

Printing the given table:

Eg: 9th table

$$9*1=9$$

$$9*2=18$$

...

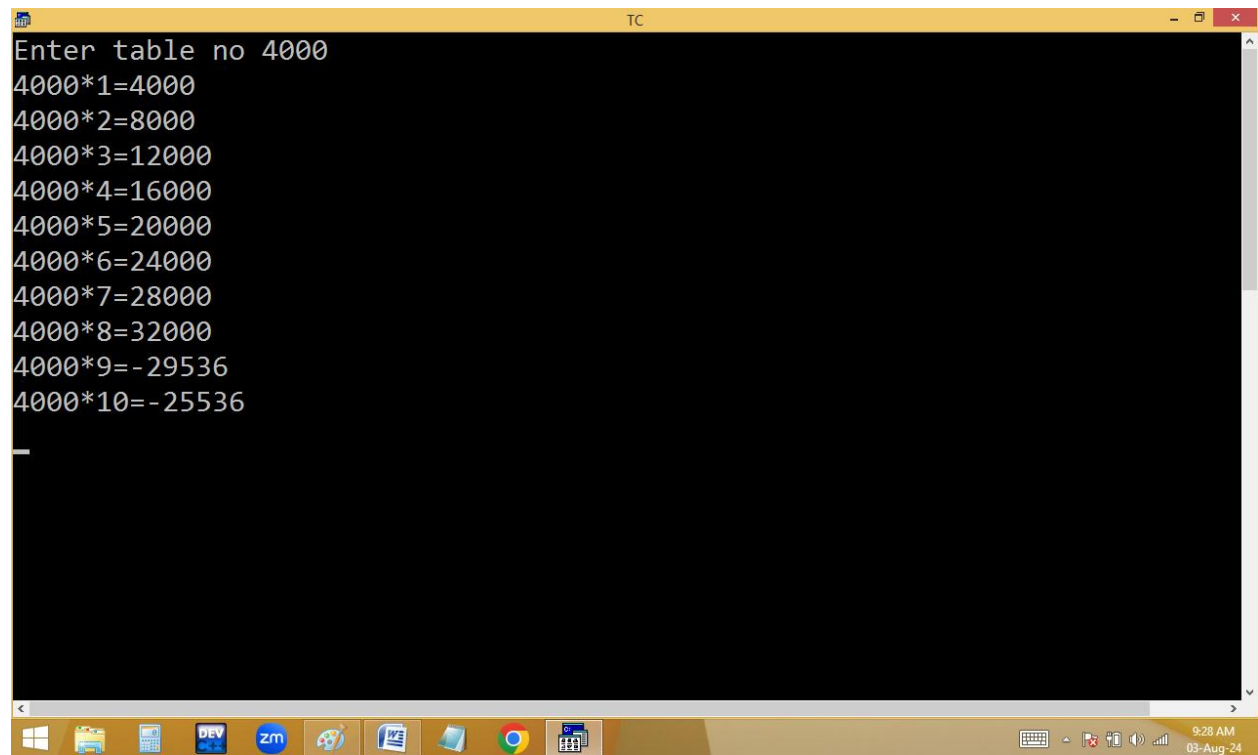
...

