

## Finding perfect no or not?

**Sum of factors is equal to given no**

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

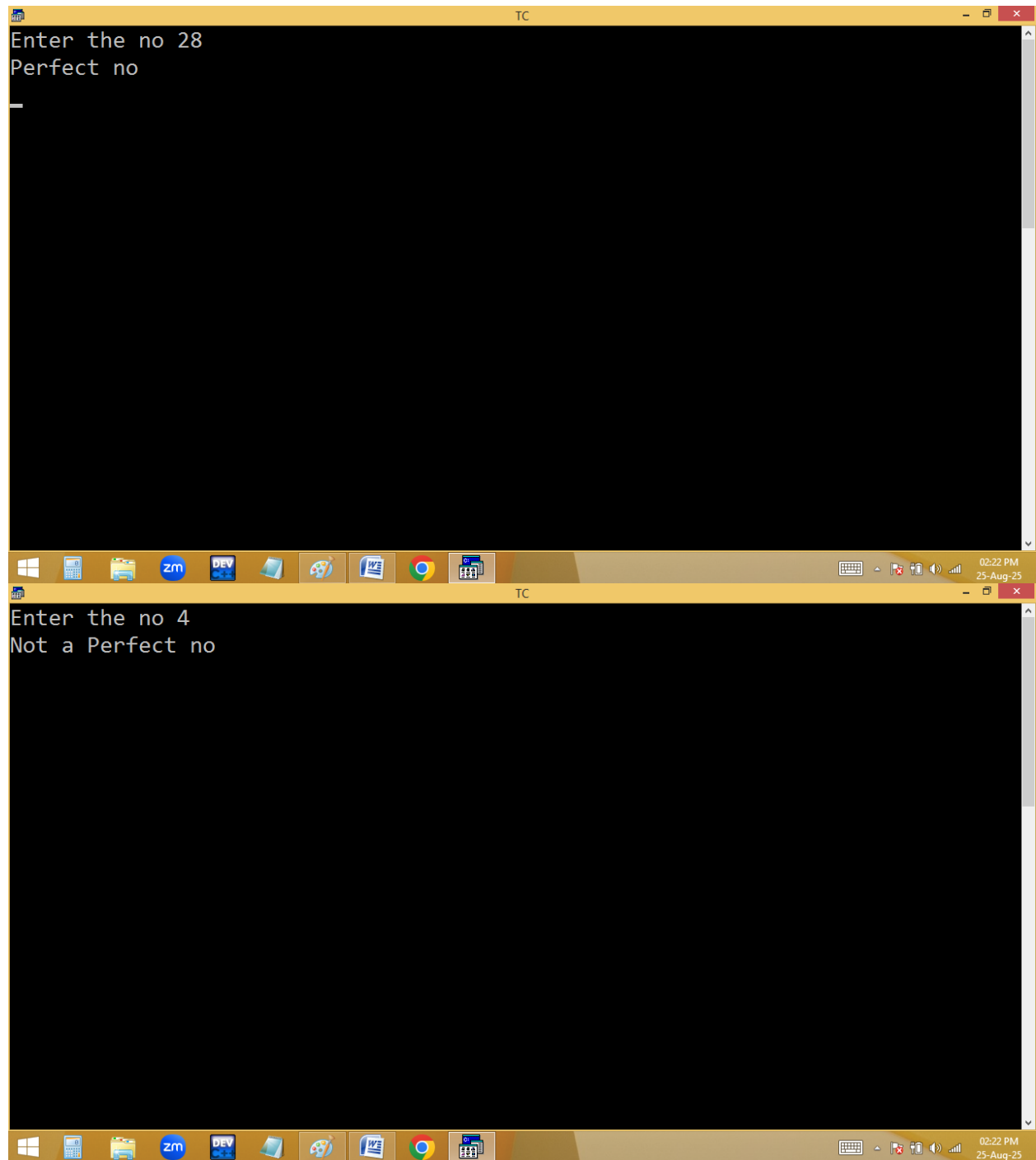
28 factors sum is  $1+2+4+7+14=28$

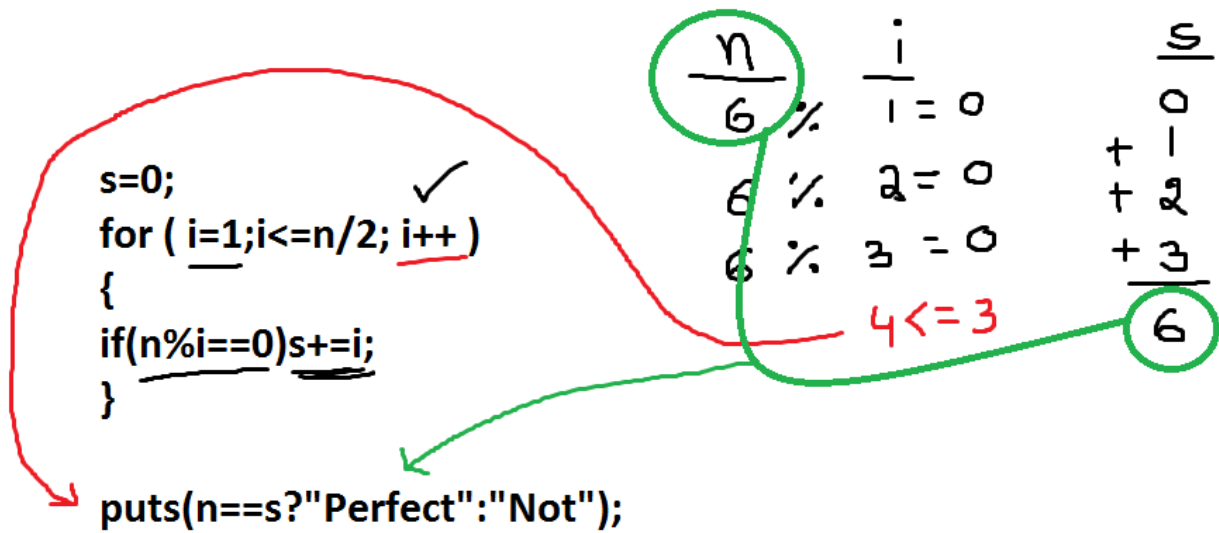
4 factors are  $1+2=3$   not a perfect no

```
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();
}
```

