

## 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 are  $1+2=3$   $\leftarrow$  not a perfect no

```
TC
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/2; i++ )
{
if(n%i==0)s+=i;
}
puts(n==s?"Perfect no":"Not a Perfect no");
getch();
}
```

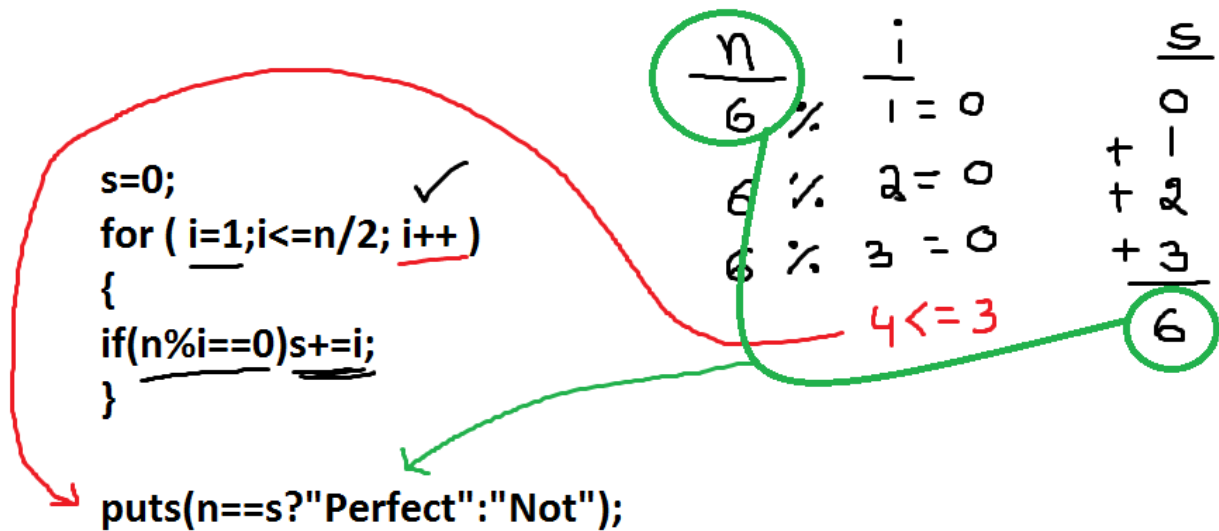
TC

Enter the no 6  
Perfect no

02:22 PM  
25-Aug-25

```
TC
Enter the no 28
Perfect no
```

```
TC
Enter the no 4
Not a Perfect no
```



## Finding prime/ composite no?

When a no is having only 2 factors then it is a prime

Or

The no divisible with 1 and itself only is a prime.

$1 \% 1 = 0 \leftarrow$  composite no

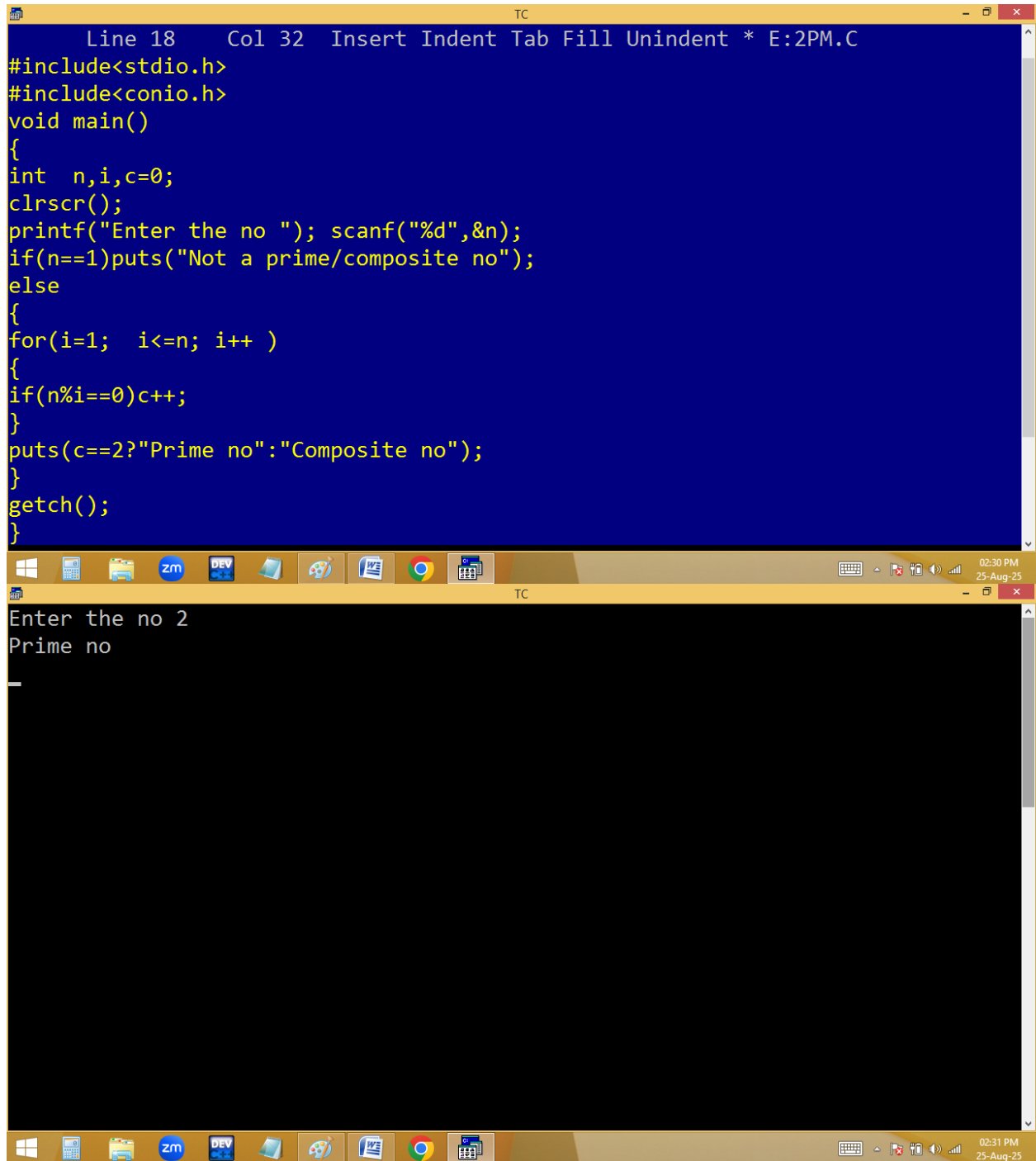
$1 \% 1 = 0$

$1 \% 1 = 0 \leftarrow$  prime no

2 factors are 1, 2

3 factors are 1, 3

4 factors are 1, 2, 4 ← composite no



```
Line 18 Col 32 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,c=0;
clrscr();
printf("Enter the 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();
}
```