$$9*10=90$$

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 2 Insert Indent Tab Fill Unindent * E:9AM.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();
}
```

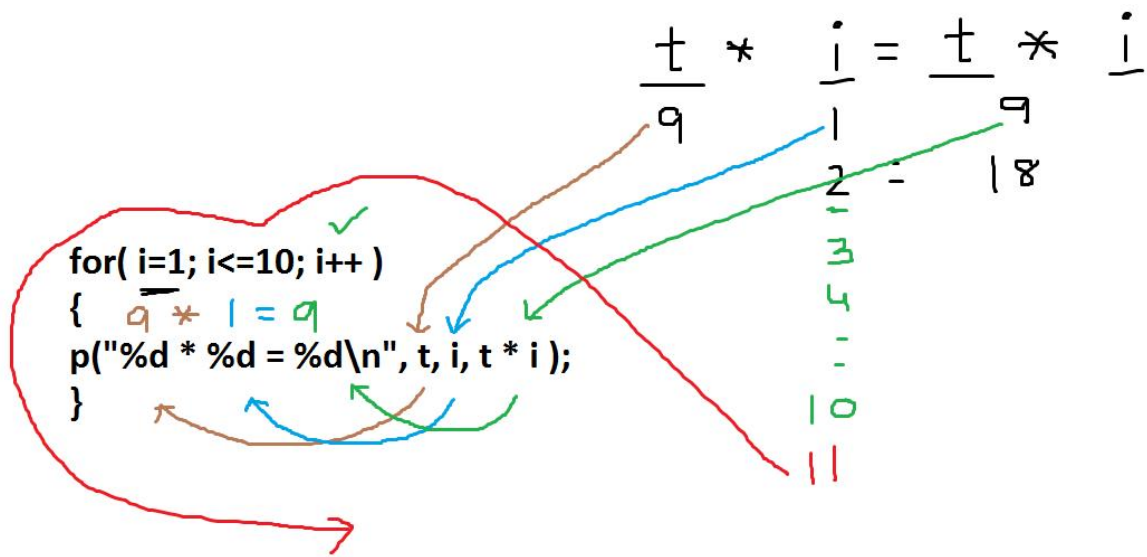
```
TC
Enter table no 9
9*1=9
9*2=18
9*3=27
9*4=36
9*5=45
9*6=54
9*7=63
9*8=72
9*9=81
9*10=90
```

```
TC
Enter table no 4000
4000*1=4000
4000*2=8000
4000*3=12000
4000*4=16000
4000*5=20000
4000*6=24000
4000*7=28000
4000*8=32000
4000*9=-29536
4000*10=-25536
```

A screenshot of a Windows desktop environment. A terminal window titled 'TC' is open, displaying a series of multiplication results for the number 4000. The results are: 4000*1=4000, 4000*2=8000, 4000*3=12000, 4000*4=16000, 4000*5=20000, 4000*6=24000, 4000*7=28000, 4000*8=32000, 4000*9=-29536, and 4000*10=-25536. The taskbar at the bottom shows several application icons including Windows, File Explorer, DEV, zm, a game controller, a document, a folder, Google Chrome, and a calendar. The system tray on the right indicates the time is 9:28 AM on 03-Aug-24.

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 19 Insert Indent Tab Fill Unindent * E:9AM.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();
}
```

```
TC
Enter table no 20
20*1=20
20*2=40
20*3=60
20*4=80
20*5=100
20*6=120
20*7=140
20*8=160
20*9=180
20*10=200
_
```



Finding perfect no:

