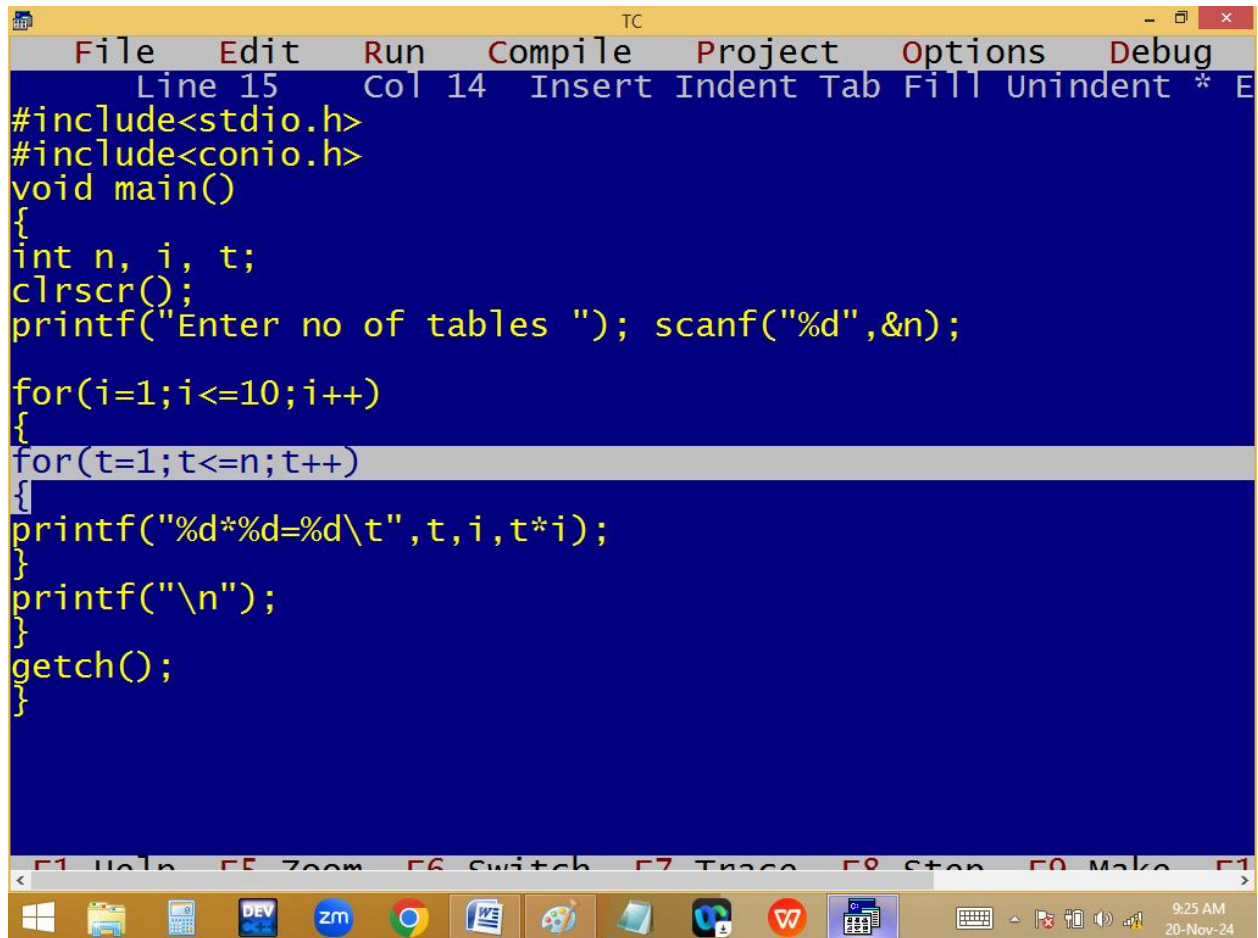


Tables side by side:



The screenshot shows the Turbo C++ (TC) IDE with a C program designed to print multiplication tables side by side. The program uses nested loops: an outer loop for the multiplier (i) from 1 to 10, and an inner loop for the multiplicand (t) from 1 to the user-defined value n. The output format is "%d*%d=%d\t", which prints the multiplication result followed by a tab character, ensuring the tables are aligned horizontally. The user is prompted to enter the number of tables (n) at the start of the program.

```
TC
File Edit Run Compile Project Options Debug
Line 15 Col 14 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int n, i, t;
clrscr();
printf("Enter no of tables "); scanf("%d",&n);

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

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

9:25 AM 20-Nov-24

```
TC
Enter no of tables 3
1*1=1    2*1=2    3*1=3
1*2=2    2*2=4    3*2=6
1*3=3    2*3=6    3*3=9
1*4=4    2*4=8    3*4=12
1*5=5    2*5=10   3*5=15
1*6=6    2*6=12   3*6=18
1*7=7    2*7=14   3*7=21
1*8=8    2*8=16   3*8=24
1*9=9    2*9=18   3*9=27
1*10=10  2*10=20  3*10=30
```