Enter the no 6  
Perfect no

TC





## 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

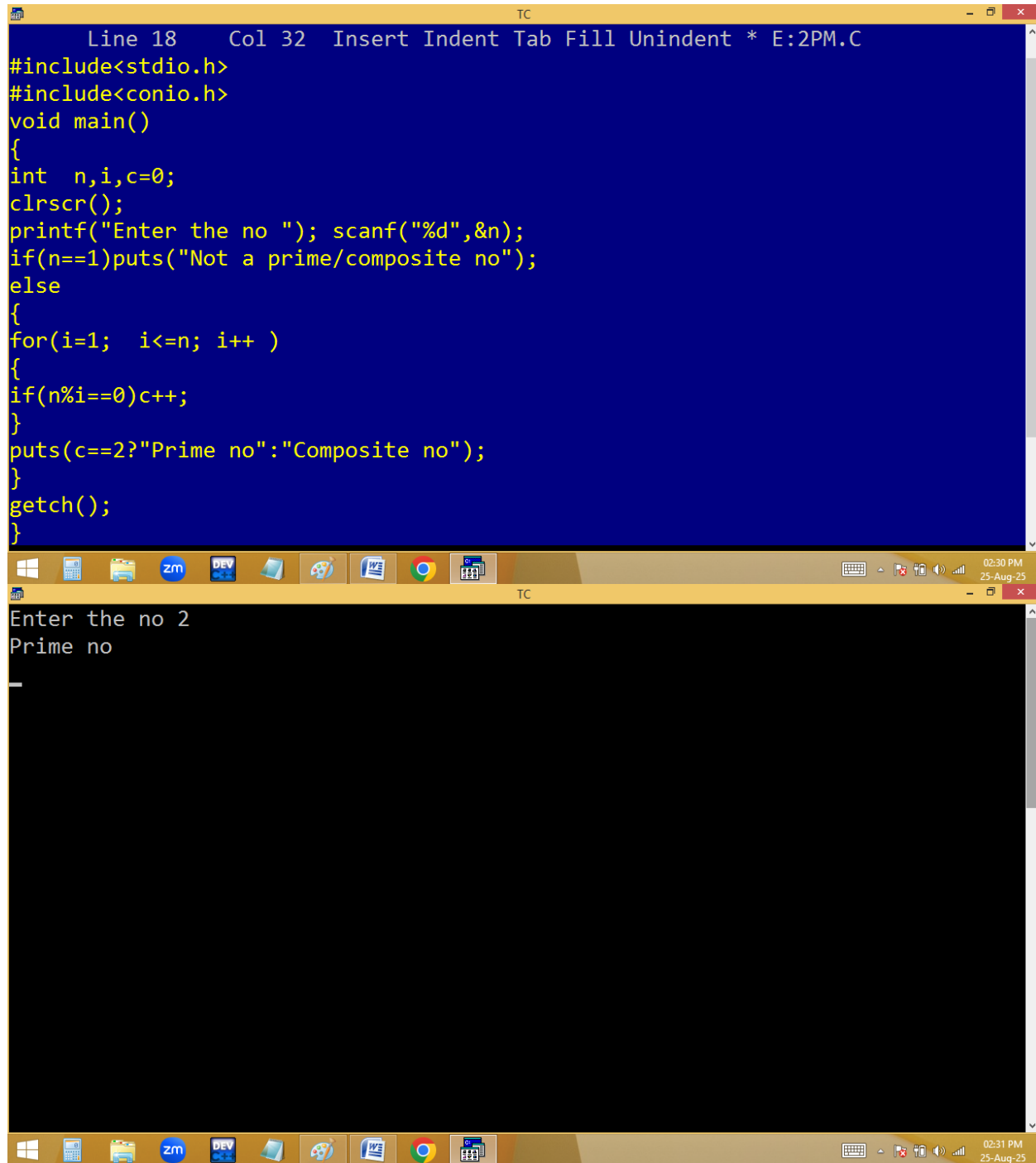
$1\%1=0$

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

2 factors are 1, 2

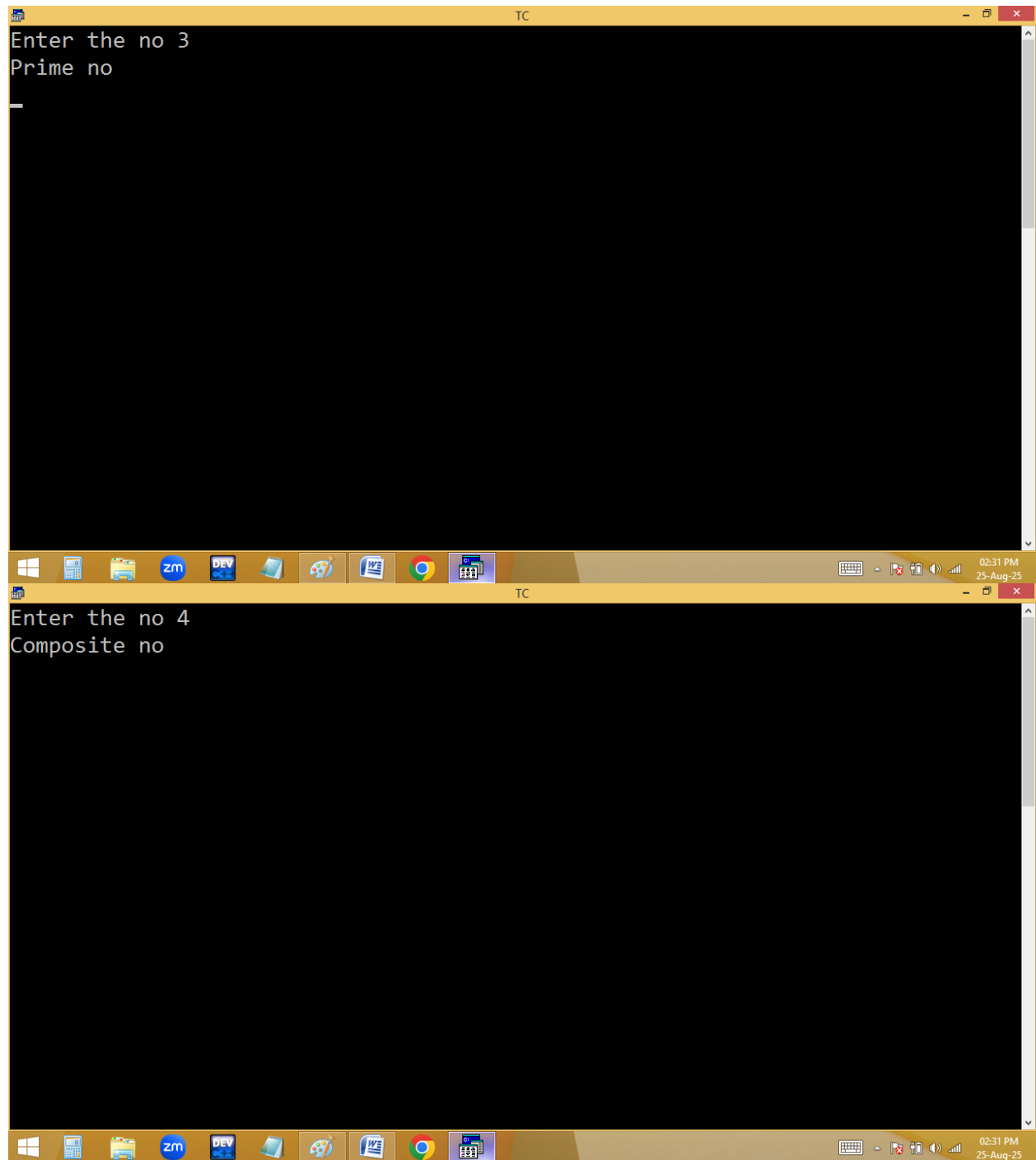
3 factors are 1, 3

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 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>
6	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	

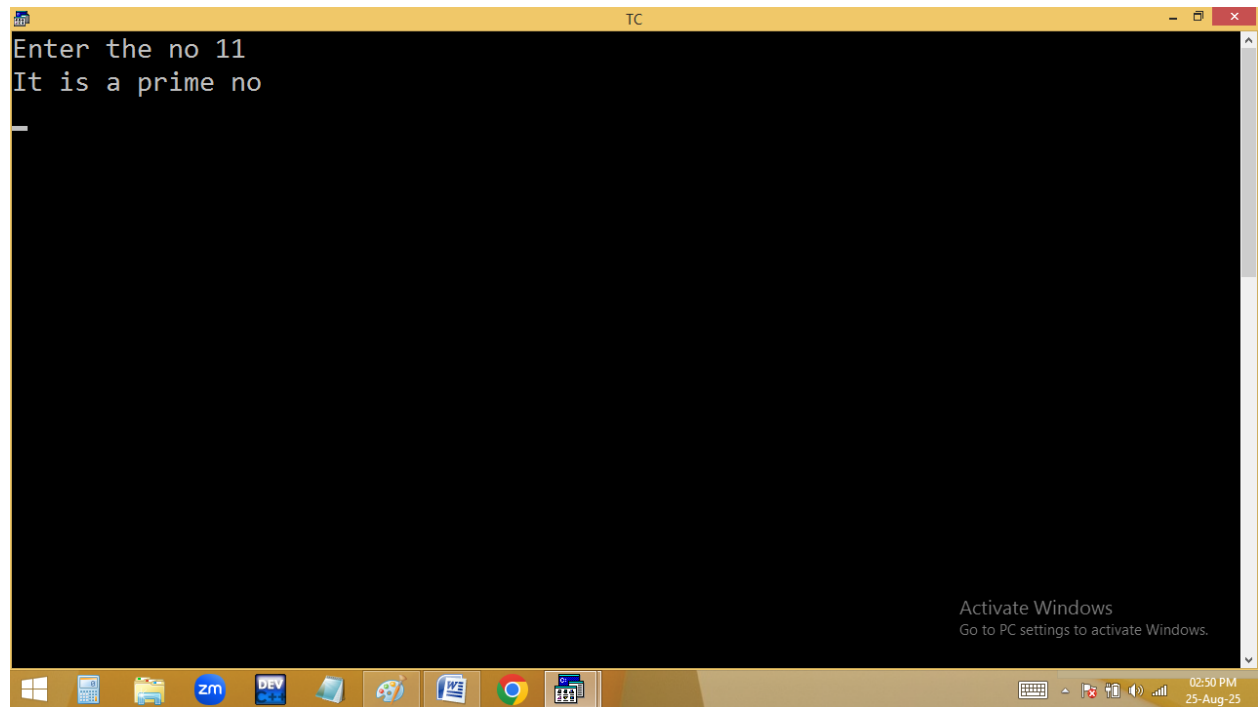
## Method2:

The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program designed to check if a number is prime or composite. The code includes headers for `stdio.h`, `conio.h`, and `stdlib.h`. It defines a `main` function that declares a `long int n, i`, clears the screen with `clrscr()`, and prompts the user to enter a number using `printf` and `scanf`. The logic checks if the number is 1 (not prime/composite) or if it is divisible by any number from 2 to  $n/2$  (composite). If no divisors are found, it declares the number as prime. The bottom screenshot shows the program's execution. The user has entered the number 2000000000, and the program has correctly identified it as a composite number, displaying 'Composite no' on the screen.

```
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();
}
```