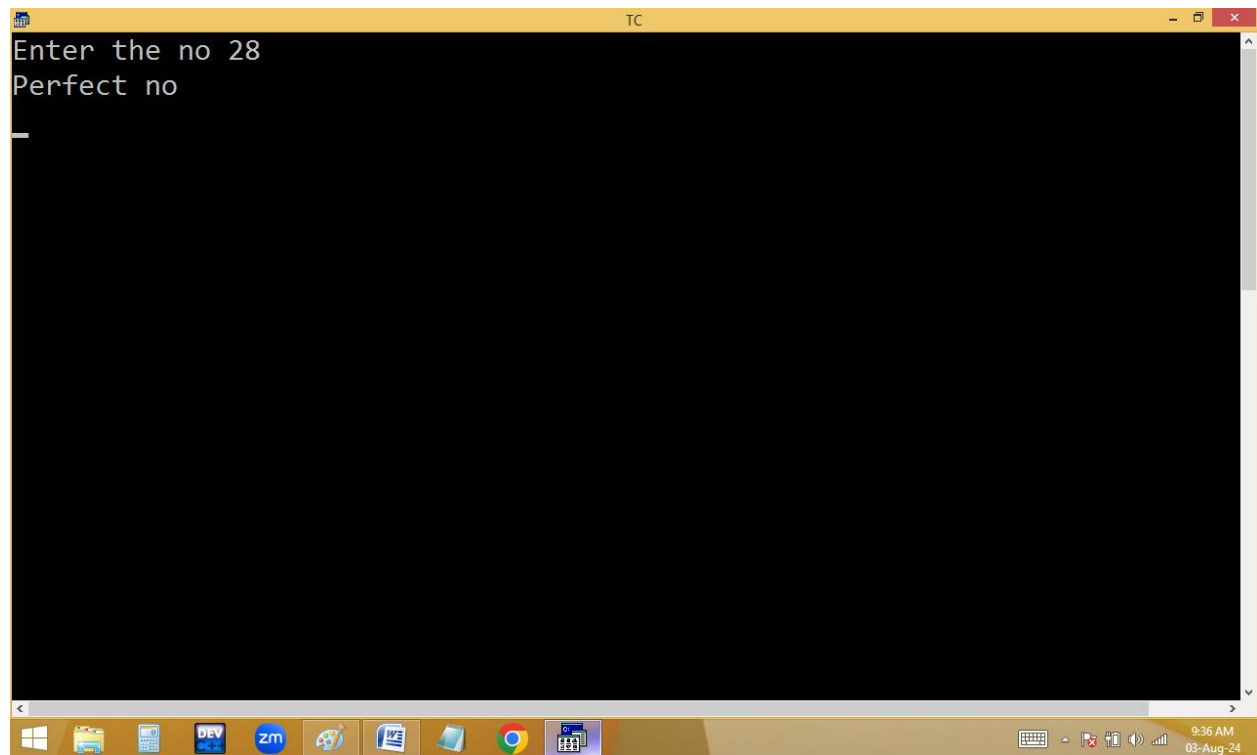
6 factors sum is $1+2+3=6$

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

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

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 44 Insert Indent Tab Fill Unindent * E:9AM.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=s+i;
puts(n==s?"Perfect no":"Not a Perfect no");
getch();
}
```

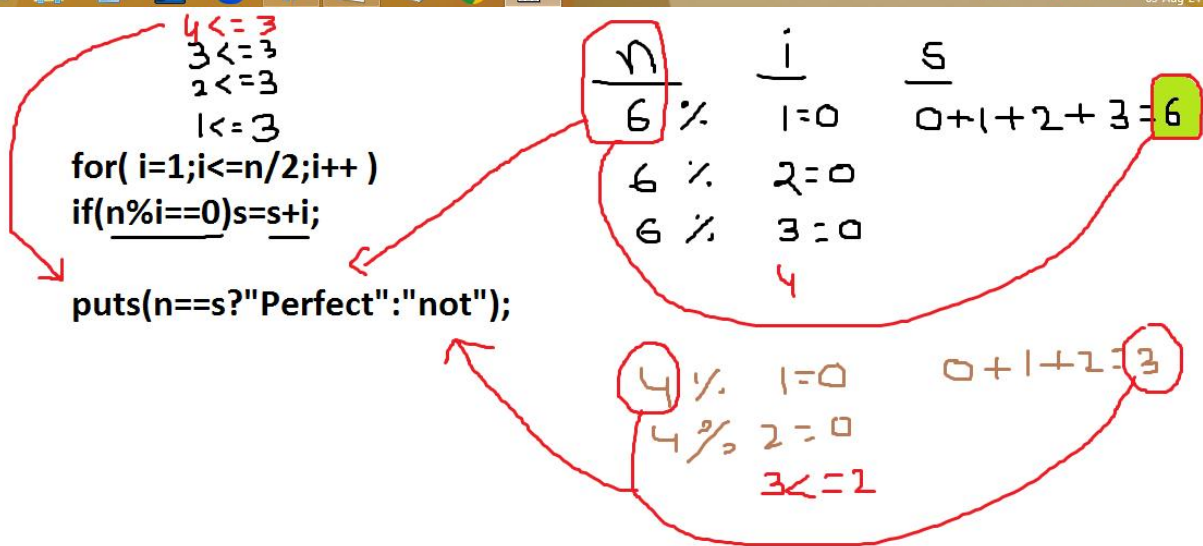
```
TC
Enter the no 6
Perfect no
```