```
for( i=1; i<=10; i++ )
{
for( t=1; t<=3; t++ )
{
p(t*i\t);
}
p("\n");
}
```

$\frac{t}{1 \ 2 \ 3 \ 4 \ 5}$ $\frac{i}{1}$

1 2 3 4 * 2

1 3

-

-

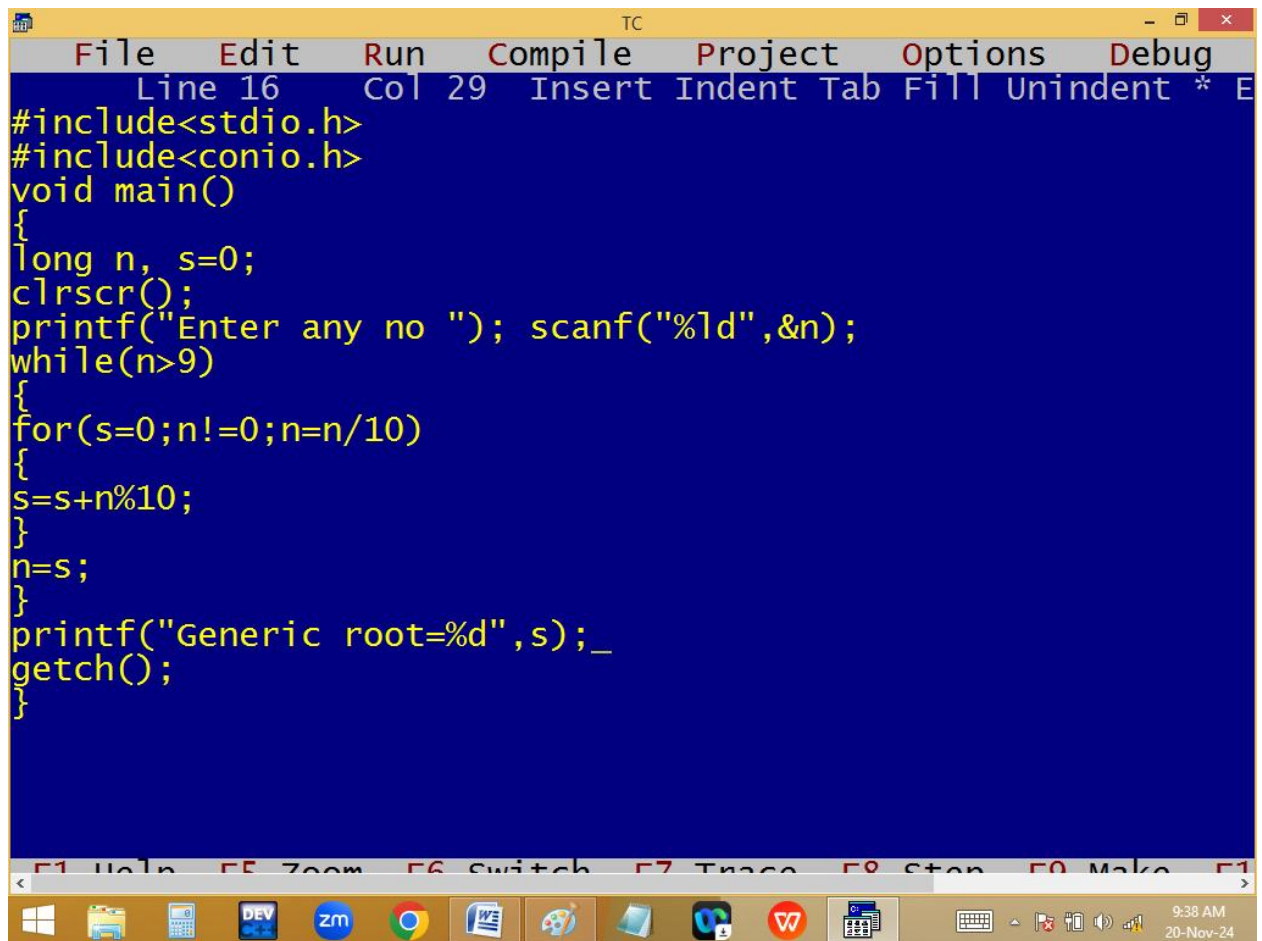
10

90

1*1=1 2*1=2 3*1=3 10*1=10

Finding generic root of given no.

$$5677 = 5+6+7+7=25 \rightarrow 2+5=7$$

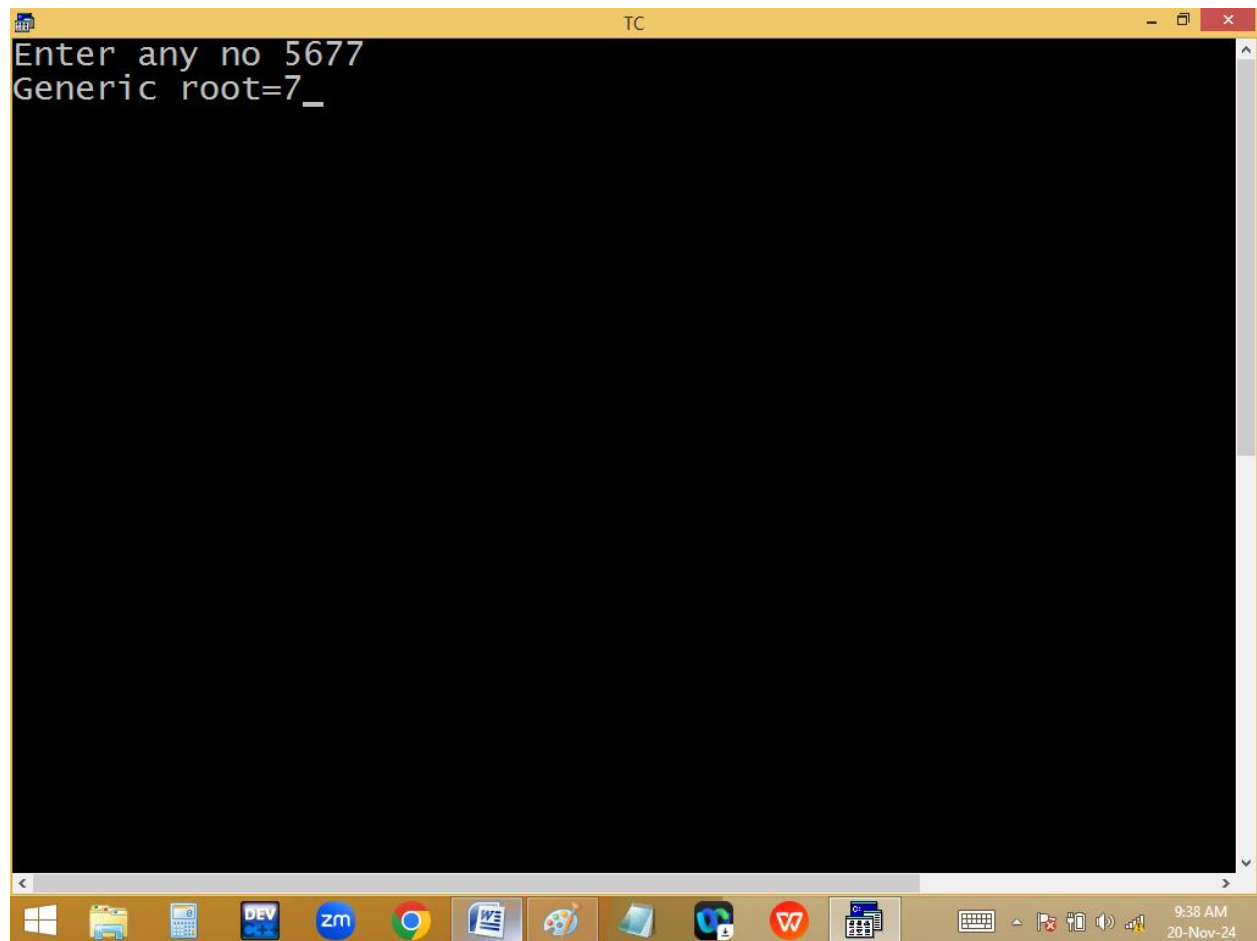


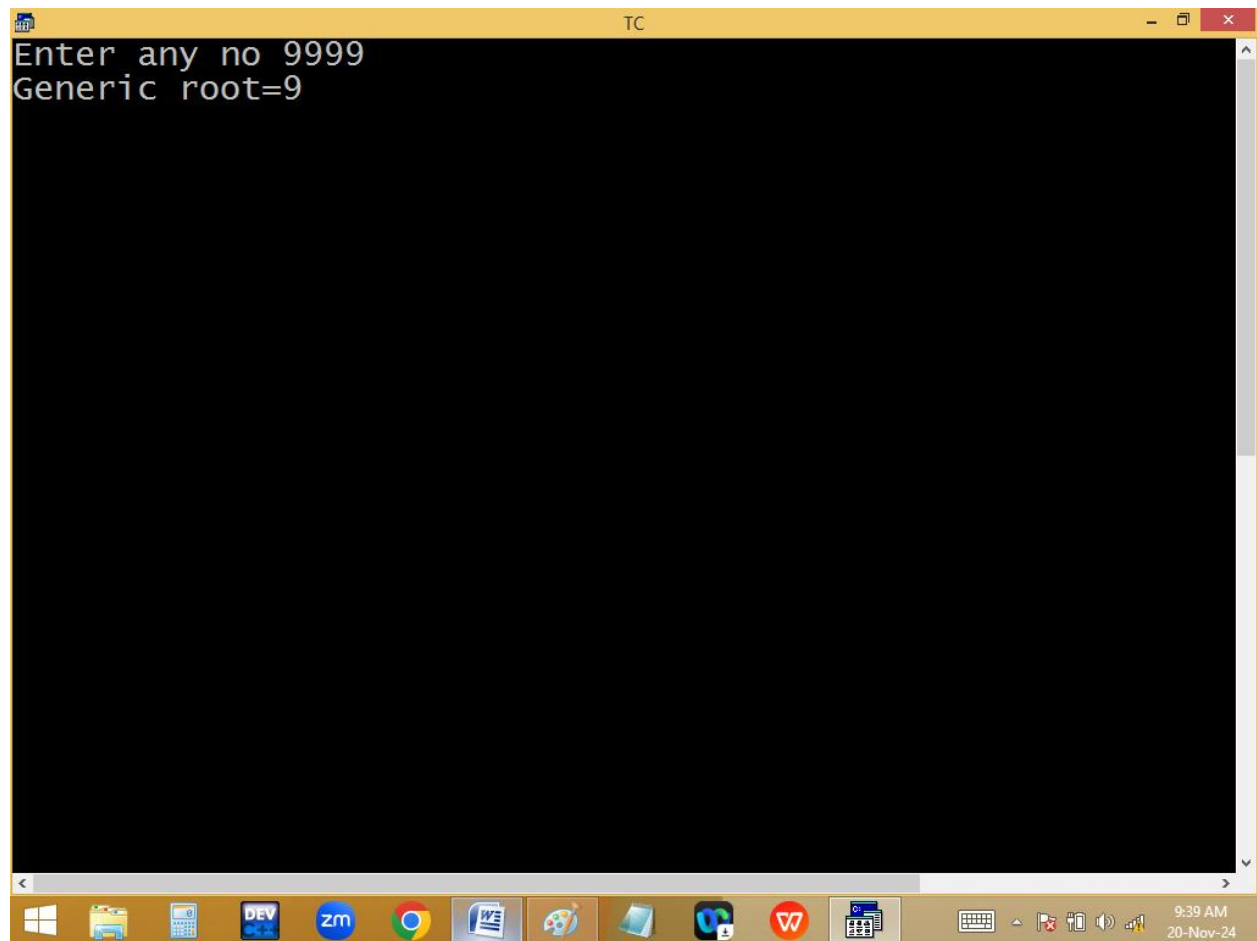
The image shows a screenshot of a Turbo C++ (TC) IDE window. The window has a yellow title bar with the text "TC" and standard window controls. The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". Below the menu bar, a status bar shows "Line 16", "Col 29", and a list of keyboard shortcuts: "Insert", "Indent", "Tab", "Fill", "Unindent", "*", and "E". The main editing area has a blue background with yellow text. The code is a C program that calculates the generic root of a number. It includes headers for `stdio.h` and `conio.h`, and defines a `main` function. Inside `main`, it declares a long integer `n` and an integer `s` initialized to 0. It calls `clrscr()` to clear the screen, then prints a prompt "Enter any no " and reads an integer `n` using `scanf`. A `while` loop runs as long as `n` is greater than 9. Inside the loop, a `for` loop iterates from `s=0` to `n!=0`, updating `s` with the sum of its current value and `n%10`, and then dividing `n` by 10. After the loop, it prints "Generic root=%d", `s`, followed by a blank line and a call to `getch()` to wait for a key press. The bottom of the window shows a Windows taskbar with various application icons and a system clock indicating 9:38 AM on 20-Nov-24.

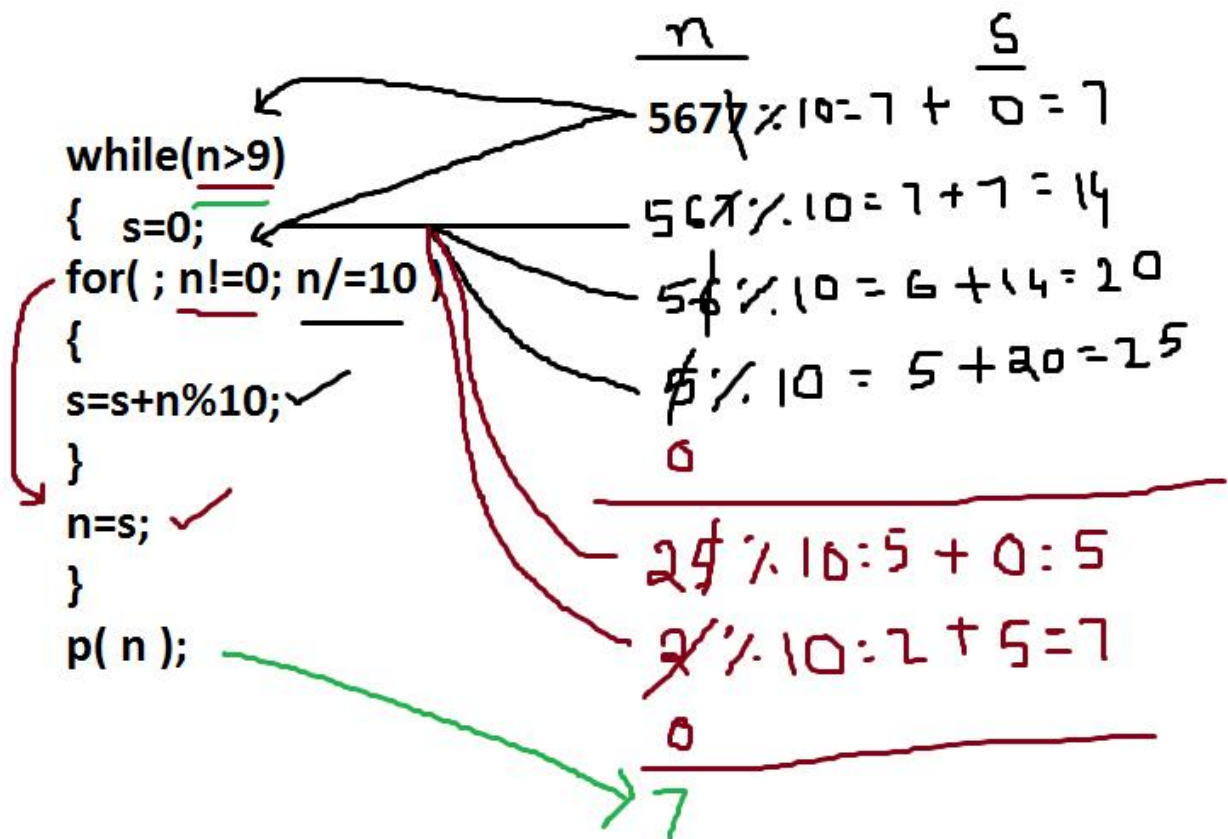
```
File Edit Run Compile Project Options Debug
Line 16 Col 29 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
long n, s=0;
clrscr();
