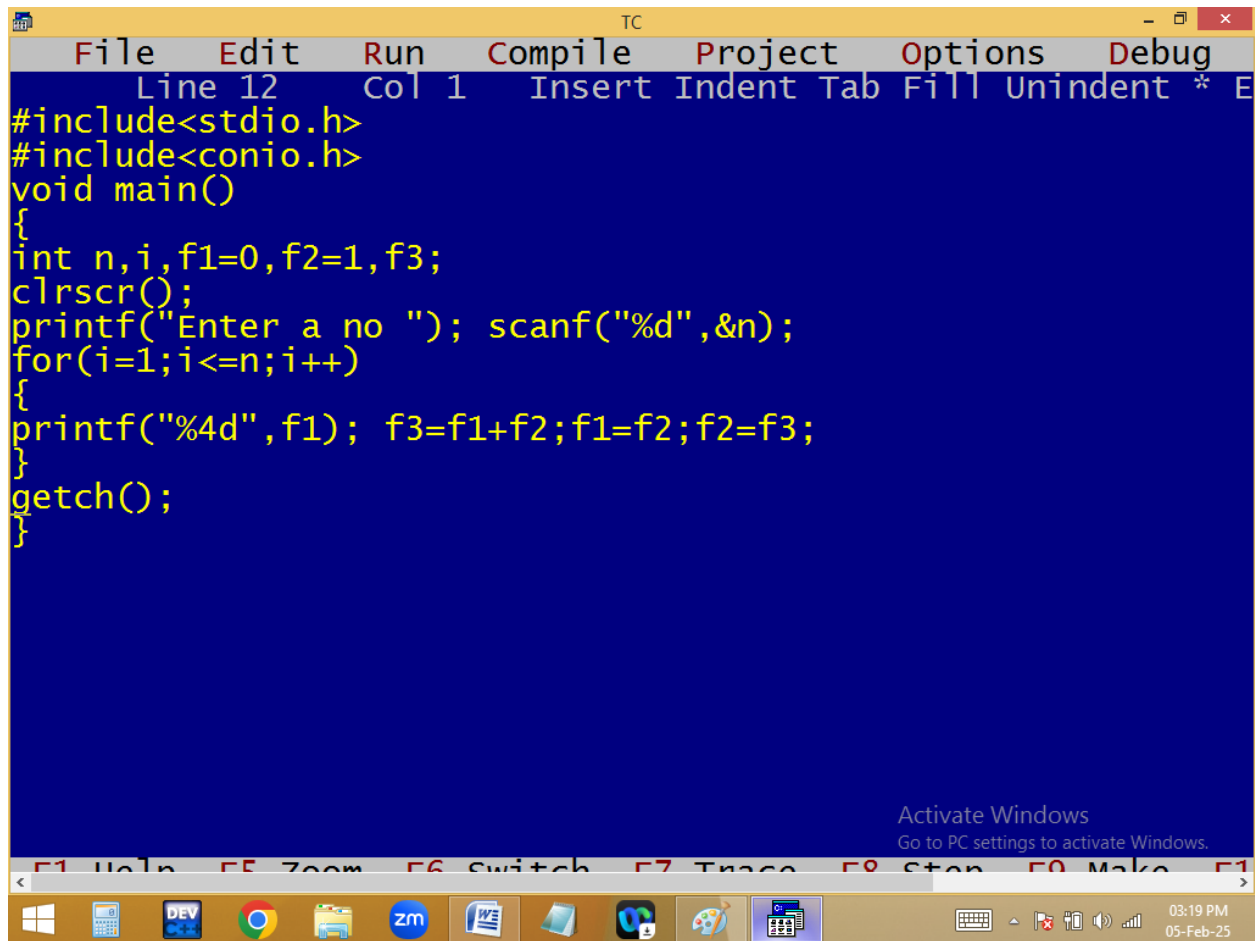




**Fibonacci series:**

$n = 5 \rightarrow 0 \ 1 \ 1 \ 2 \ 3$



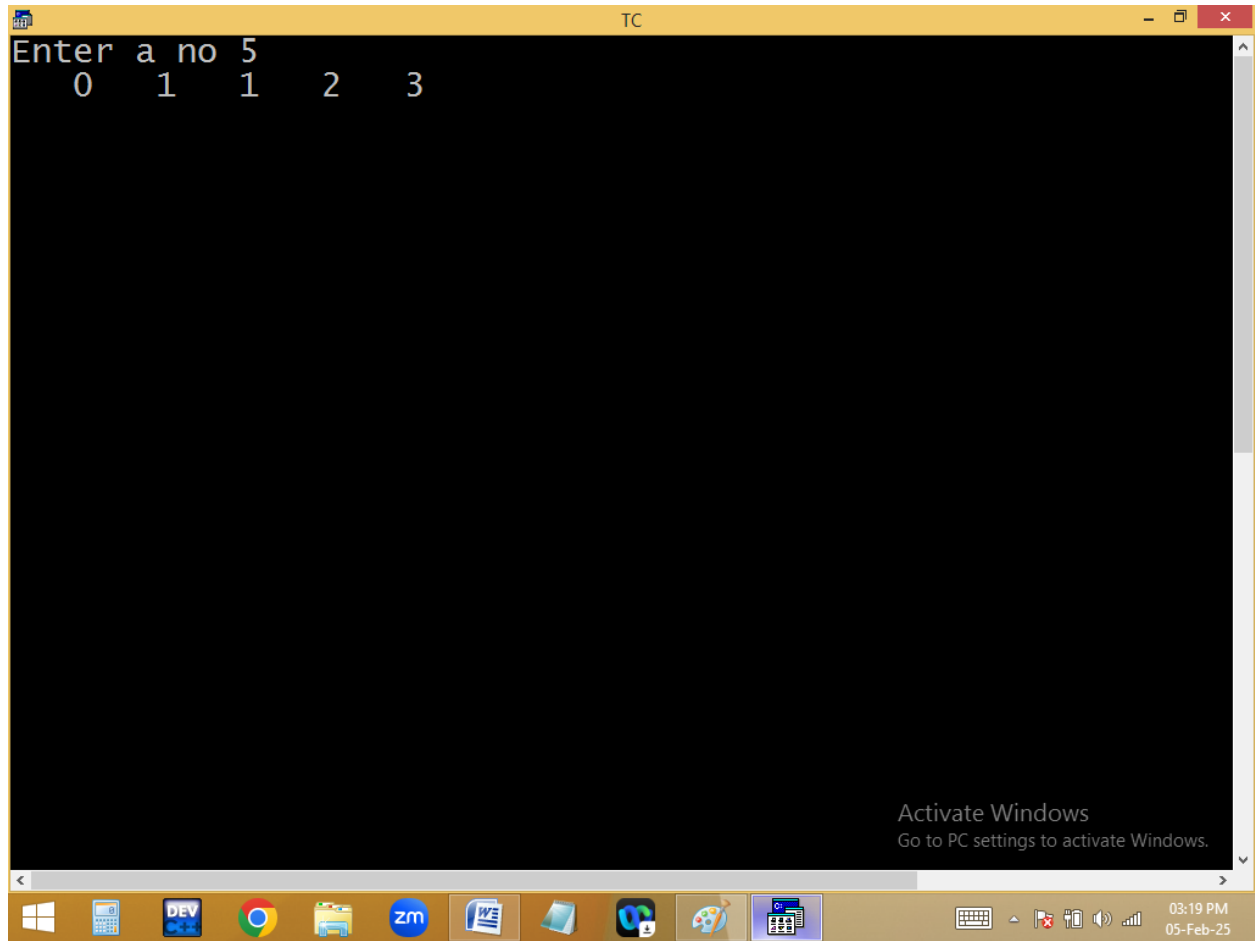


The image shows a screenshot of the Turbo C++ (TC) IDE. The window title is "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". The status bar at the top indicates "Line 12", "Col 1", and "Insert Indent Tab Fill Unindent \* E". The code is written in yellow text on a blue background. It includes headers for `stdio.h` and `conio.h`, and defines a `main` function. The program initializes `f1=0`, `f2=1`, and `f3`, prompts the user to "Enter a no", and then uses a `for` loop to calculate and print the first `n` terms of the Fibonacci sequence. The taskbar at the bottom shows various application icons and the system clock indicating 03:19 PM on 05-Feb-25.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,f1=0,f2=1,f3;
clrscr();
printf("Enter a 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.