Enter the no 2  
Prime no

Enter the no 4  
Composite no

```
TC
Enter the no 3
Prime no
```

```
TC
Enter the no 4
Composite no
```

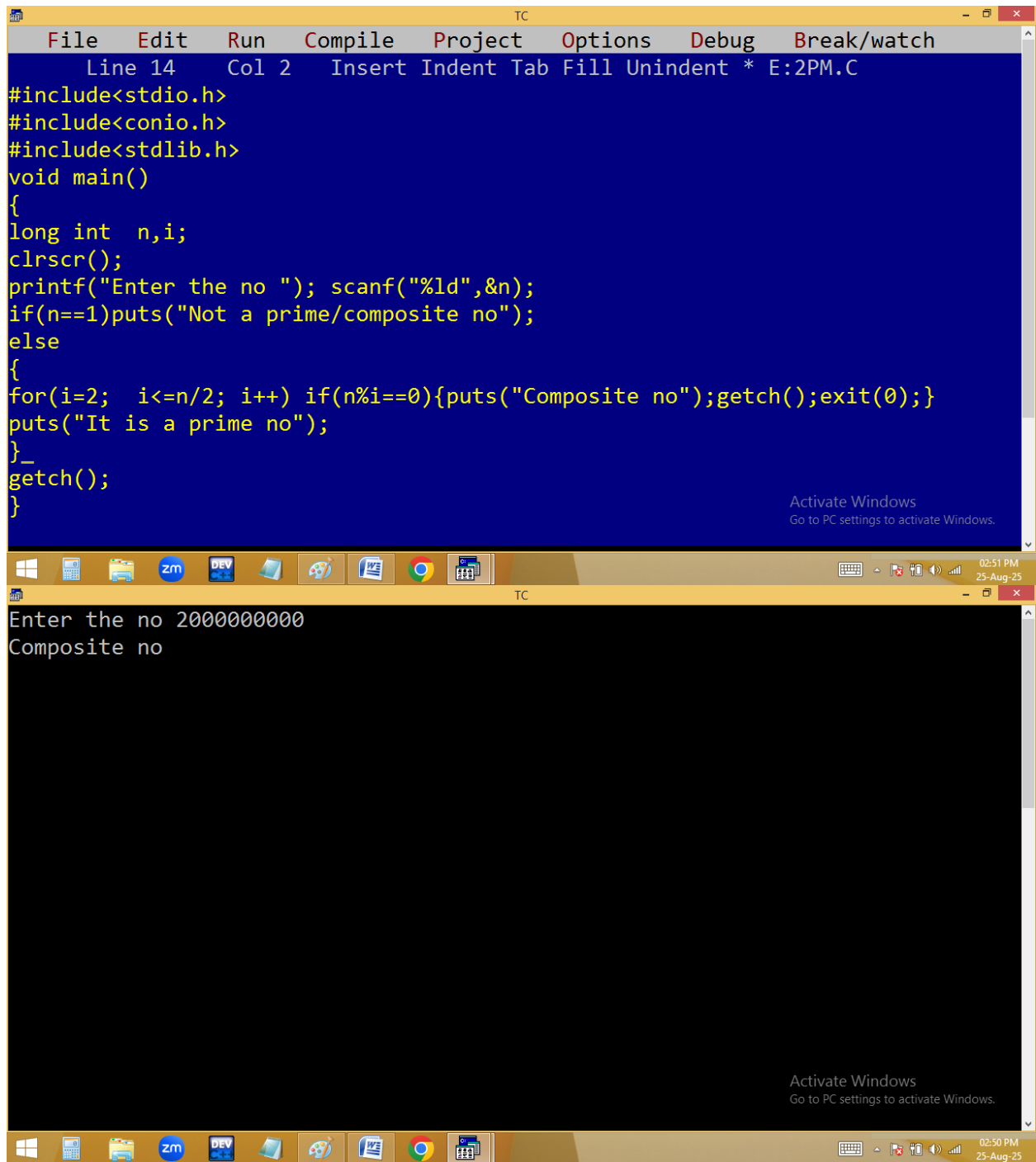
```
TC
Enter the no 1
Not a prime/composite no
```

```
c=0;
for ( i=1; i<=n ; i++)
{
    if(n%i==0) c++;
}
```

```
puts(c==2?"prime ":"Not");
```

<u>n</u>	<u>i</u>	<u>c</u>	<u>n</u>	<u>i</u>	<u>c</u>
<del>6</del>	1 = 0	1	5	1 = 0	0
6	2 = 0	2	5	2 = 1	1
6	3 = 0	3	5	3 = 2	2
6	4 = 0	4	5	4 = 1	
6	5 = 0		5	5 = 0	

## Method2:



The image shows two overlapping windows of the Turbo C++ (TC) IDE. The top window is the source code editor, displaying a C program for checking if a number is prime or composite. The bottom window is the output console, showing the program's execution results.