printf("Enter any no "); scanf("%ld",&n);
while(n>9)
{
for(s=0;n!=0;n=n/10)
{
s=s+n%10;
}
n=s;
}
printf("Generic root=%d",s);_
getch();
}
```

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

9:38 AM
20-Nov-24







Finding strong no or not?

1 factorial is 1

2 factorial is 2

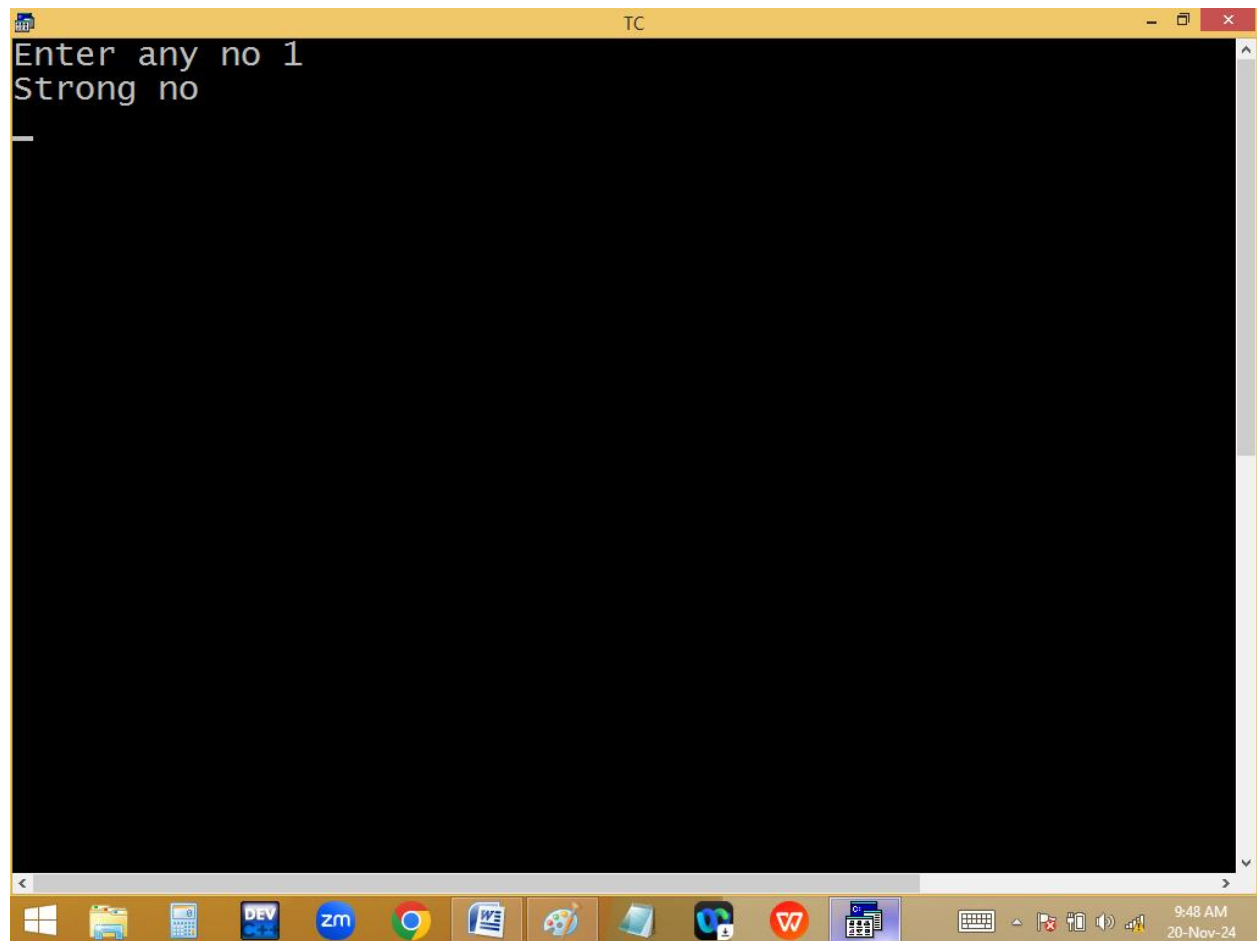
145 $\rightarrow 1! + 4! + 5! = 1 + 24 + 120 = 145$

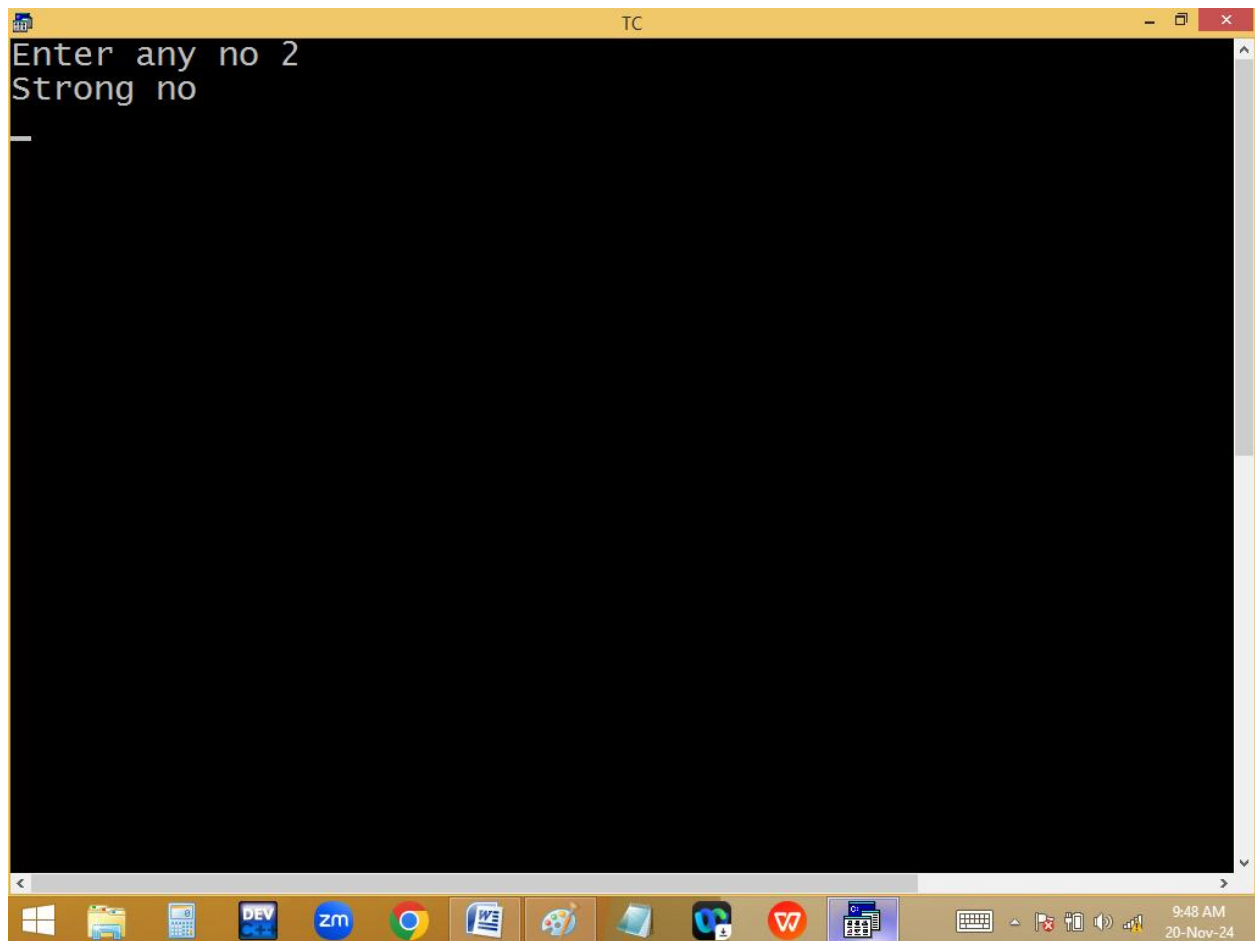
123 $\rightarrow 1! + 2! + 3! = 1 + 2 + 6 = 9 \leftarrow$ not a strong no

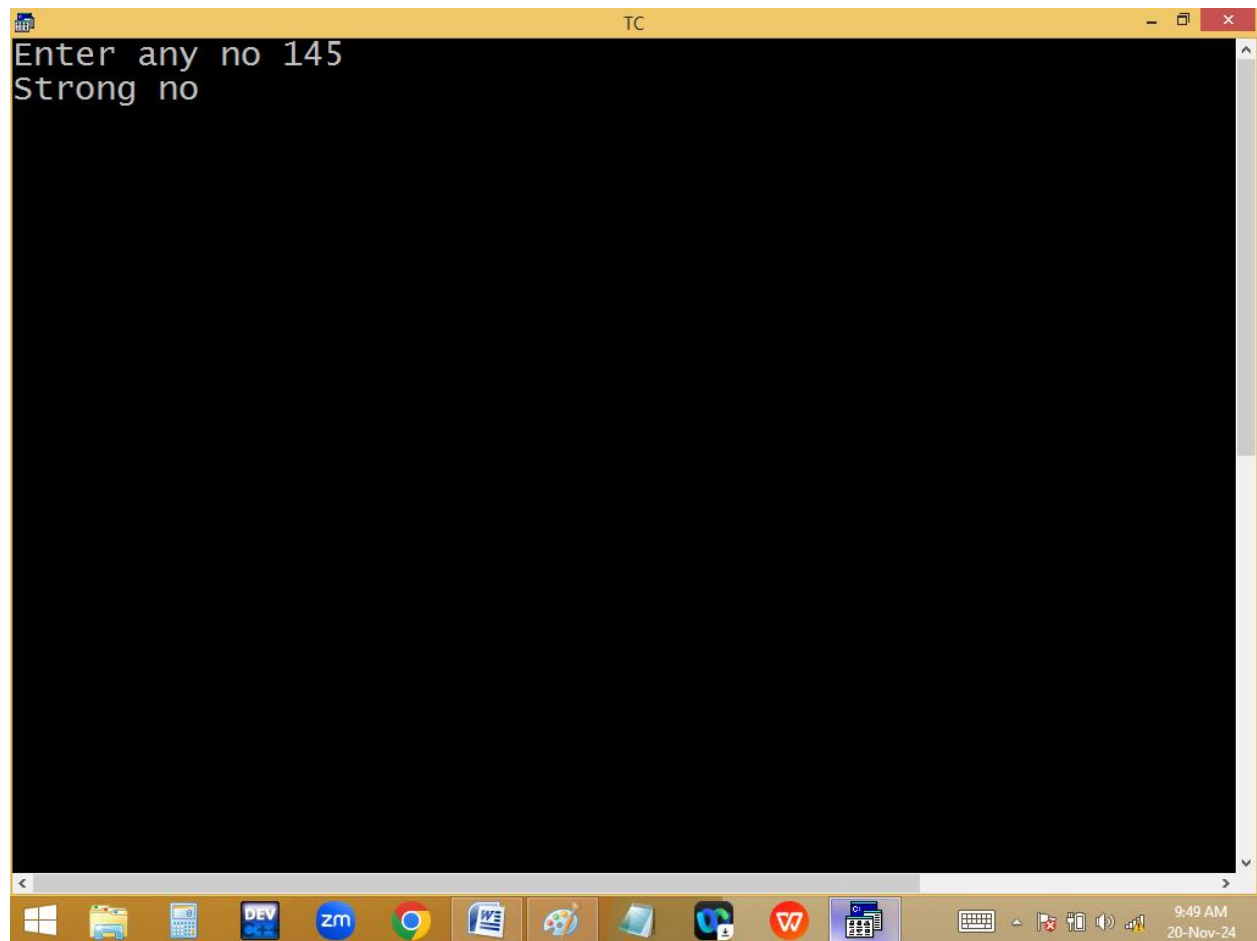
```
TC
File Edit Run Compile Project Options Debug
Line 16 Col 42 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int n,m,r,f,s=0;
clrscr();
printf("Enter any no "); scanf("%d",&n);
for(m=n;m!=0;m=m/10)
{
for(r=m%10,f=1;r>1;r--)
{
f=f*r;
}
s+=f;
}
puts(n==s?"Strong no":"Not a Strong no");
getch();
}
```

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

9:48 AM
20-Nov-24