03:19 PM  
05-Feb-25



```
TC
Enter a no 10
0 1 1 2 3 5 8 13 21 34_

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

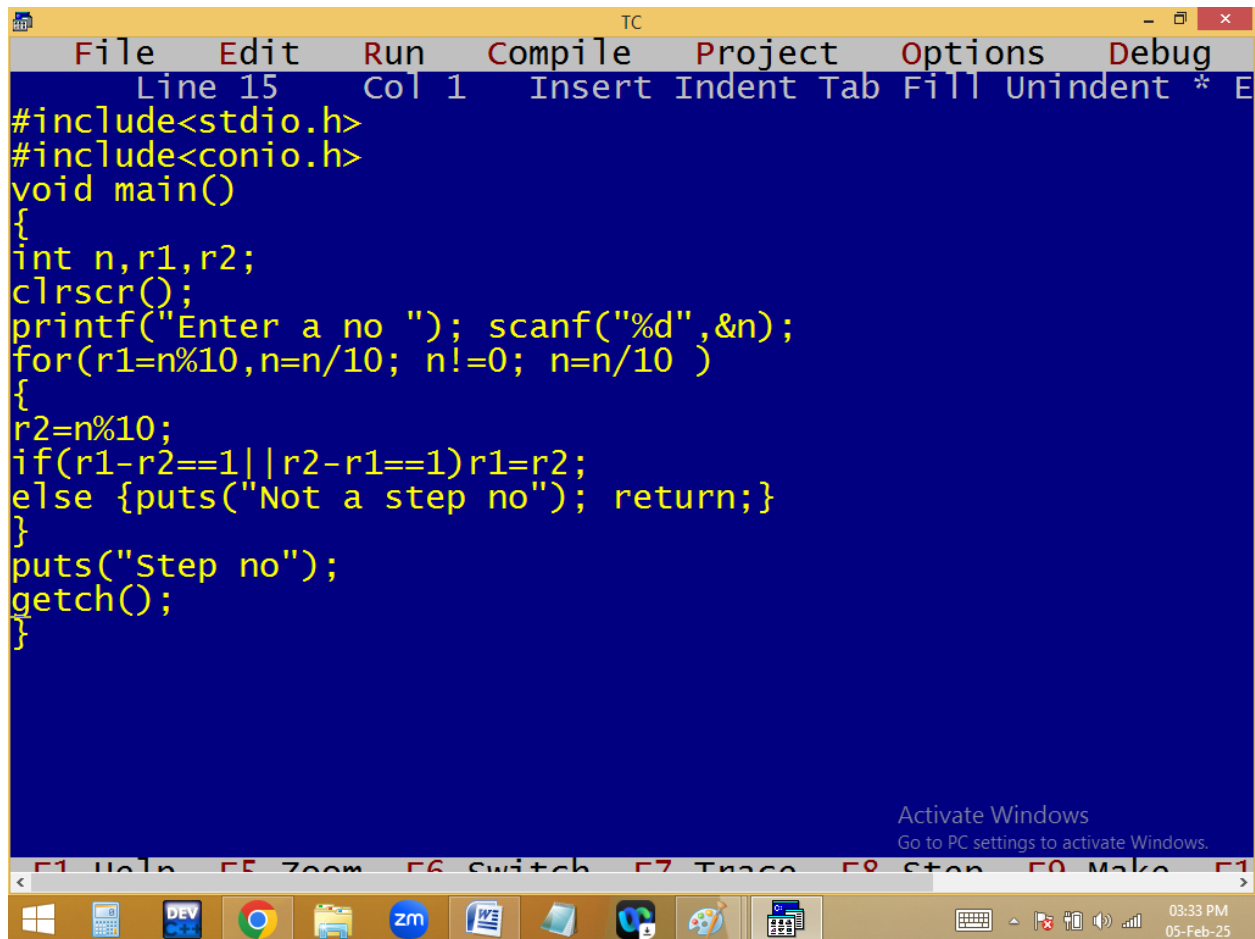
```
for( i=1; i<=5; i++ )
{
    p( f1 );
    f3=f1+f2;
    f1=f2;
    f2=f3;
}
```

<u>n</u>	<u>i</u>	<u>f1</u>	<u>f2</u>	<u>f3</u>
5	1	✓ 0	+ 1	= 1
	2	✓ 1	+ 1	= 2
	3	✓ 1	+ 2	= 3
	4	✓ 2	+ 3	= 5
	5	3	+ 5	= 8
	6			
	✓			
	0	1	1	2
			2	3

Finding step no or not?