```

Enter the no 4
Not a Perfect no

```



Finding prime / composite no:

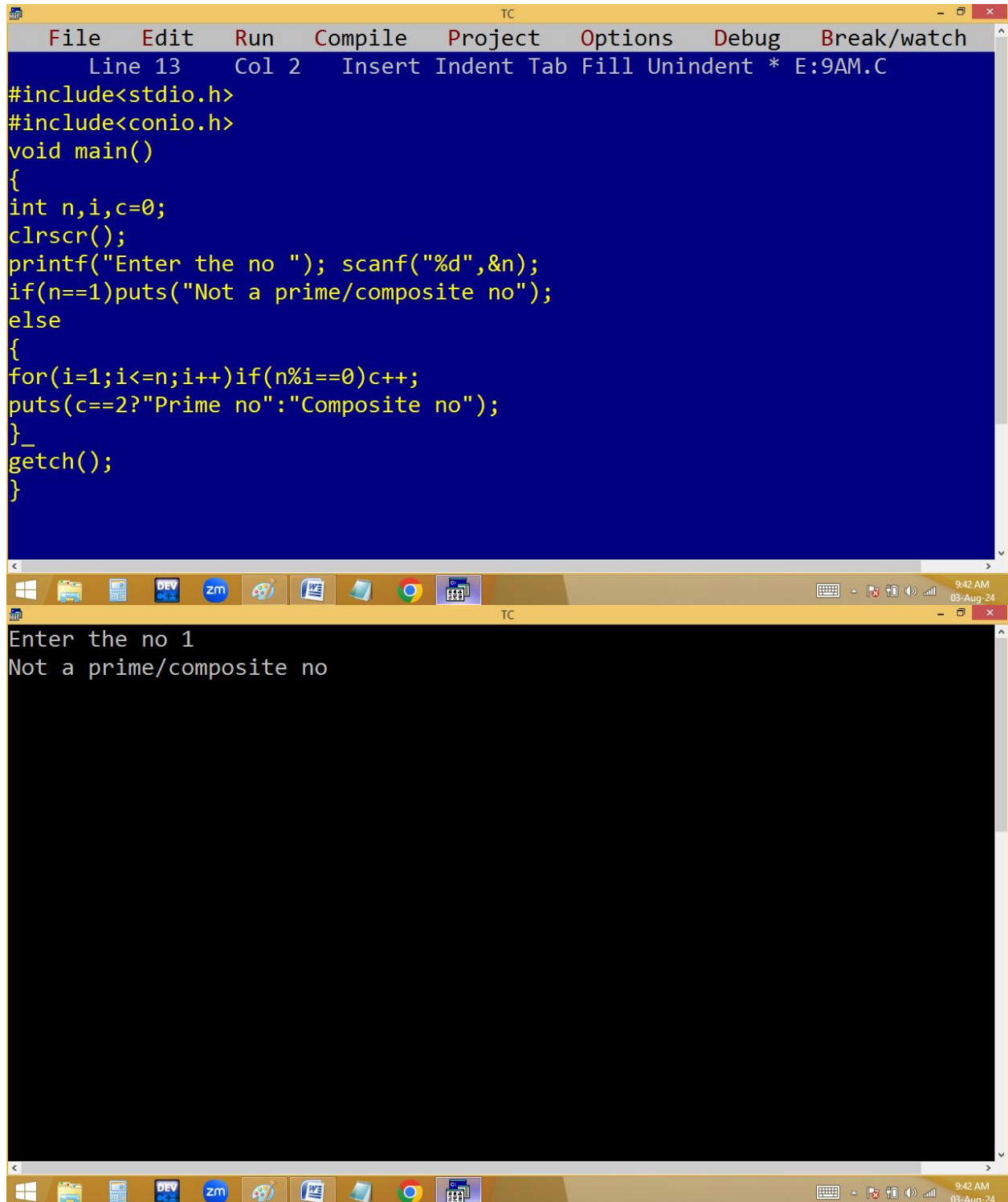
The no having 2 factors is called prime.

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

2 factors are 1, 2 ← prime

3 factors are 1, 3 ← prime

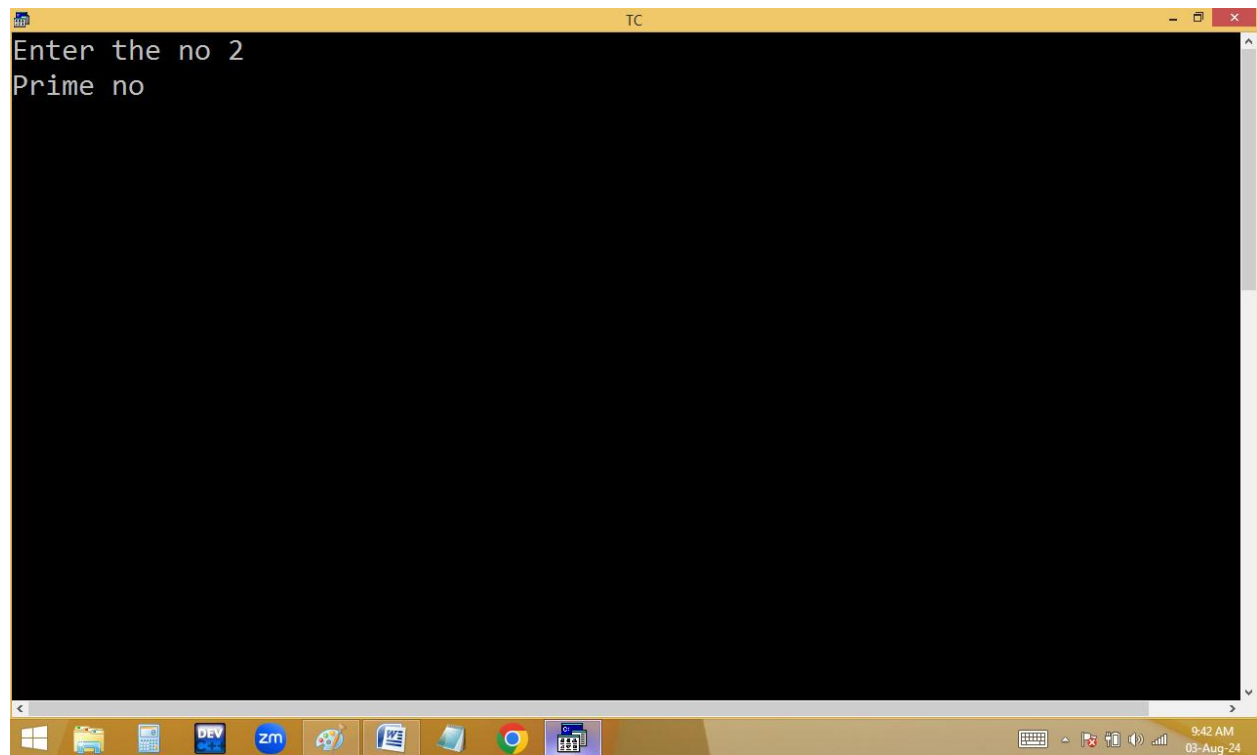
4 factors are 1, 2, 4 ← composite no



The image shows a screenshot of a Turbo C++ (TC) IDE. The top window displays the source code for a program that checks if a number is prime or composite. The code includes `<stdio.h>` and `<conio.h>`, and uses `scanf` to take input