```

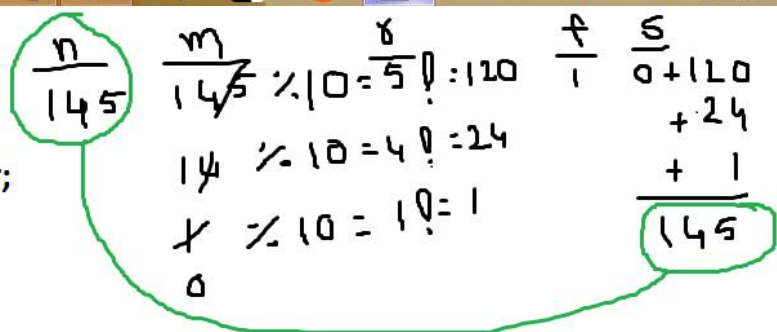
Enter any no 123
Not a Strong no

```

```

for(m=n;m!=0;m/=10)
{
for(r=m%10,f=1;r>1;r--)f=f*r;
s=s+f;
}
puts(n==s?"Strong":"Not");

```



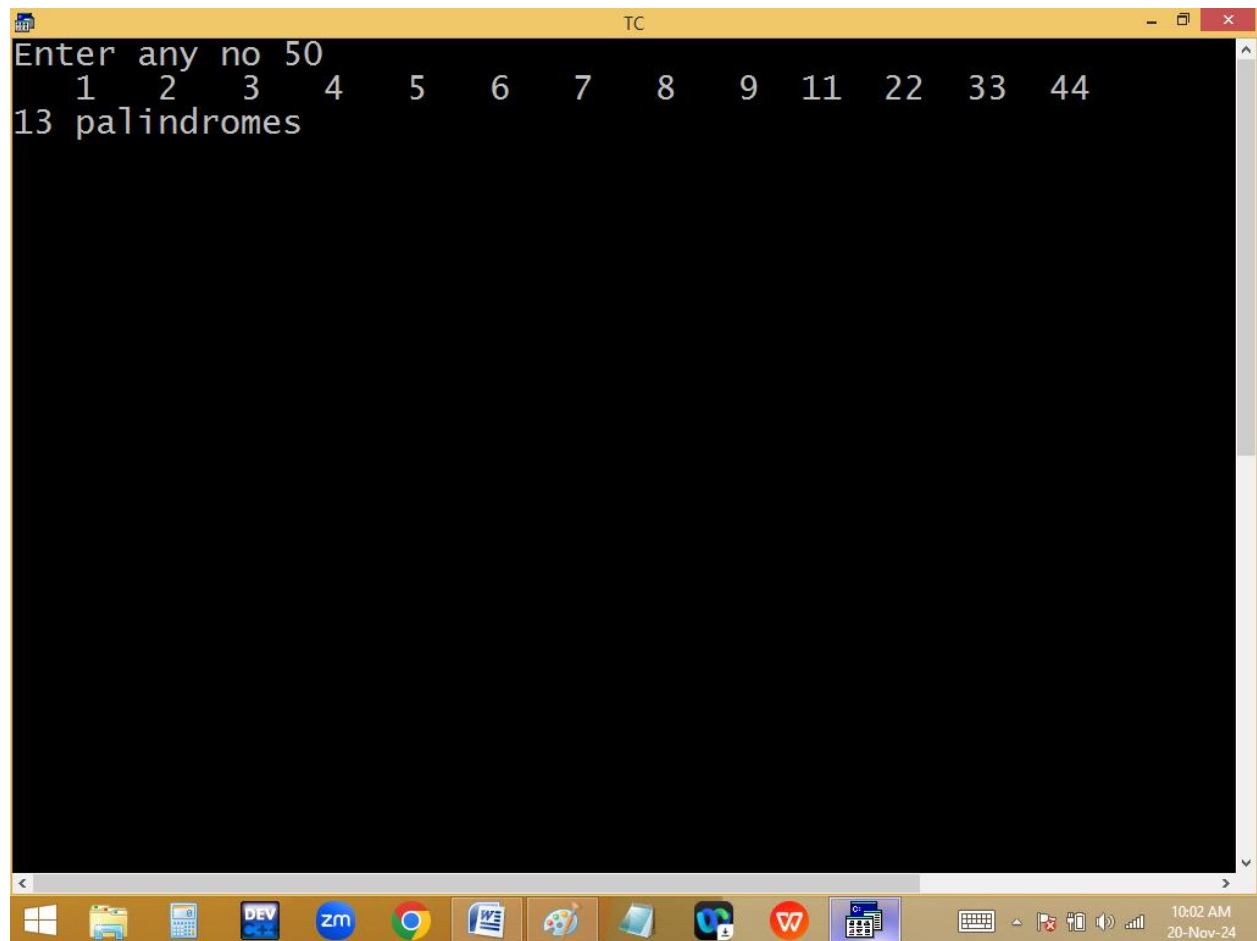
Printing 1..n palindrome no's and count:

n=50 → 1...9

```
TC
File Edit Run Compile Project Options Debug
Line 17 Col 30 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,r,rev,c=0;
clrscr();
printf("Enter any no "); scanf("%d",&n);
for(a=1;a<=n;a++)
{
for(b=a,rev=0;b!=0;b/=10)
{
r=b%10;
rev=rev*10+r;
}
if(a==rev)printf("%4d",a,c++);
}
printf("\n%d palindromes",c);_
getch();
}
```

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

10:02 AM
20-Nov-24



```

Enter any no 200
1 2 3 4 5 6 7 8 9 11 22 33 44 55 66
121 131 141 151 161 171 181 191
28 palindromes_

```

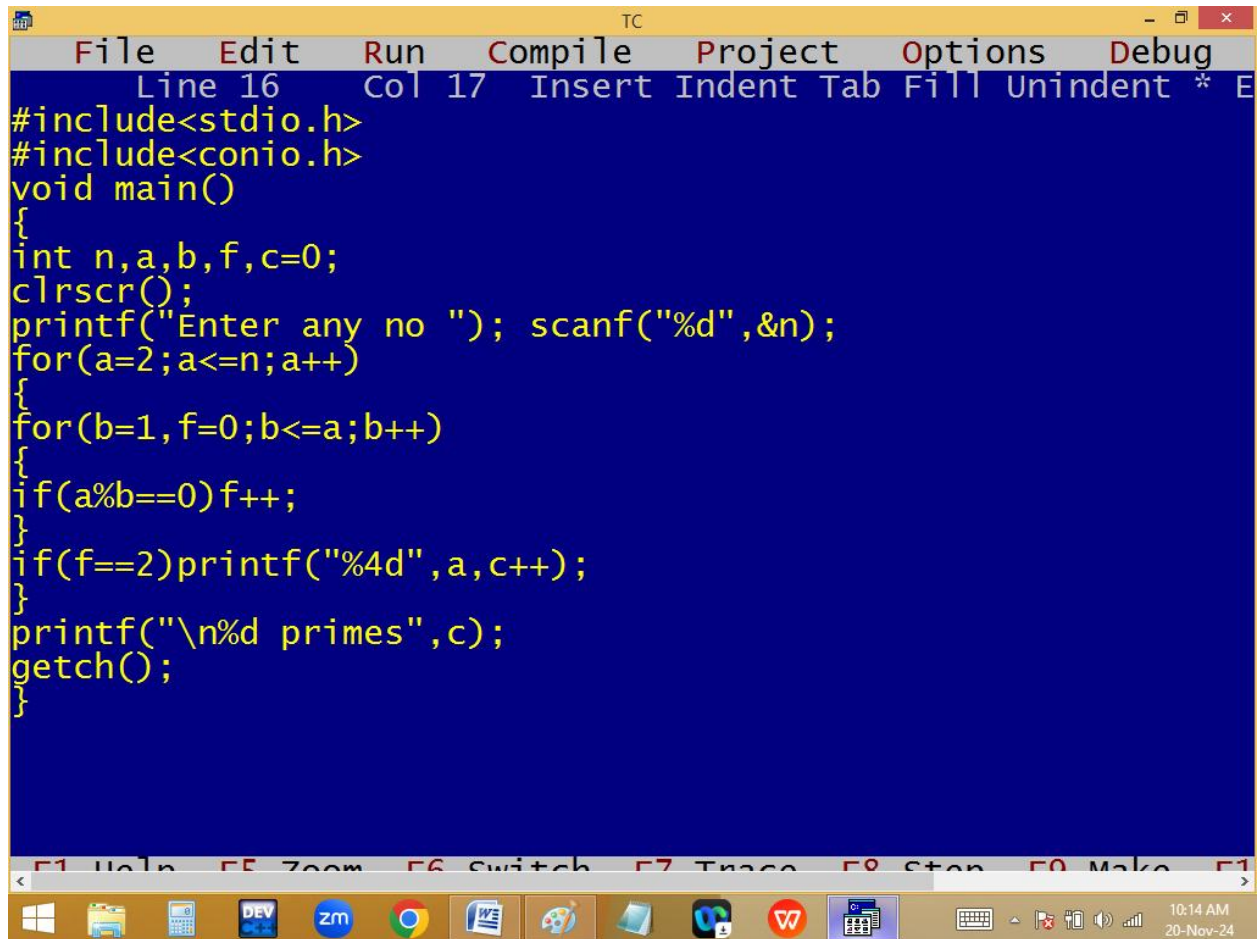
```