1234, 4321,

4568 ← not a step no



```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 1 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int n,r1,r2;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(r1=n%10,n=n/10; n!=0; n=n/10 )
{
r2=n%10;
if(r1-r2==1||r2-r1==1)r1=r2;
else {puts("Not a step no"); return;}
}
puts("Step no");
getch();
}
```

Activate Windows  
Go to PC settings to activate Windows.

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

03:33 PM  
05-Feb-25

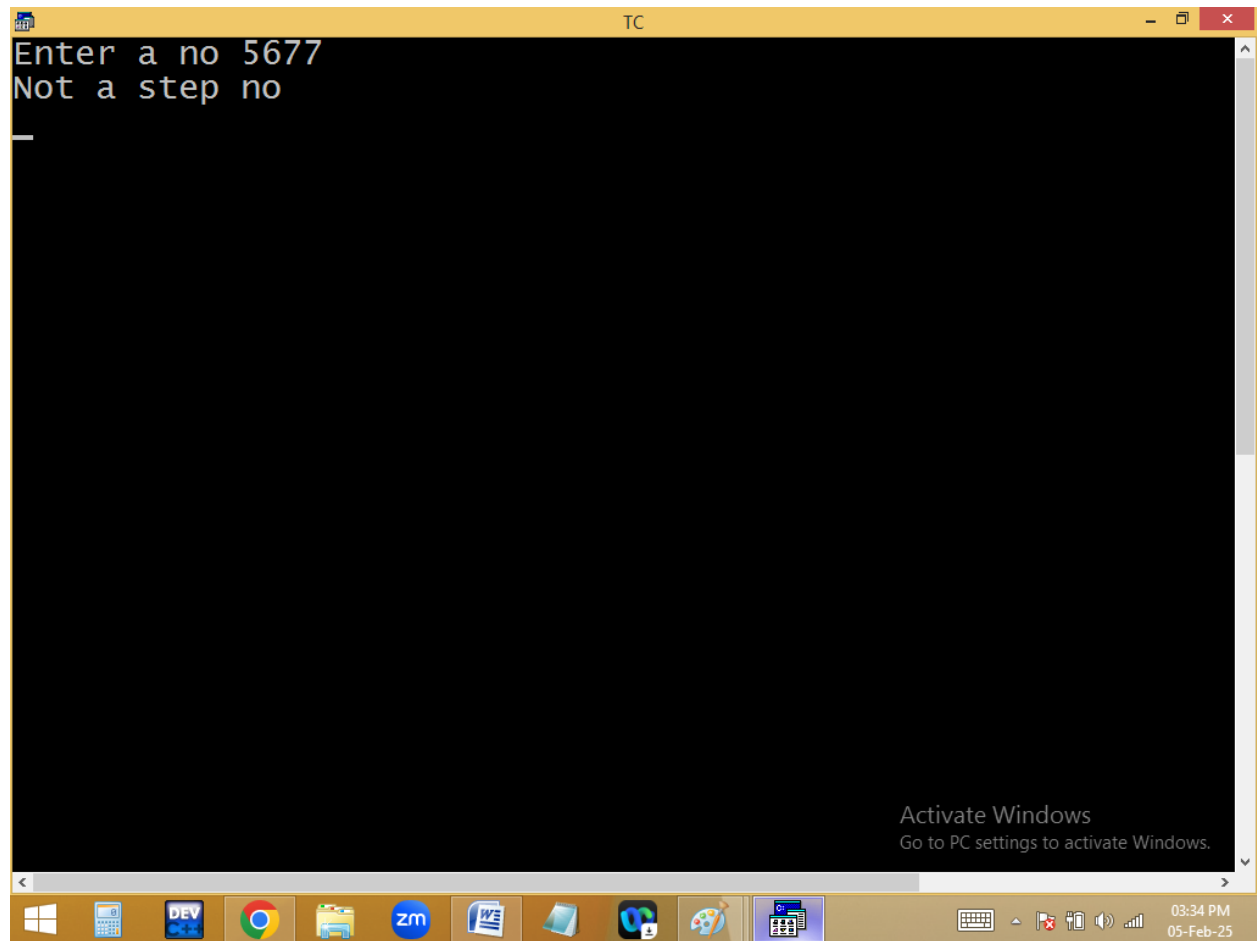












```

r1=n%10; ✓ 1235
n=n/10;
for( ; n!=0; n/=10 )
{
  r2=n%10; ✓
  if(r1-r2==1 || r2-r1==1)
  {
    r1=r2;
  }
  else
  {
    puts"Not step"; return; ✓
  }
  p(step no);
}

```

$n$   
 $1234 \div 10 = 123$   
 $123 \div 10 = 12$   
 $12 \div 10 = 1$   
 $1 \div 10 = 0$

Handwritten notes and arrows:  
 -  $5$  is written next to the first division.  
 -  $3=2$  and  $3=1$  are written next to the second and third divisions respectively.  
 -  $2=1$  is written next to the fourth division.  