Enter the no 2000000000  
Composite no





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

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

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

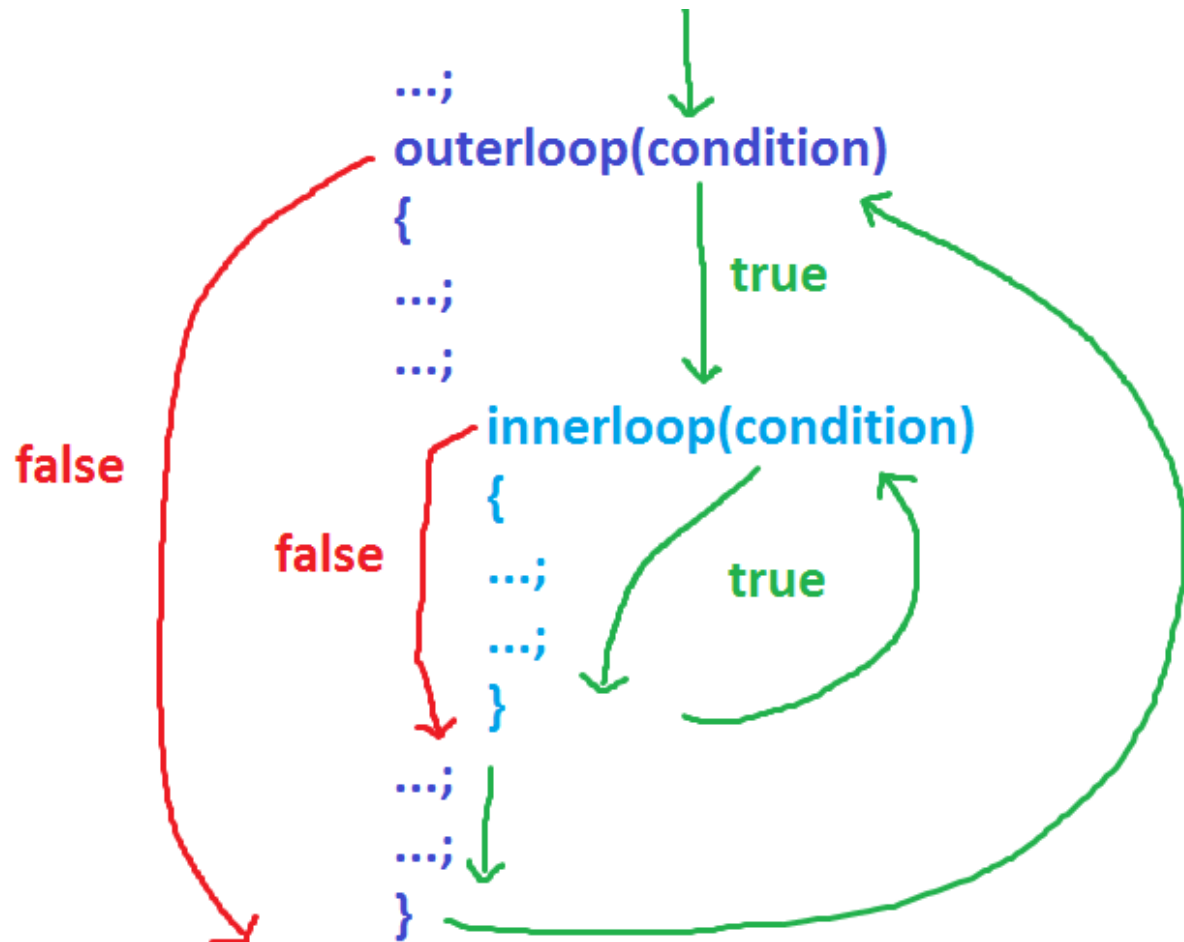
```
for( i=2; i<=n/2; i++ )  
{  
    if(n%2==0) { p(composite);exit(0);}  
}  
p(prime);
```

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

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

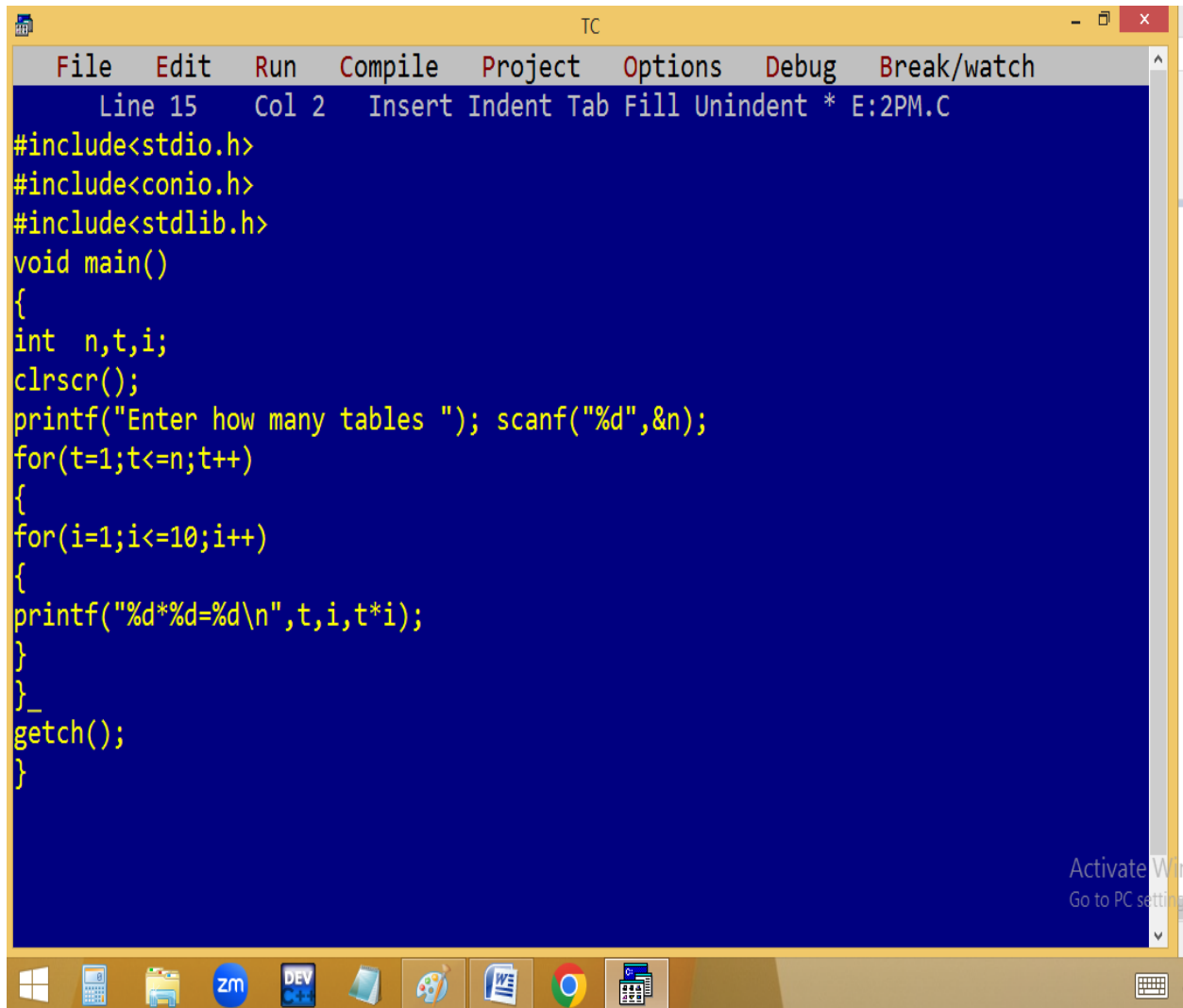
## Nested loops:

Loop within loop is called nested loop.



## Printing 1..n tables?

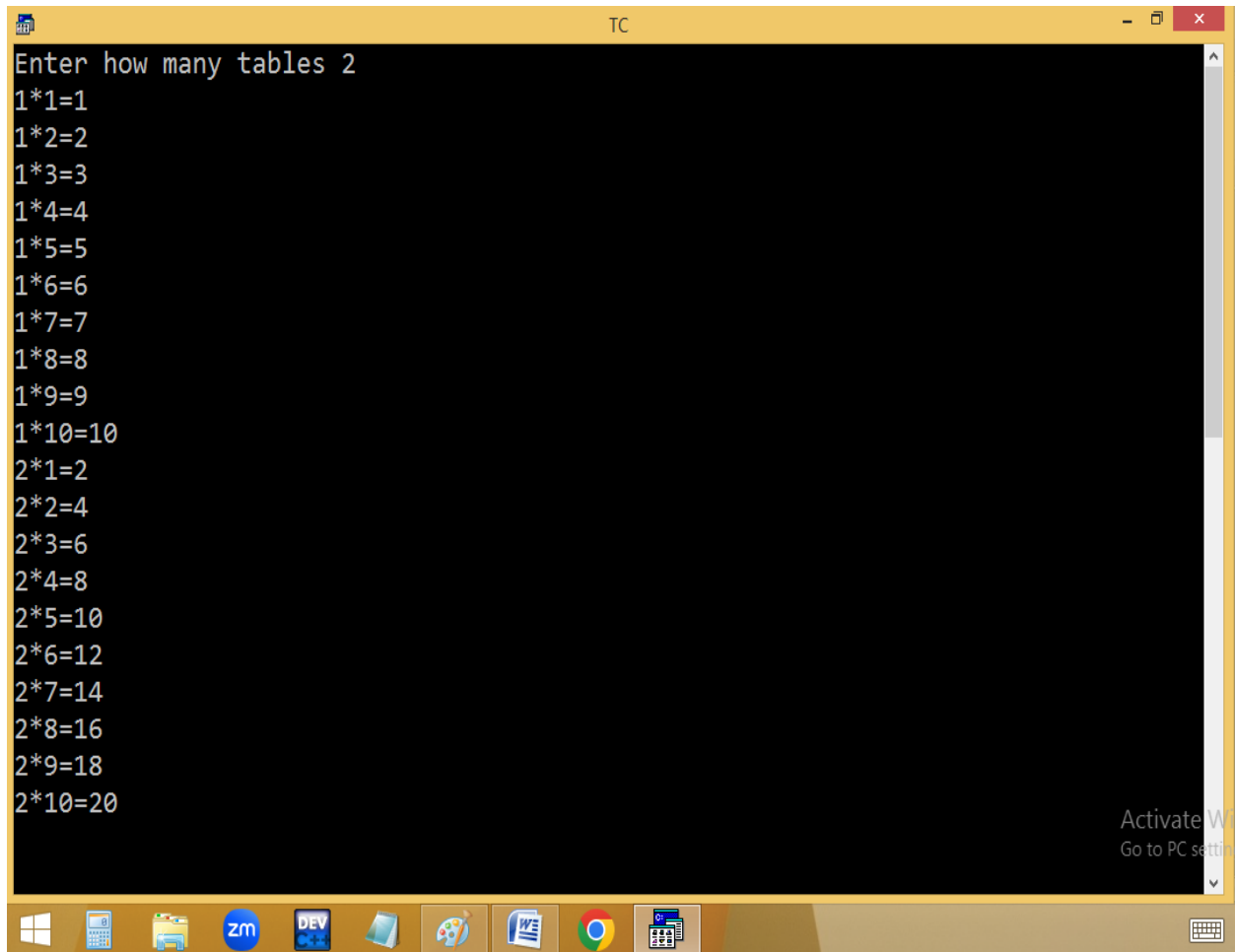
Print 1..3 tables



The image shows a screenshot of a Turbo C++ (TC) IDE window. The title bar at the top reads "TC". Below the title bar 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 displays "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 (zm), DEV, a folder icon, a paint palette, a document icon, Google Chrome, and a calendar icon.