for( a=1; a<=n; a++ )
{
for(b=a, rev=0; b!=0; b/=10)
{
r=b%10;
rev=rev*10+r;
}
puts(a==rev)p(a,c++);
}
p(c no of palindromes");

```

$\frac{n}{50}$	$\frac{a}{1}$	$\frac{b}{1\%10=1}$	$\frac{r}{0 \times 10 + 1 = 1}$	$\frac{c}{0}$
✓	1			1
✓	2	$2\%10=2$	$0 \times 10 + 2 = 2$	2
				9
x 10		$1\%10=0$	$0 \times 10 + 0 = 0$	10
		$1\%10=1$	$0 \times 10 + 1 = 1$	
✓ 11		$1\%10=1$	$0 \times 10 + 1 = 1$	
		$1\%10=1$	$1 \times 10 + 1 = 11$	
50				

Print 1..n primes and count:

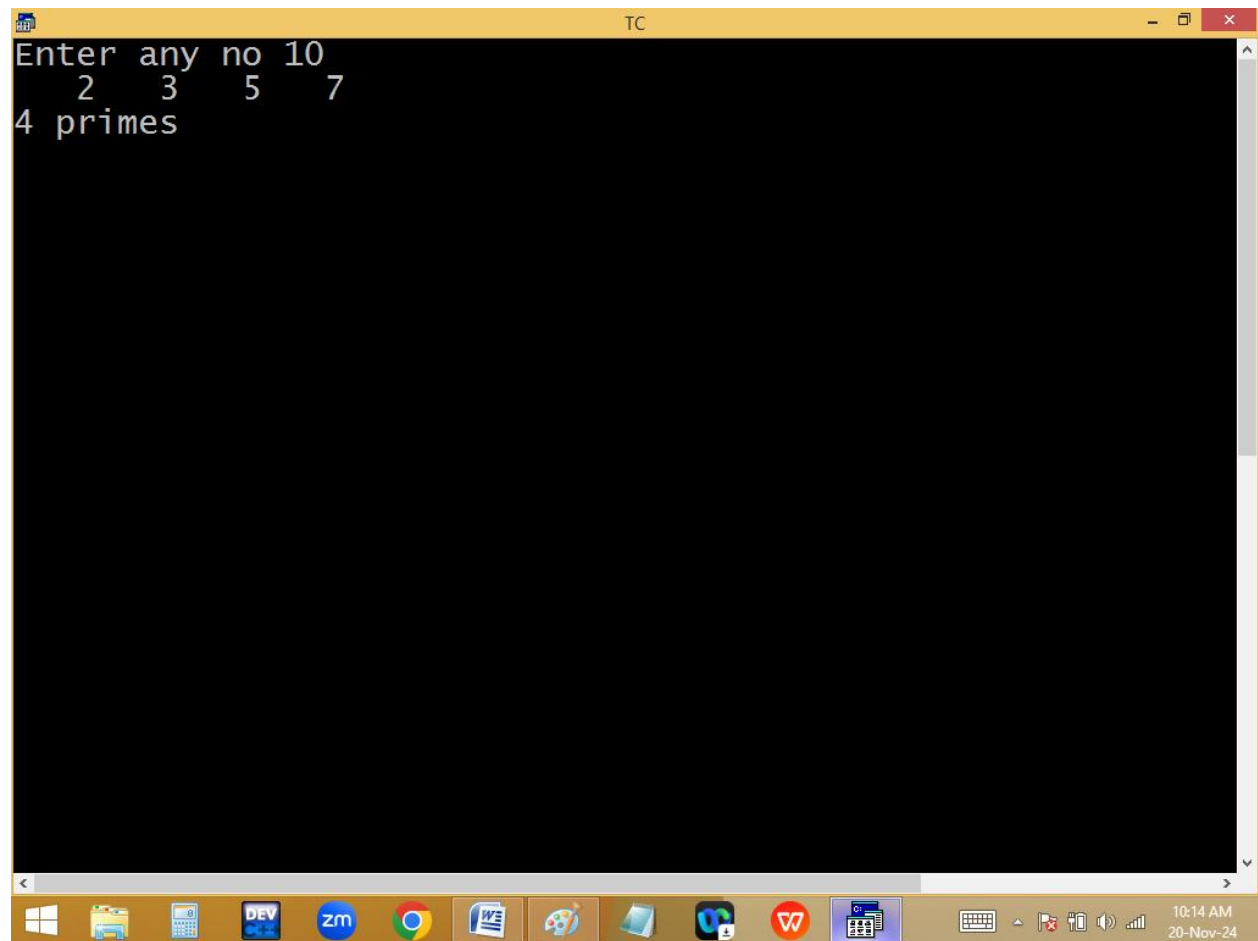


The image shows a screenshot of a Turbo C++ (TC) IDE window. The title bar reads "TC". The menu bar includes "File", "Edit", "Run", "Compile", "Project", "Options", and "Debug". Below the menu bar, a status bar shows "Line 16", "Col 17", and a list of keyboard shortcuts: "Insert", "Indent", "Tab", "Fill", "Unindent", "*", and "E". The main editing area has a dark blue background with yellow text. It contains a C program that calculates the number of prime numbers up to a given value 'n'. The code is as follows:

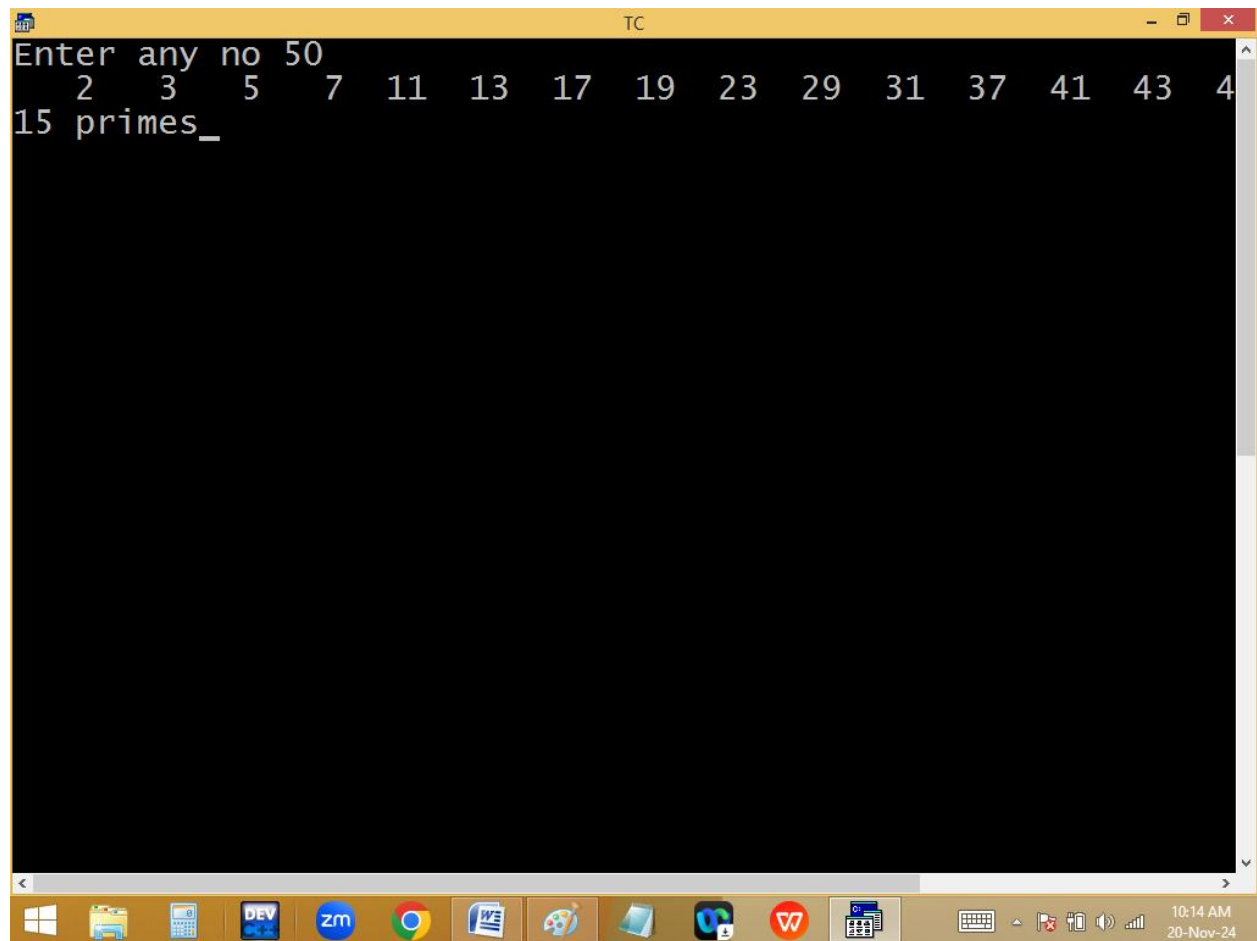
```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,f,c=0;
clrscr();
printf("Enter any no "); scanf("%d",&n);
for(a=2;a<=n;a++)
{
for(b=1,f=0;b<=a;b++)
{
if(a%b==0)f++;
}
if(f==2)printf("%4d",a,c++);
}
printf("\n%d primes",c);
getch();
}
```

At the bottom of the window, there is a toolbar with icons for various functions, and a status bar on the far right showing the time "10:14 AM" and the date "20-Nov-24".