**Top Window (Source Code):**

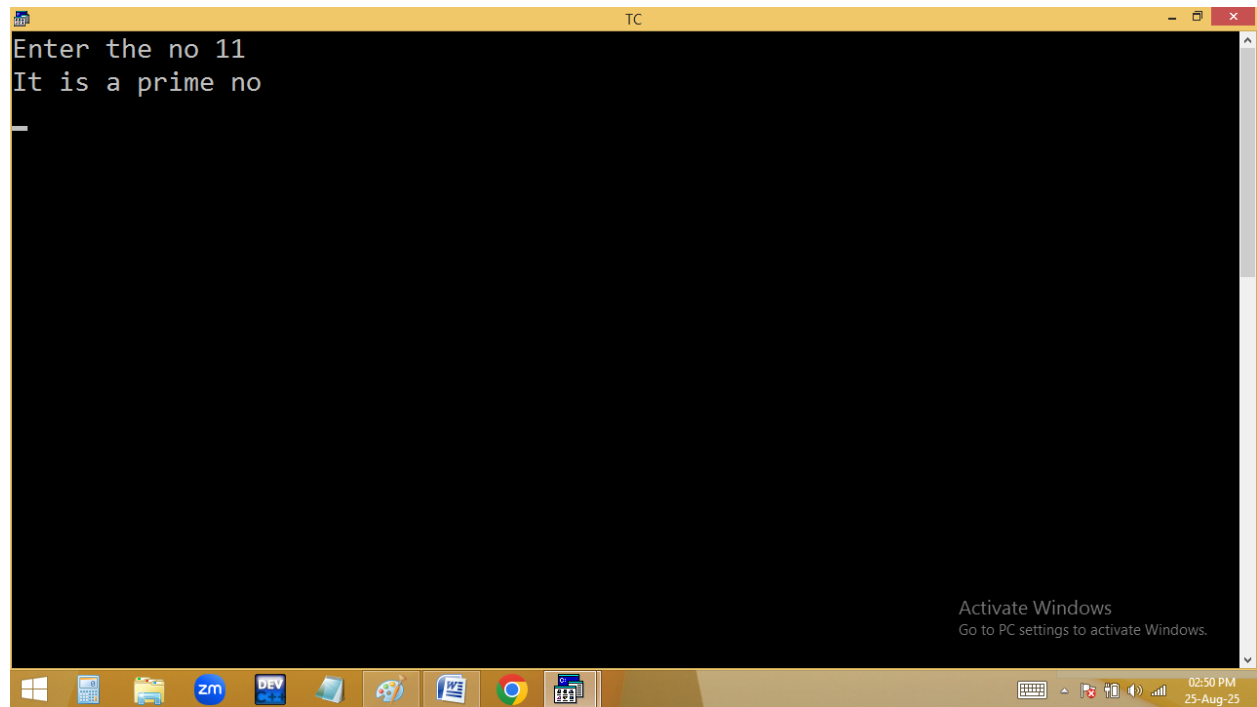
```
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 2 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
    long int n,i;
    clrscr();
    printf("Enter the no "); scanf("%ld",&n);
    if(n==1)puts("Not a prime/composite no");
    else
    {
        for(i=2; i<=n/2; i++) if(n%i==0){puts("Composite no");getch();exit(0);}
        puts("It is a prime no");
    }_
    getch();
}
```

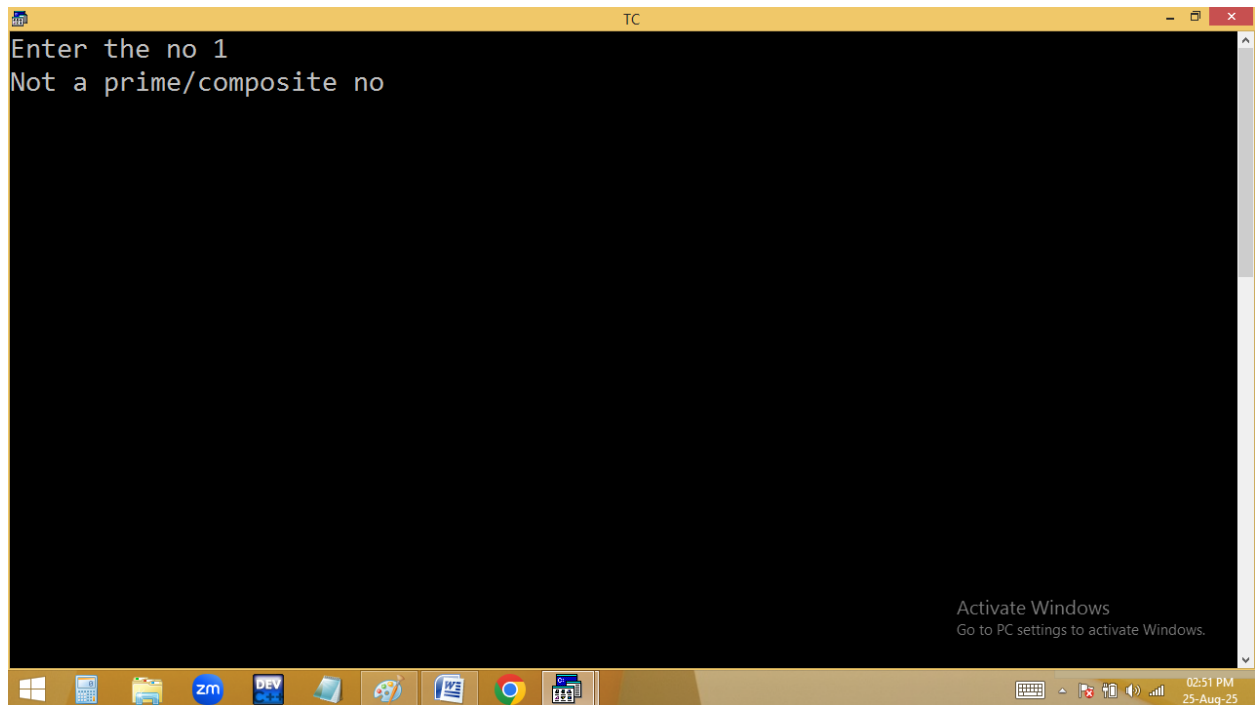
**Bottom Window (Output):**

```
Enter the no 2000000000
Composite no
```

Both windows include a taskbar at the bottom with various application icons and a system tray showing the time as 02:51 PM and 02:50 PM on 25-Aug-25. An "Activate Windows" watermark is visible in the bottom right corner of both windows.