and `printf` to output the result. A `for` loop is used to count the number of factors. The bottom window shows the program's execution: it prompts "Enter the no 1" and outputs "Not a prime/composite no". The Windows taskbar at the bottom shows the time as 9:42 AM on 03-Aug-24.

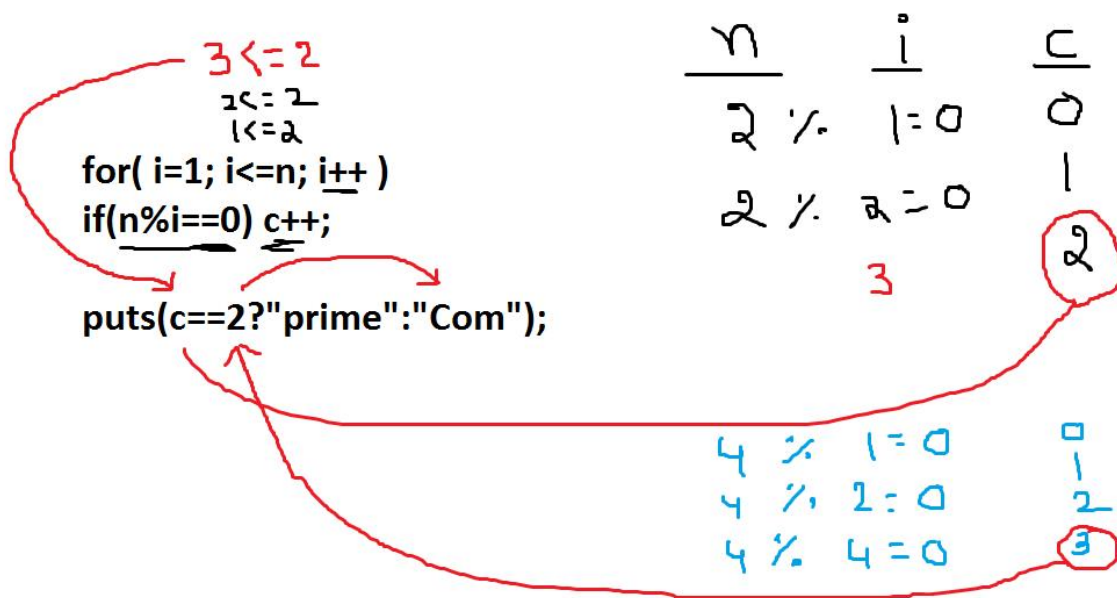
```
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 2 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,c=0;
clrscr();
printf("Enter the no "); scanf("%d",&n);
if(n==1)puts("Not a prime/composite no");
else
{
for(i=1;i<=n;i++)if(n%i==0)c++;