The screenshot shows a Turbo C++ (TC) window with a black background and white text. The text displays the first 10 multiplication tables for numbers 1 and 2. The prompt 'Enter how many tables 2' is at the top. The tables are listed as follows:

```
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
```

The Windows taskbar is visible at the bottom with icons for Windows, Calculator, File Explorer, Zoom, DEV, and other applications. A watermark 'Activate Windows Go to PC settings' is visible in the bottom right corner of the TC window.

```
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");
}

```

$\frac{n}{3}$

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
-		

```
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();
}
```

Enter how many tables 10

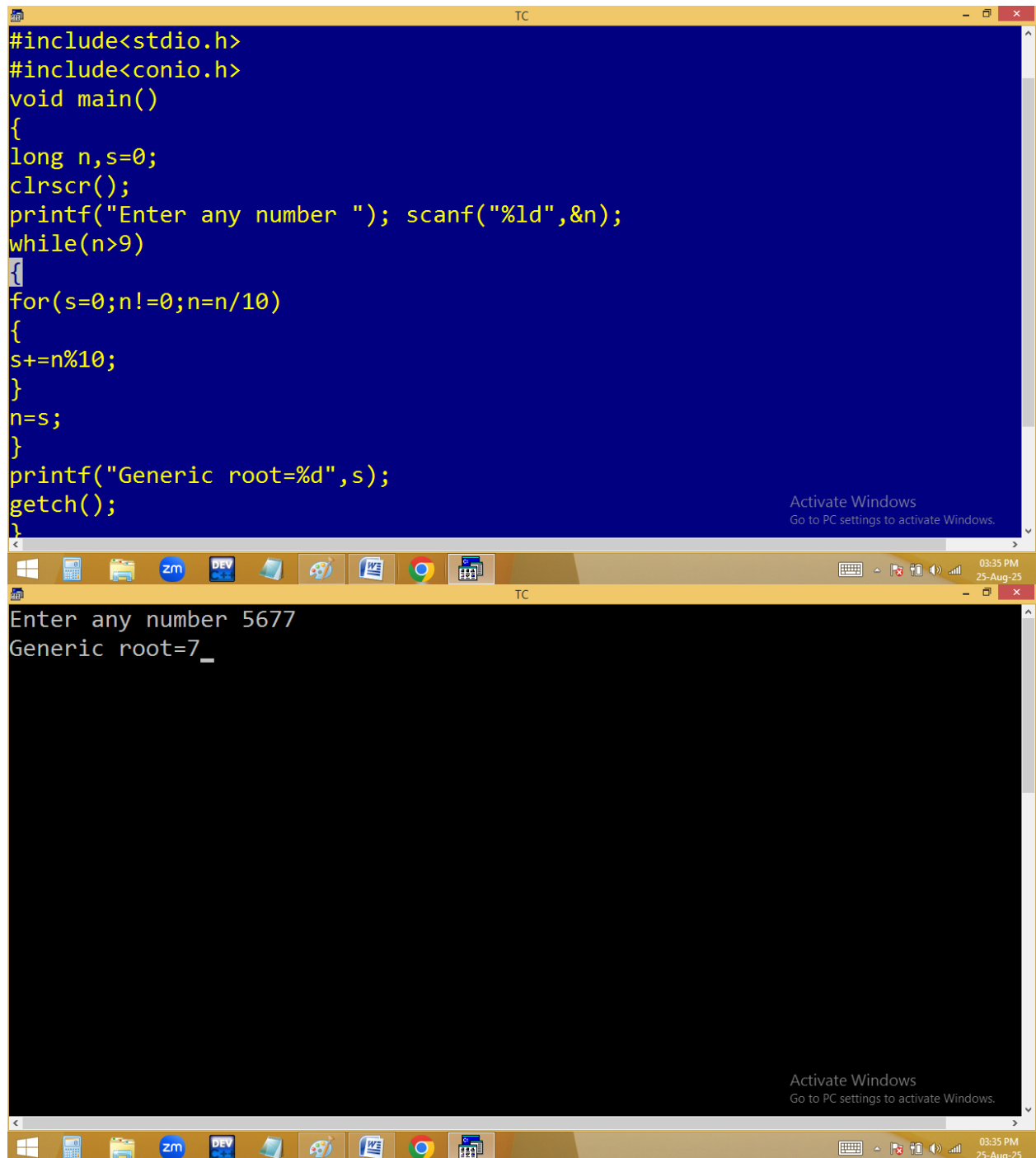
1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100