10 ==> ~~1~~ 2 5 ~~10~~  
100 ==> ~~1~~ 2 4 5 10 20 25 50 ~~100~~  
5 ==> ~~1~~ ~~5~~

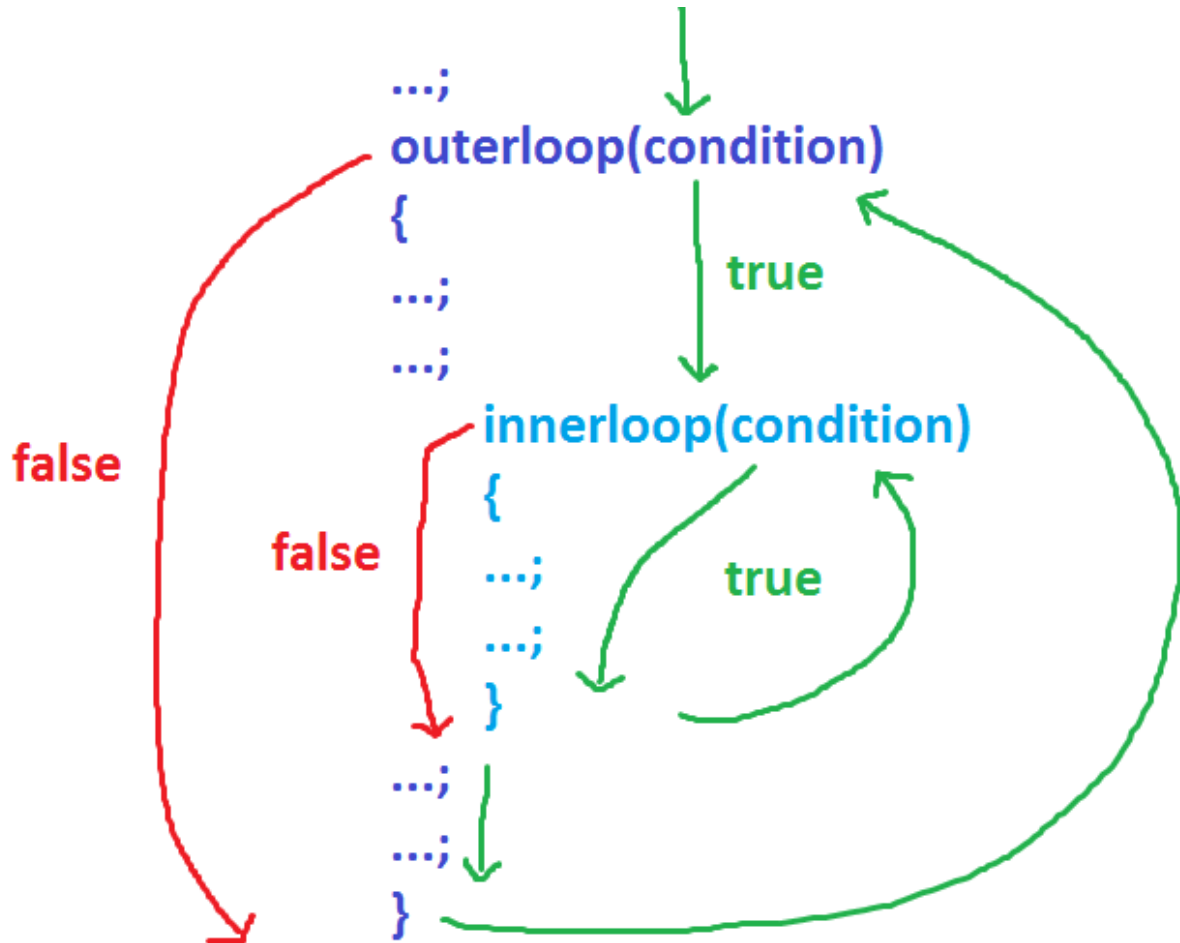
```
for( i=2; i<=n/2; i++ )  
{  
    if(n%2==0) { p(composite);exit(0);}  
}  
p(prime);
```

$$\frac{n}{2000000000} \div 2 = \frac{i}{0}$$

11 % 2 = 1  
11 % 3 = 2  
11 % 4 = 3  
11 % 5 = 1  
6

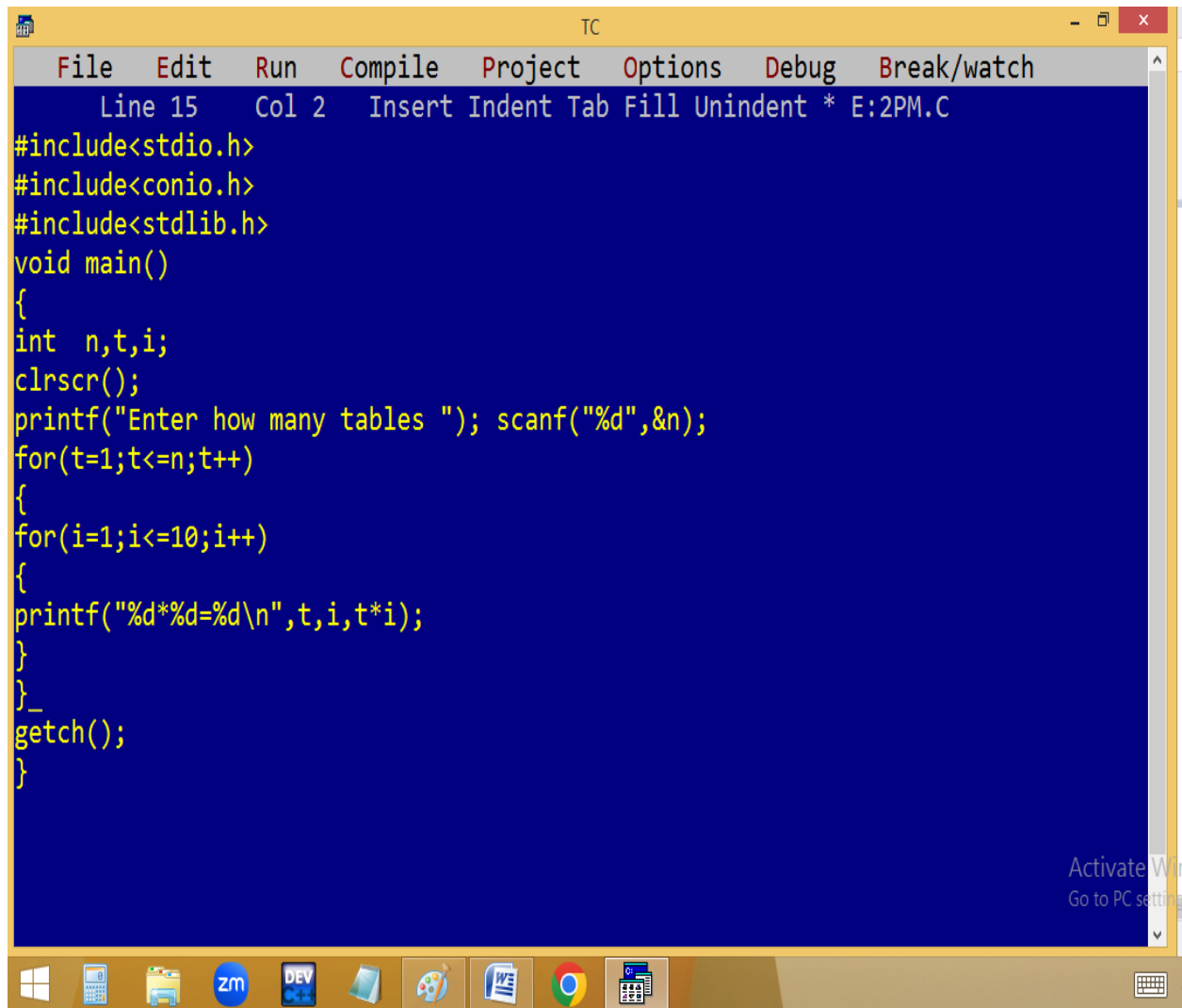
## Nested loops:

Loop within loop is called nested loop.