puts(c==2?"Prime no":"Composite no");
}_
getch();
}
```

Enter the no 1
Not a prime/composite no



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

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

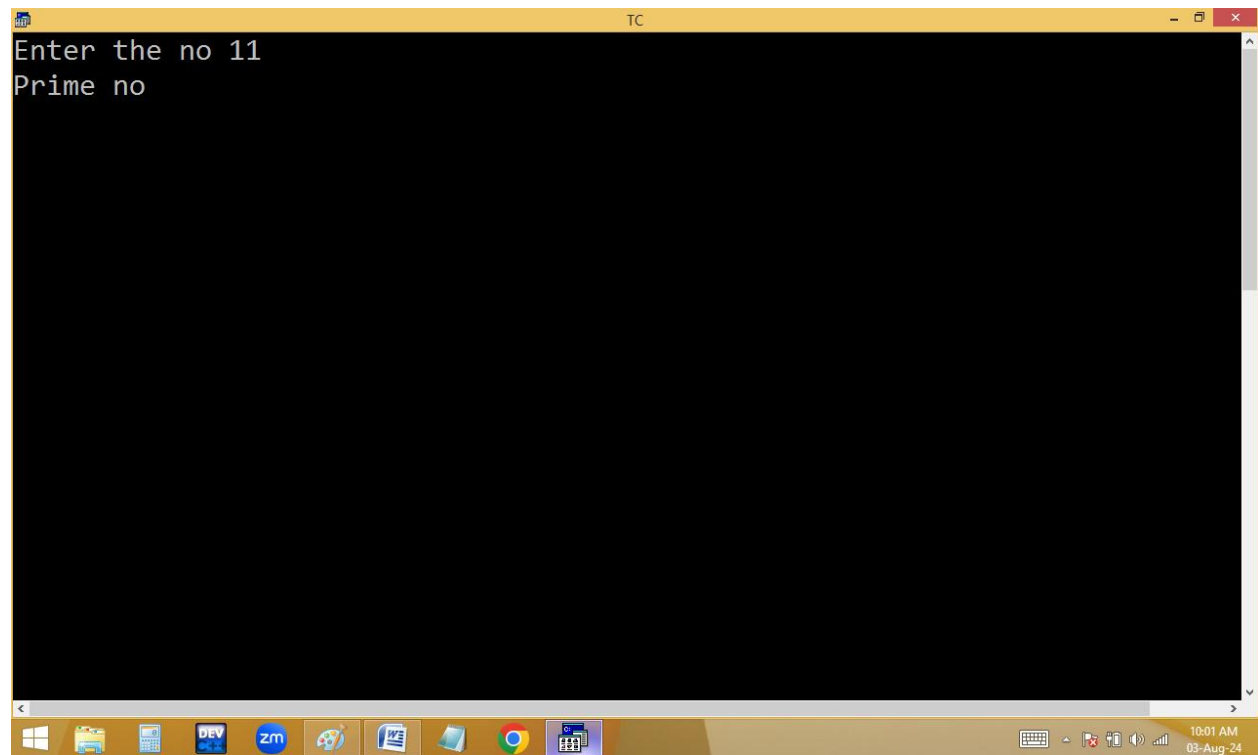


Method 2:

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code for a program that checks if a number is prime or composite. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 2 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.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(); return;}
puts("Prime no");
}
getch();
}
```