 -  $1=1$  is written next to the fifth division.  
 - Arrows point from the right side of the divisions to the corresponding values in the code.

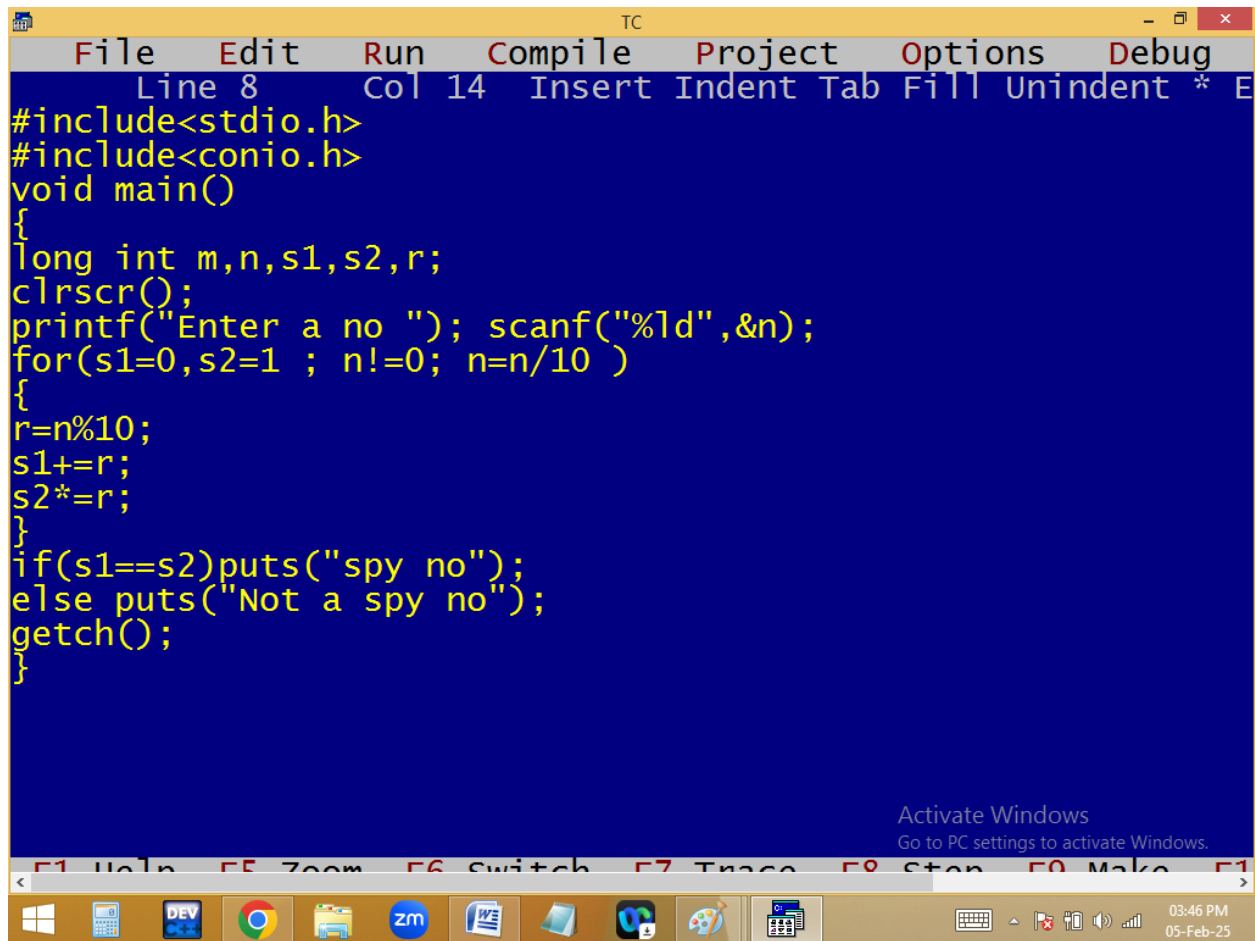
## Finding spy no?

$$2+2=4$$

$$2*2=4$$

$$1+2+4+1=8$$

$$1 \times 2 \times 4 \times 1 = 8$$

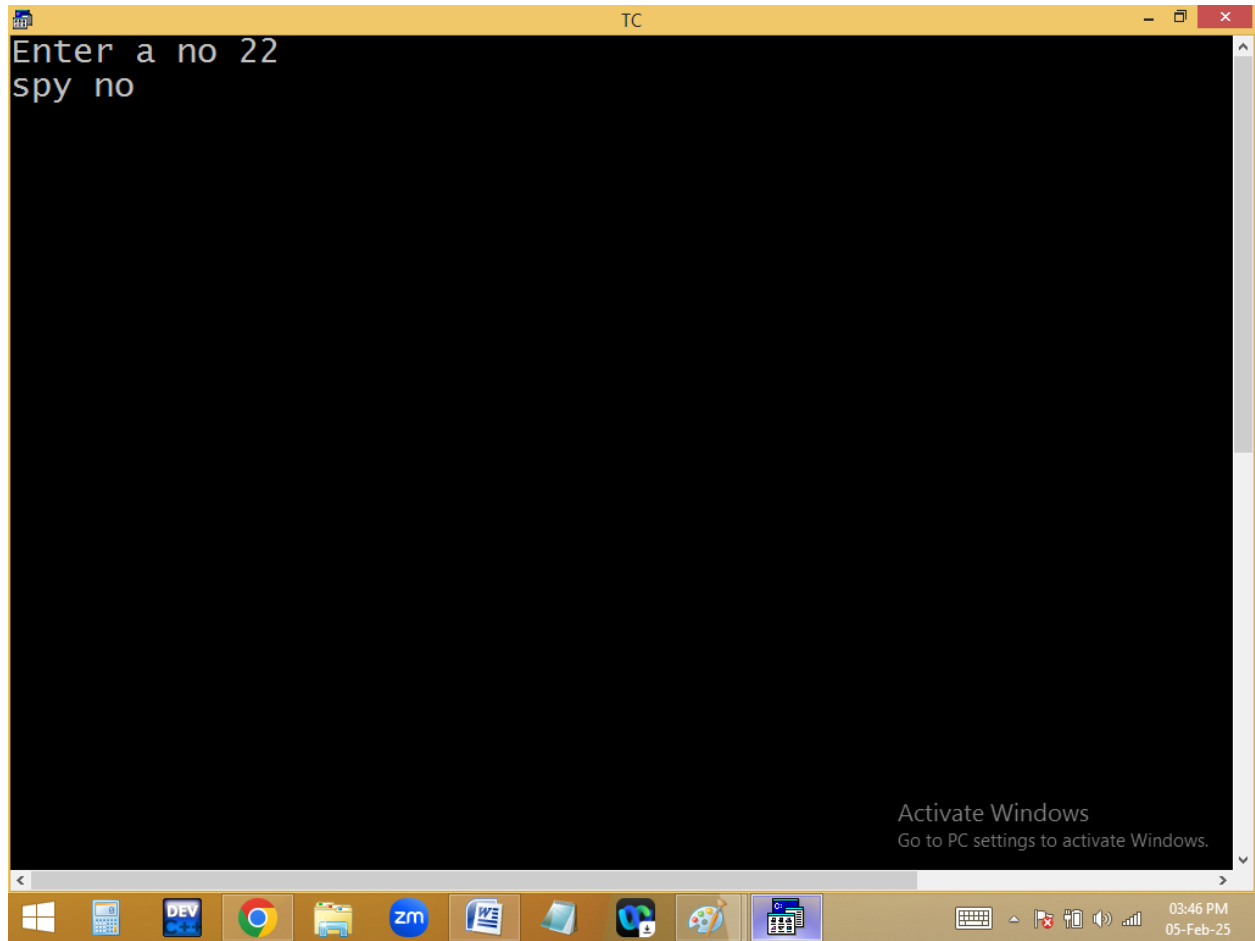


```
TC
File Edit Run Compile Project Options Debug
Line 8 Col 14 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
long int m,n,s1,s2,r;
clrscr();
printf("Enter a no "); scanf("%ld",&n);