## Printing 1..n tables?

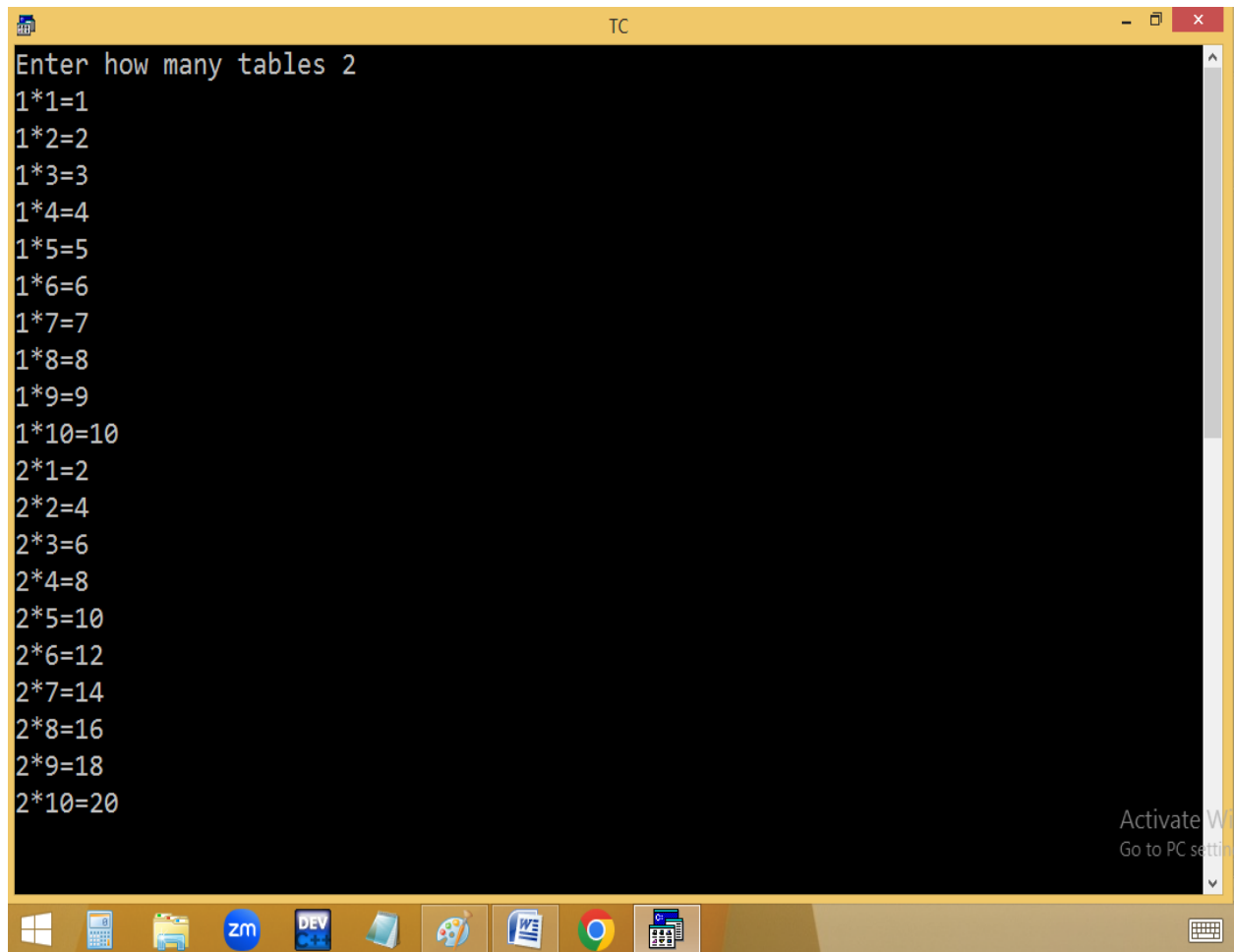
Print 1..3 tables



The image shows a screenshot of a Turbo C++ (TC) IDE window. The title bar at the top reads "TC". Below it is a menu bar with the following options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top of the editor area shows "Line 15 Col 2 Insert Indent Tab Fill Unindent \* E:2PM.C". The main editor area has a dark blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
int n,t,i;
clrscr();
printf("Enter how many tables "); scanf("%d",&n);
for(t=1;t<=n;t++)
{
for(i=1;i<=10;i++)
{
printf("%d*%d=%d\n",t,i,t*i);
}
}
getch();
}
```

In the bottom right corner of the editor area, there is a watermark that says "Activate Win" and "Go to PC setting". The Windows taskbar is visible at the bottom of the screen, showing icons for the Start menu, Task View, File Explorer, Zoom, DEV, a folder, a paint application, Word, Chrome, and a calendar. A keyboard icon is also present on the right side of the taskbar.