The bottom window shows the program's execution. It prompts the user to "Enter the no" and the user has entered "11". The program then outputs "Prime no". The Windows taskbar at the bottom shows the time as 10:01 AM on 03-Aug-24.



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

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

10 factors 1 2 5 10

100 factors 1 2 4 5 10 20 25 50 100

5 factors 1 5

7 factors 1 7

$$\frac{n}{10} \% \frac{i}{2} = 0$$

2000000000 % 2 = 0

$$\begin{array}{rcl} n & i & \\ \hline 11 \% & 2 & = 1 \\ 11 \% & 3 & = 2 \\ 11 \% & 4 & = 3 \\ 11 \% & 5 & = 1 \\ & 6 & \leq 5 \end{array}$$

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

Method 3:

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code for a program that checks if a number is prime or composite. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 1 Col 1 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long int n,i,p=1;
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){p=0;break;}
puts(p?"Prime no":"Composite no");
}
getch();
}
```

The bottom window shows the program's execution. It prompts the user to "Enter the no" and the user has entered "11". The program then outputs "Prime no".

```
TC
Enter the no 11
Prime no
```

The Windows taskbar at the bottom of the screen shows the time as 10:06 AM on 03-Aug-24. The taskbar includes icons for the Start menu, File Explorer, Command Prompt, DEV C++, Zoom, and other applications.

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

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

Fibonacci series:

n=5 ➡ 0 1 1 2 3

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code for a program that calculates the first five terms of the Fibonacci sequence. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 2 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,f1=0, f2=1, f3;
clrscr();
printf("Enter the no "); scanf("%ld",&n);
for(i=1;i<=n;i++)
{
printf("%4d",f1);
f3=f1+f2;
f1=f2;
f2=f3;
}_
getch();
}
```

The bottom window shows the program's execution. It prompts the user to "Enter the no 5". The output of the program is displayed as:

```
0 1 1 2 3
```

The IDE's taskbar at the bottom shows various icons, including the Windows logo, file explorer, and several application icons. The system clock in the bottom right corner indicates the time is 10:21 AM on 03-Aug-24.

```

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