```
TC
Enter any no 10
2 3 5 7
4 primes
```



```
TC
Enter any no 50
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
15 primes_
```



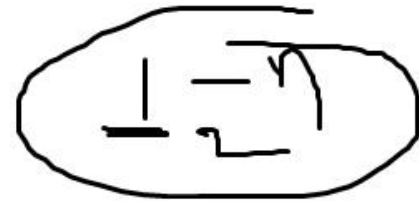
```

for ( a=2; a<=n ; a++ ) ✓
{
  for(b =1;b<=a; b++)
  {
    if(a%b==0)f++;
  }
  if(f==2)p(a,c++);
}
p(c no of primes);

```

$$\frac{n}{10} \quad \frac{a}{2} \% 1 = 0$$

$$\frac{a}{2} = 0$$



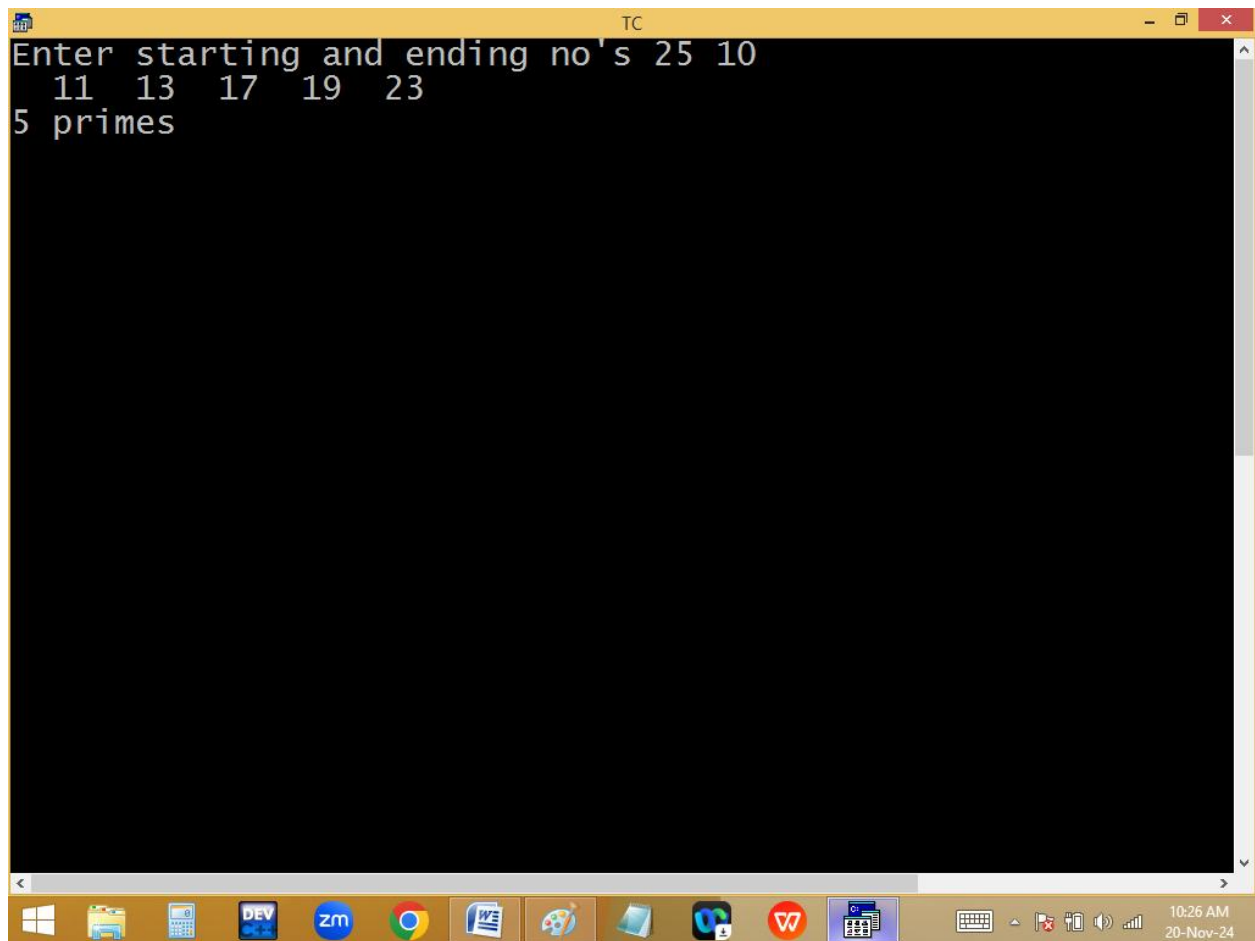
$\frac{n}{10}$	$\frac{a}{2} \% 1 = 0$	$\frac{b}{1} = 0$	$\frac{f}{012}$	$\frac{c}{0}$
✓	2 % 1 = 0		✓	1
✓	3 % 1 = 0		012 ✓	2
	3 % 3 = 0			
✗	4 % 1 = 0		0123	
	4 % 2 = 0			
✓	4 % 4 = 0			3
	5 % 1 = 0		012	
	5 % 5 = 0			

Print n to n primes and count:

```
TC
File Edit Run Compile Project Options Debug
Line 9 Col 28 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,f,c=0;
clrscr();
printf("Enter starting and ending no's ");
scanf("%d%d",&a,&n);
if(a>n){int t=a; a=n;n=t; }_
for(;a<=n;a++)
{
for(b=1,f=0;b<=a;b++)
{
if(a%b==0)f++;
}
if(f==2)printf("%4d",a,c++);
}
printf("\n%d primes",c);
getch();
}
```

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

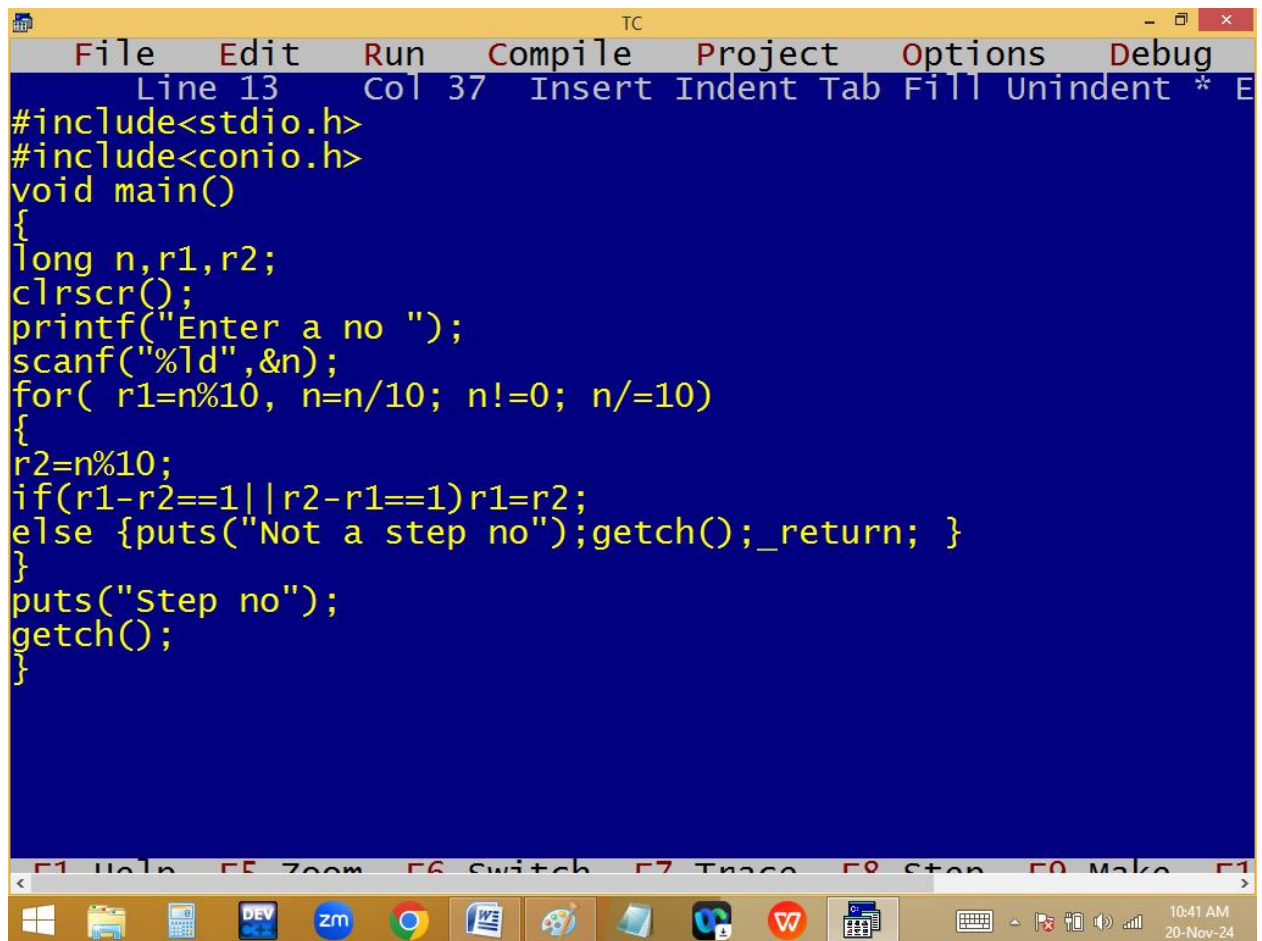
10:26 AM
20-Nov-24