for(s1=0,s2=1 ; n!=0; n=n/10 )
{
r=n%10;
s1+=r;
s2*=r;
}
if(s1==s2)puts("spy no");
else puts("Not a spy no");
getch();
}
```

Activate Windows  
Go to PC settings to activate Windows.

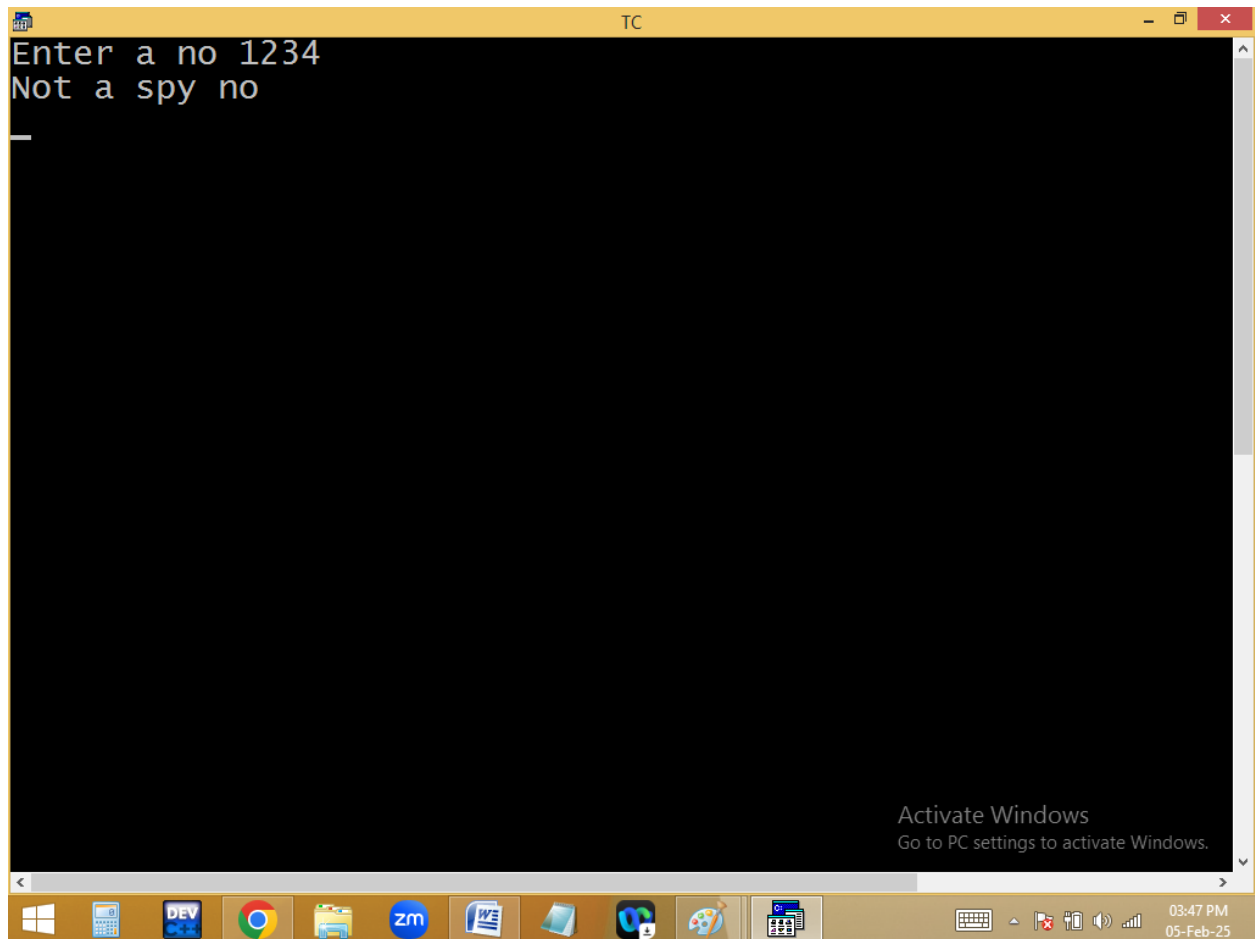
F1 Help F5 Zoom F6 Switch F7 Trace F8 Stop F9 Make F10

03:46 PM  
05-Feb-25









```

for( s1=0, s2=1; n!=0 ; n=n/10 )
{
    r = n%10;

    s1= s1 + r;
    s2 = s2 * r;
}

puts(s1==s2?"spy":"Not");

```

$$\begin{array}{r}
 n \\
 \hline
 123
 \end{array}
 \quad
 \begin{array}{r}
 m \\
 \hline
 123 \div 10 = 3 \\
 12 \div 10 = 2 \\
 1 \div 10 = 1
 \end{array}
 \quad
 \begin{array}{r}
 s1 \\
 \hline
 0 \\
 + 3 \\
 + 2 \\
 + 1 \\
 \hline
 6
 \end{array}
 \quad
 \begin{array}{r}
 s2 \\
 \hline
 1 \\
 \times 3 \\
 \times 2 \\
 \times 1 \\
 \hline
 6
 \end{array}$$



Home work:

1.  $n=10 \rightarrow 1\ 2\ 3\ 9\ 4\ 5\ 6\ 18\ 7\ 8\ 9\ 27\ 10$

2.  $n=5 \rightarrow 1 - 2 + 3 - 4 + 5 = 3$

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

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