## Finding generic root of given no?

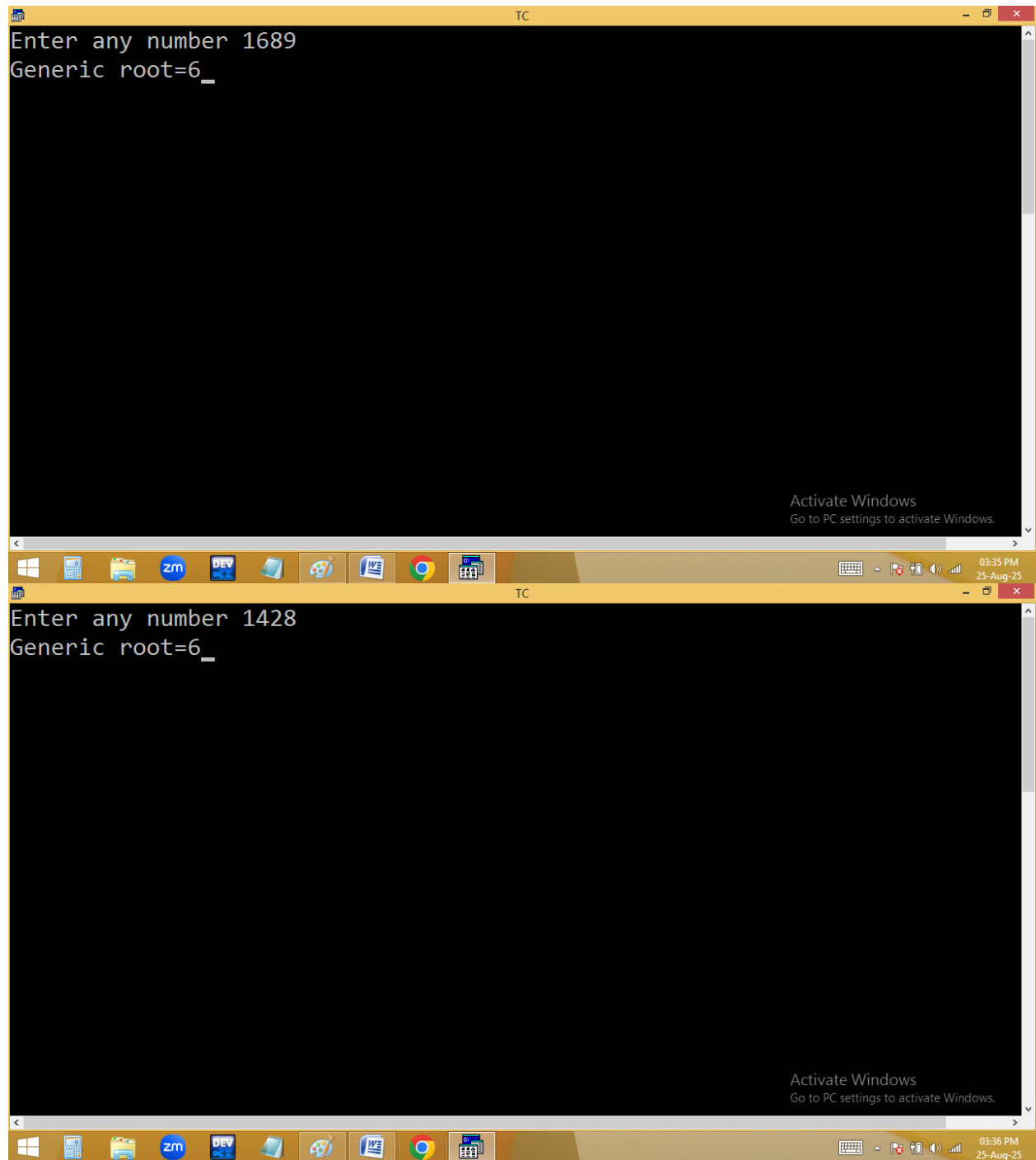
5677 → 5+6+7+7=25 → 2+5=7

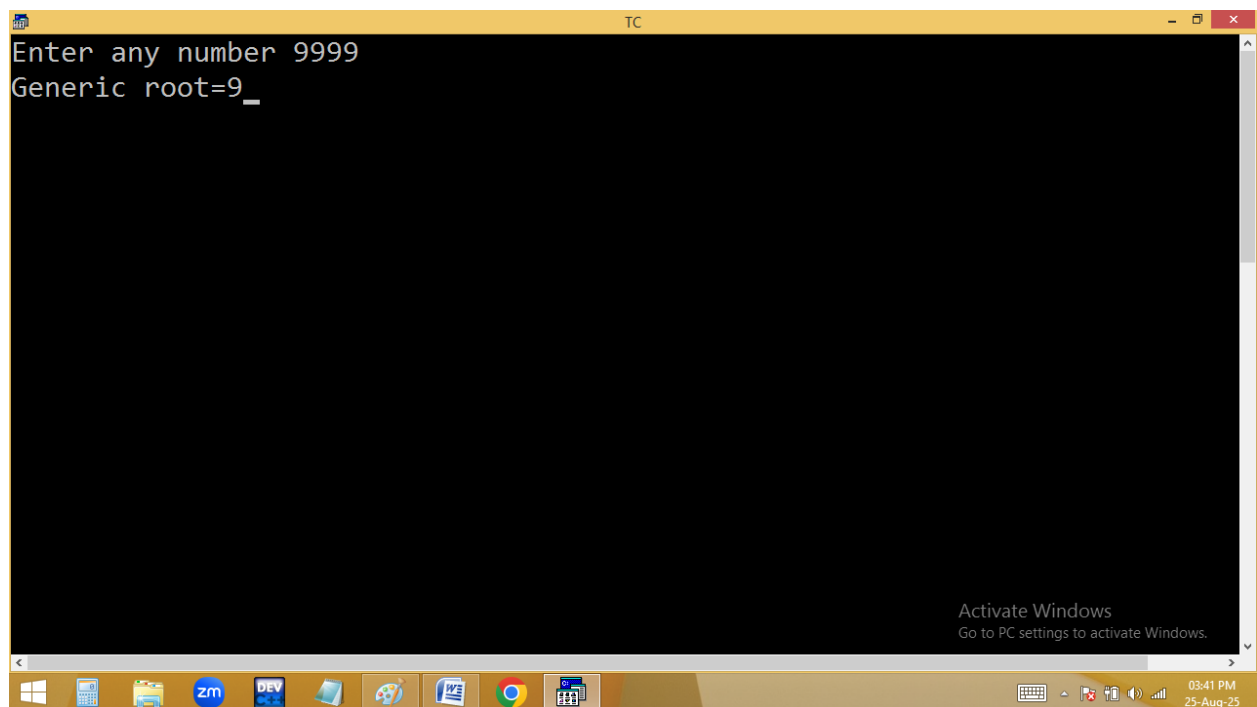
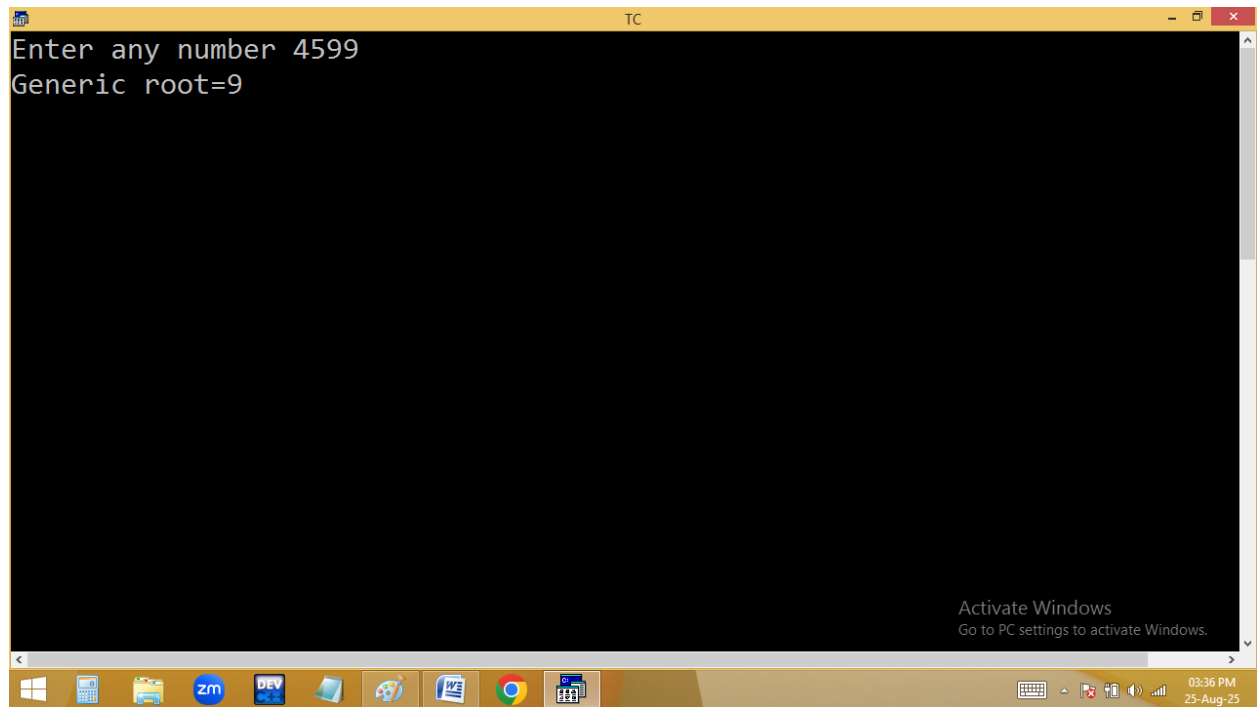
1234 → 1+2+3+4=10 → 1+0 → 1