```
TC
Enter how many tables 2
1*1=1
1*2=2
1*3=3
1*4=4
1*5=5
1*6=6
1*7=7
1*8=8
1*9=9
1*10=10
2*1=2
2*2=4
2*3=6
2*4=8
2*5=10
2*6=12
2*7=14
2*8=16
2*9=18
2*10=20
Activate Windows
Go to PC settings
```

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

10 times

\* 3 times = 30 times

Side by side:

```
TC
#include<stdio.h>
#include<conio.h>
void main()
{
int n,t,i;
clrscr();
printf("Enter how many 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();
}
```

Enter how many tables 5

1*1=1	2*1=2	3*1=3	4*1=4	5*1=5
1*2=2	2*2=4	3*2=6	4*2=8	5*2=10
1*3=3	2*3=6	3*3=9	4*3=12	5*3=15
1*4=4	2*4=8	3*4=12	4*4=16	5*4=20
1*5=5	2*5=10	3*5=15	4*5=20	5*5=25
1*6=6	2*6=12	3*6=18	4*6=24	5*6=30
1*7=7	2*7=14	3*7=21	4*7=28	5*7=35
1*8=8	2*8=16	3*8=24	4*8=32	5*8=40
1*9=9	2*9=18	3*9=27	4*9=36	5*9=45
1*10=10	2*10=20	3*10=30	4*10=40	5*10=50

```

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

```

Red annotations: A red arrow points from the closing brace of the inner loop to the closing brace of the outer loop. Another red arrow points from the closing brace of the inner loop to the increment 't++' in the inner loop header. A third red arrow points from the closing brace of the inner loop to the increment 'i++' in the outer loop header.

$$\frac{n}{3}$$

t	i
1 2 3 4 x 1	
1 2 3 4 x 2	
	3
	:
1 2 3 4	10

1x1=1	2x1=2	3x1=3
1x2=2	2x2=4	3x2=6
-		

```
TC
Line 17 Col 10 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,t,i;
clrscr();
printf("Enter how many tables "); scanf("%d",&n);
for(t=1;t<=n;t++)
{
for(i=1;i<=10;i++)
{
printf("%4d",t*i);
}
printf("\n");
}
getch();
}

TC
Enter how many tables 10
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50
6 12 18 24 30 36 42 48 54 60
7 14 21 28 35 42 49 56 63 70
8 16 24 32 40 48 56 64 72 80
9 18 27 36 45 54 63 72 81 90
10 20 30 40 50 60 70 80 90 100