```
TC
Enter starting and ending no's 25 10
11 13 17 19 23
5 primes
```

Finding step no:

1234 → all the digits difference is 1

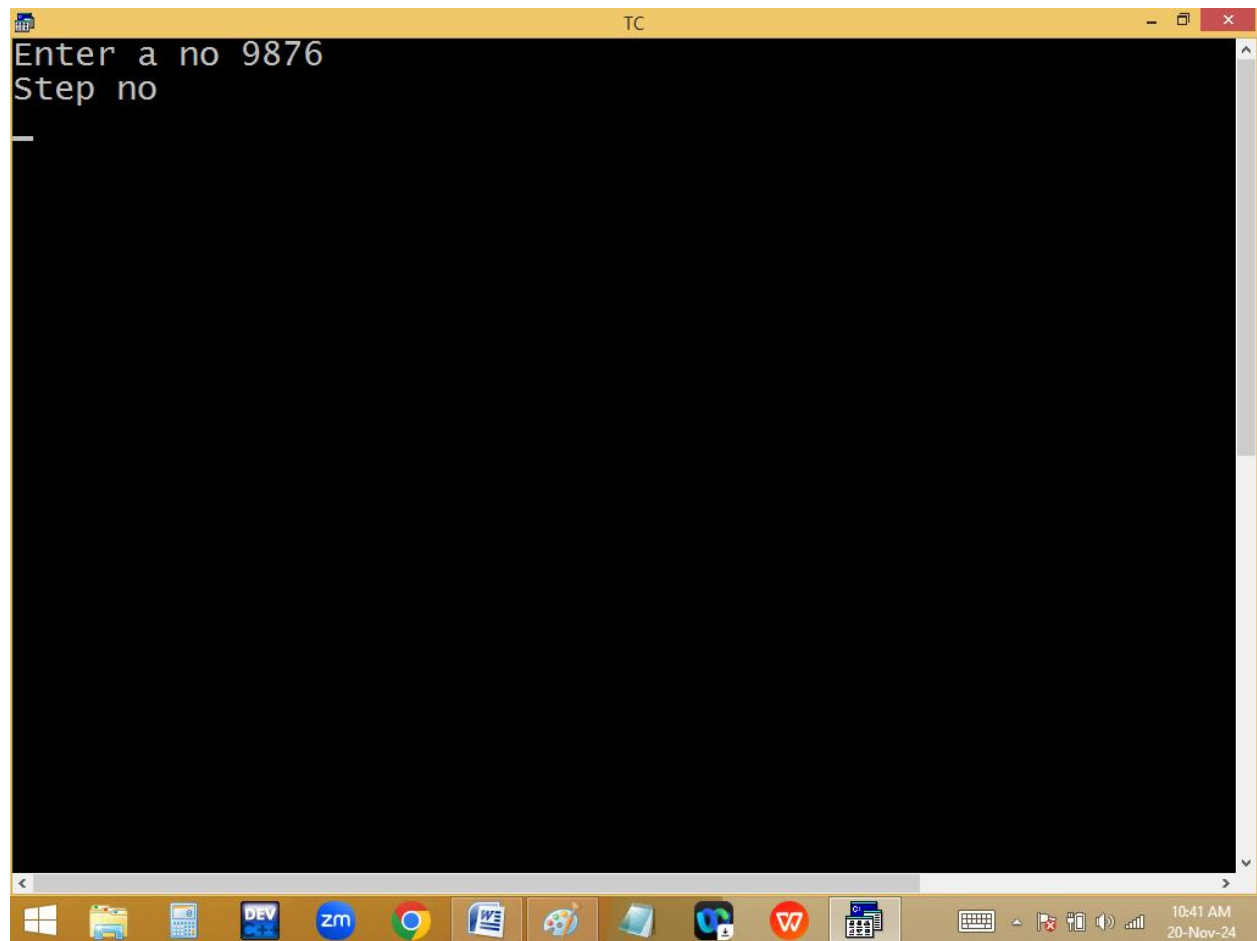


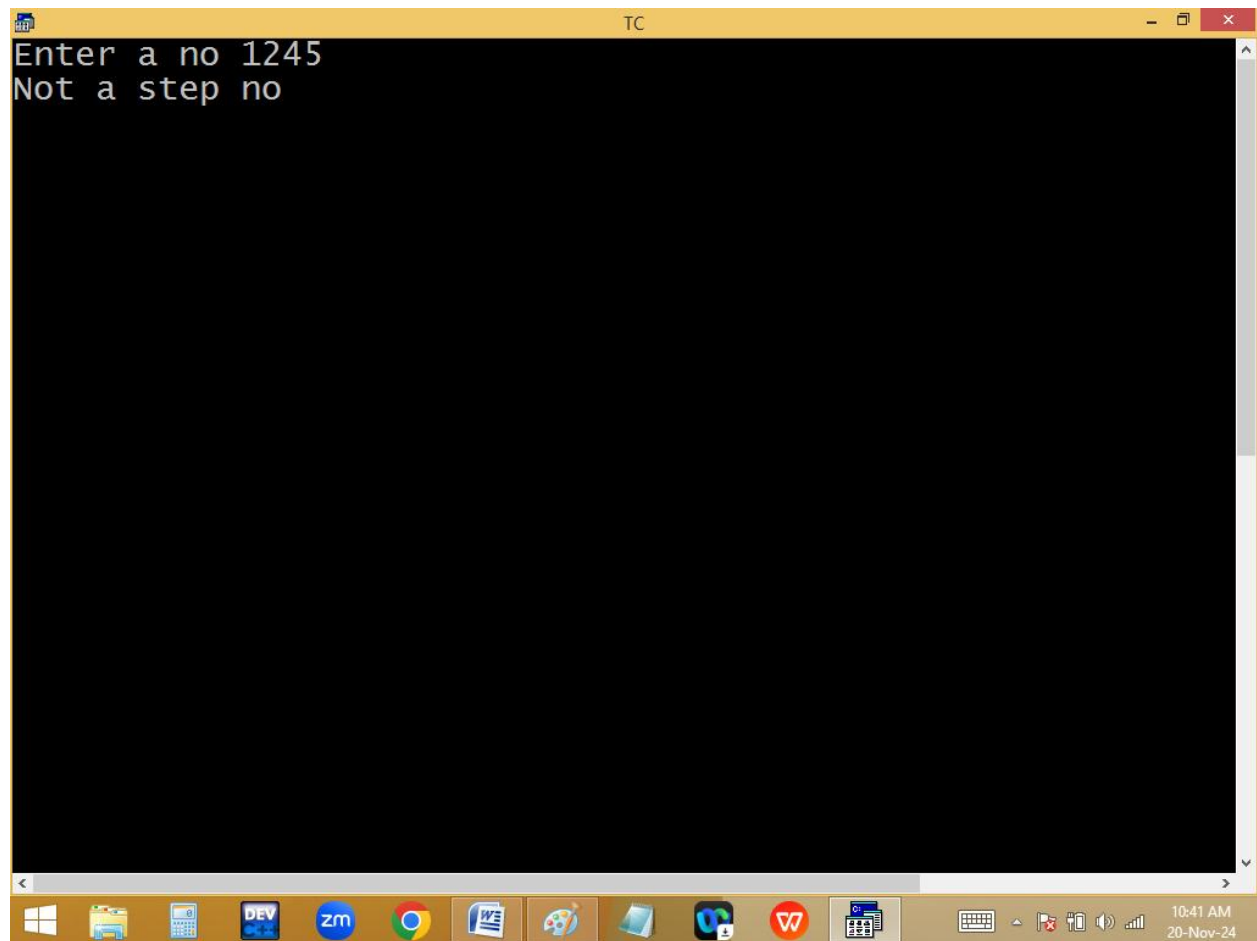
```
TC
File Edit Run Compile Project Options Debug
Line 13 Col 37 Insert Indent Tab Fill Unindent * E
#include<stdio.h>
#include<conio.h>
void main()
{
long n,r1,r2;
clrscr();
printf("Enter a no ");
scanf("%ld",&n);
for( r1=n%10, n=n/10; n!=0; n/=10)
{
r2=n%10;
if(r1-r2==1||r2-r1==1)r1=r2;
else {puts("Not a step no");getch();_return; }
}
puts("Step no");
getch();
}
```

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

10:41 AM
20-Nov-24







Automorphic no:

$$n=5 \rightarrow 5 * 5 = 25$$

$$n=25 \rightarrow 25 * 25 \rightarrow 625$$