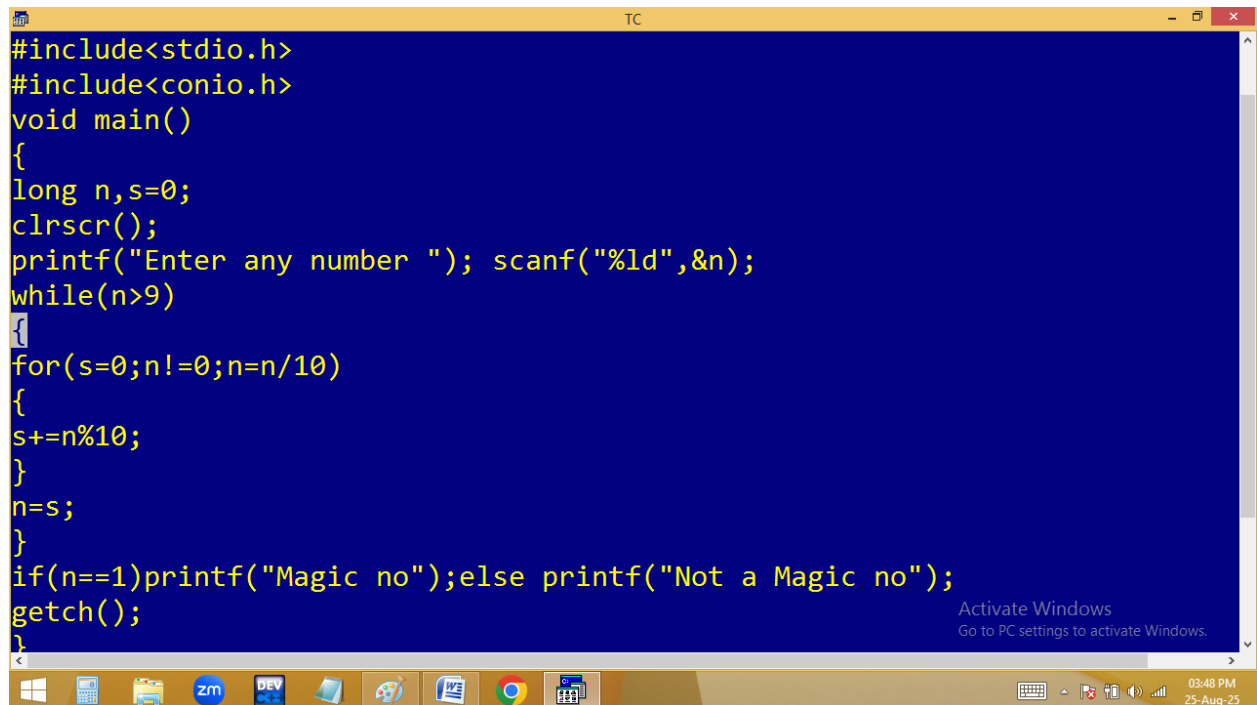
```
#include<stdio.h>
#include<conio.h>
void main()
{
    long n,s=0;
    clrscr();
    printf("Enter any number "); scanf("%ld",&n);
    while(n>9)
    {
        for(s=0;n!=0;n=n/10)
        {
            s+=n%10;
        }
        n=s;
    }
    printf("Generic root=%d",s);
    getch();
}
```

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