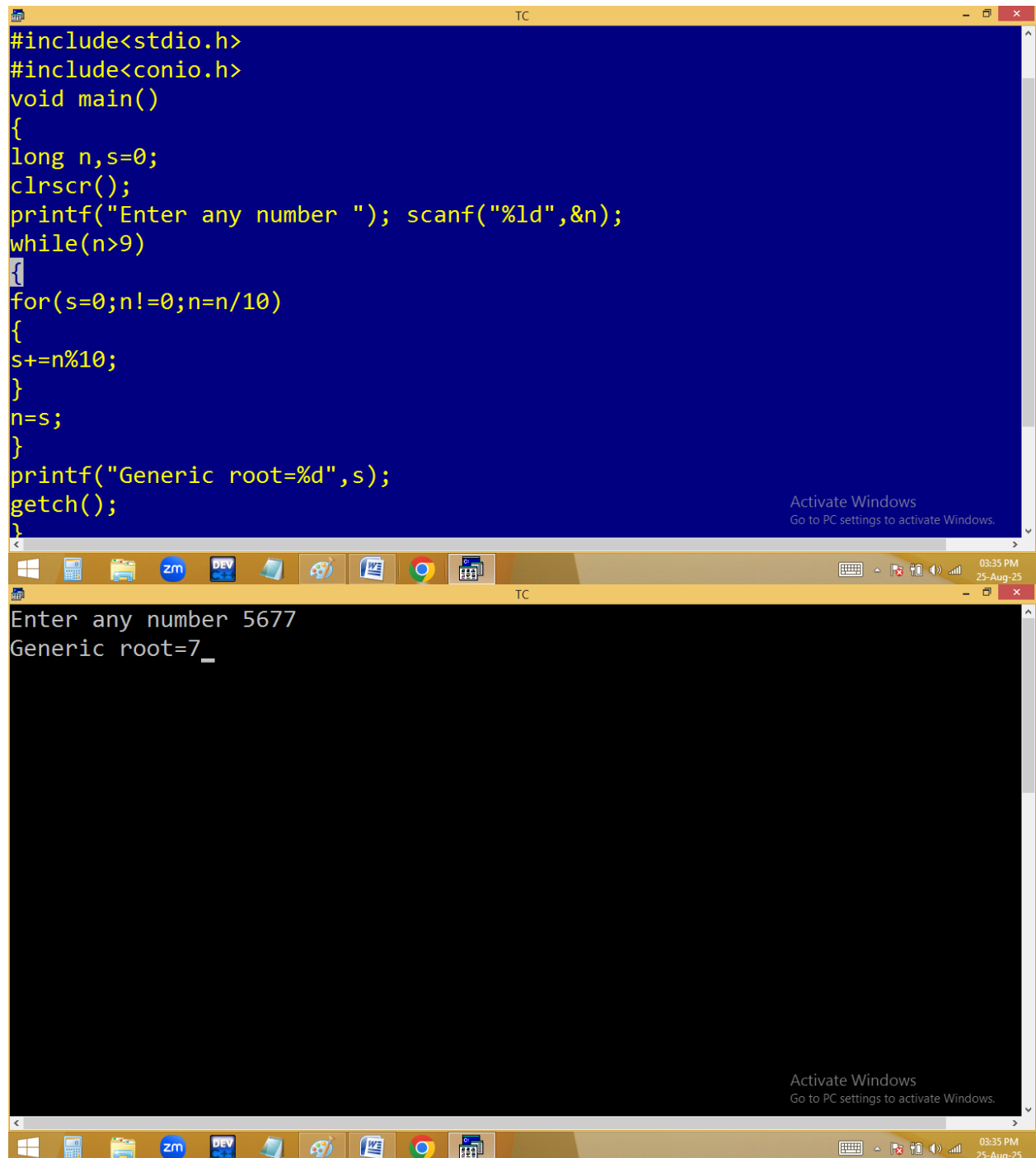
Activate Windows
Go to PC settings to activate Windows.
```



## Finding generic root of given no?

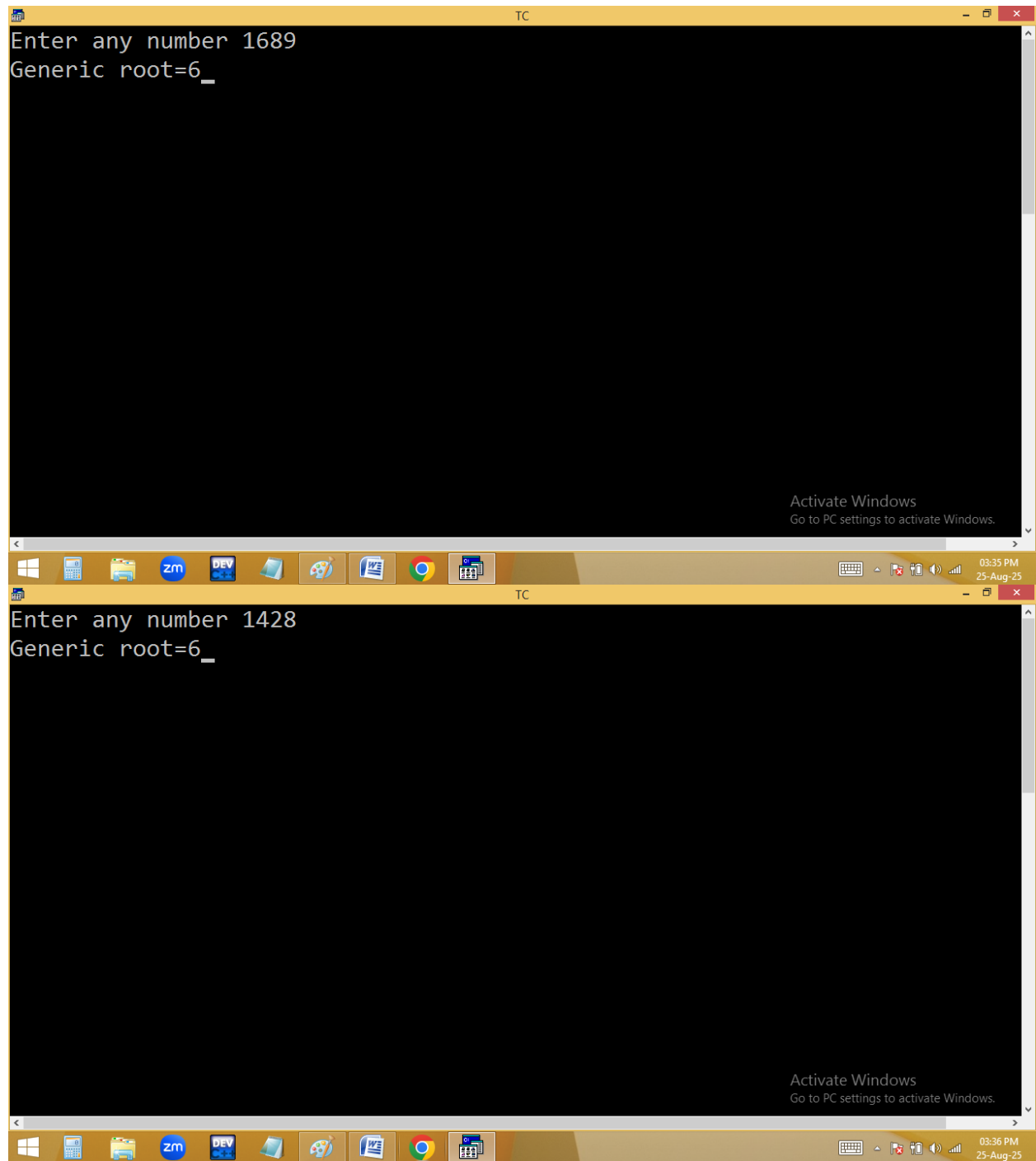
5677 → 5+6+7+7=25 → 2+5=7

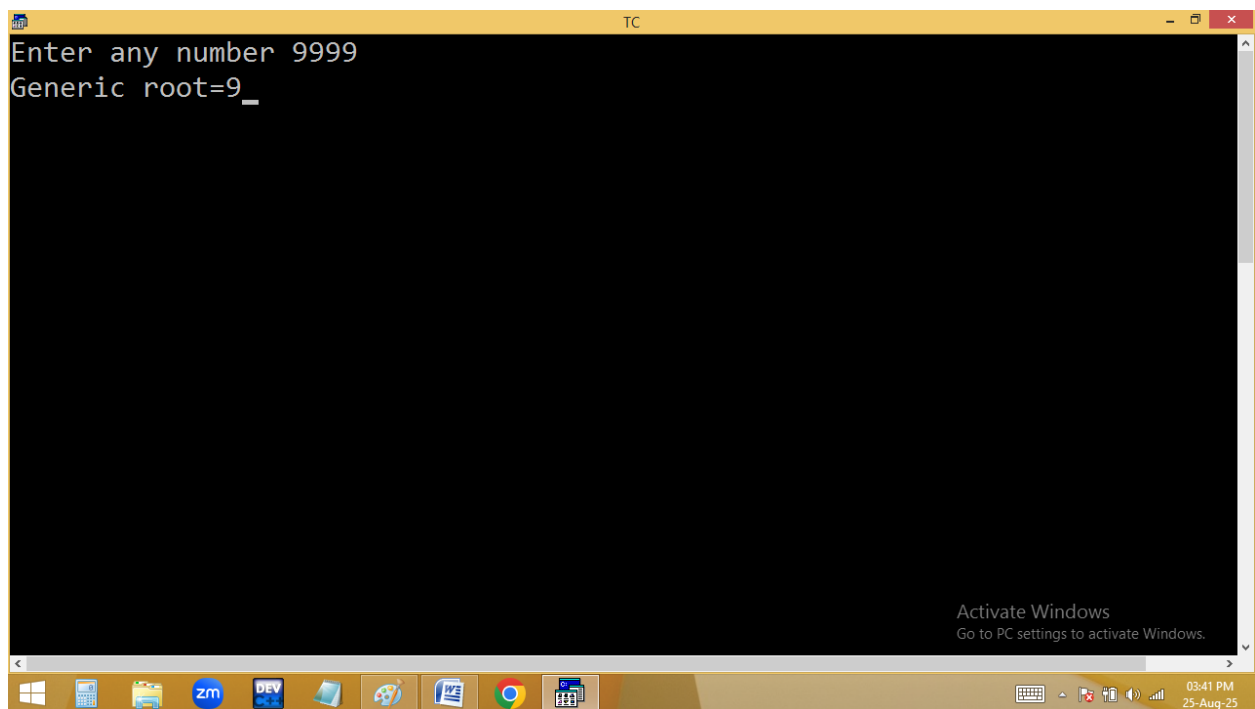
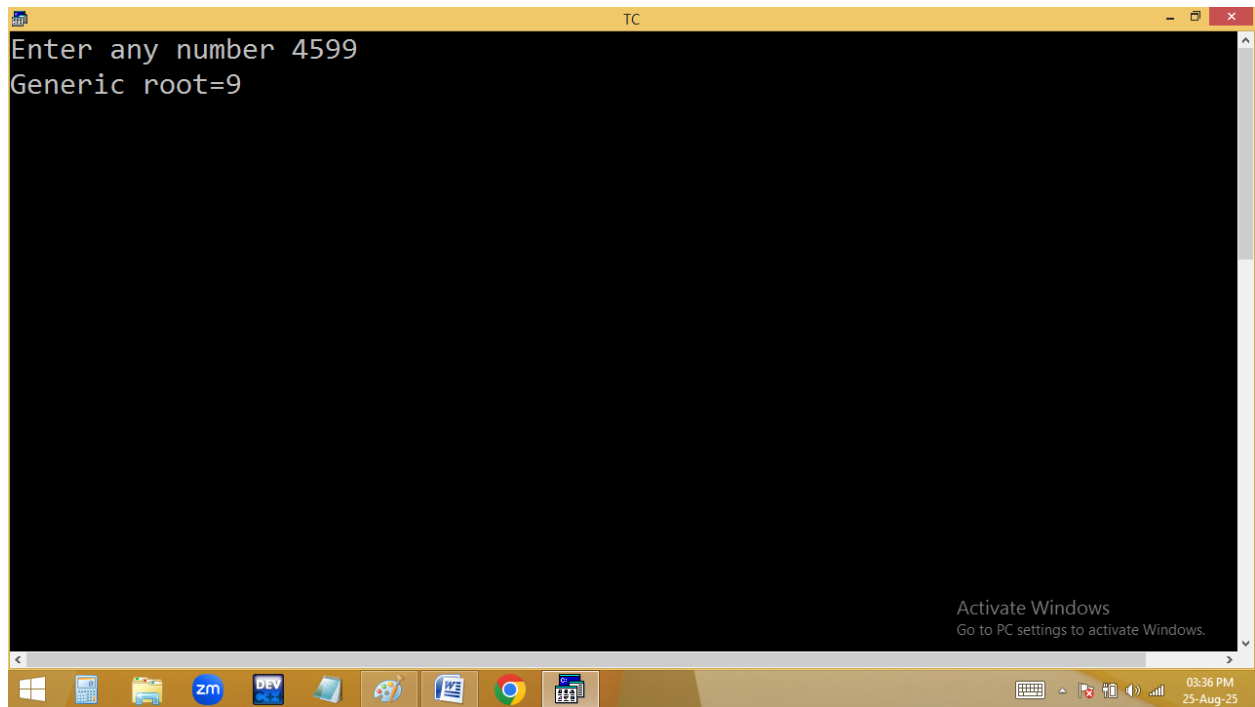
1234 → 1+2+3+4=10 → 1+0 → 1



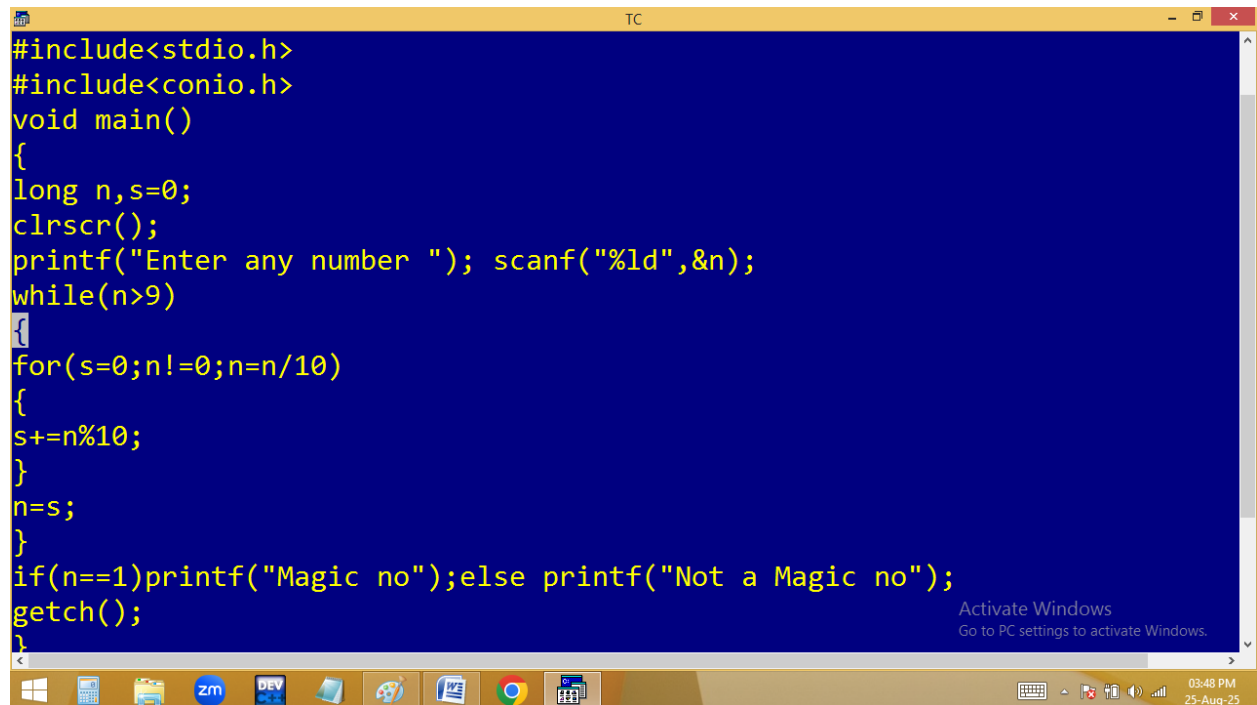
```
#include<stdio.h>
#include<conio.h>
void main()
{
    long n,s=0;
    clrscr();
    printf("Enter any number "); scanf("%ld",&n);
    while(n>9)
    {
        for(s=0;n!=0;n=n/10)
        {
            s+=n%10;
        }
        n=s;
    }
    printf("Generic root=%d",s);
    getch();
}
```

Enter any number 5677  
Generic root=7\_





**Finding magic no or not? If the generic root is 1 it is a magic no**



```
#include<stdio.h>
#include<conio.h>
void main()
{
long n,s=0;
clrscr();
printf("Enter any number "); scanf("%ld",&n);
while(n>9)
{
for(s=0;n!=0;n=n/10)
{
s+=n%10;
}
n=s;
}
if(n==1)printf("Magic no");else printf("Not a Magic no");
getch();
}
```

Activate Windows  
Go to PC settings to activate Windows.

03:48 PM  
25-Aug-25