```

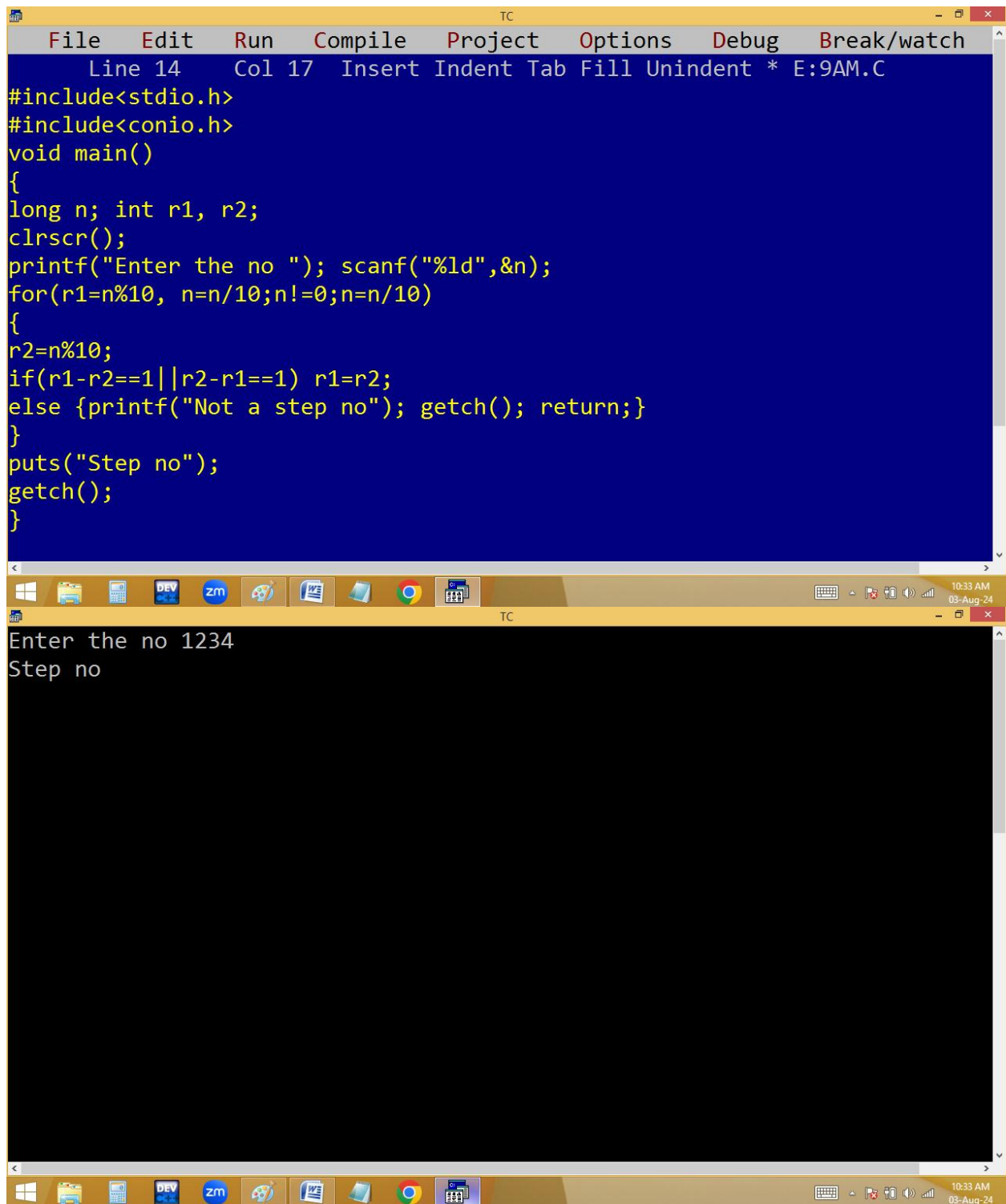
n	i	f1	f2	f3
5	1	✓ 0 +	1 =	1
	2	✓ 1 +	1 =	2
	3	✓ 1 +	2 =	3
	4	✓ 2 +	3 =	5
	5	✓ 3	5	
	6			

0 1 1 2 3

Finding step no.

1234 / 4321 ← step no

1**2**45 ← not a step no



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 17 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long n; int r1, r2;
clrscr();
printf("Enter the no "); scanf("%ld",&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 {printf("Not a step no"); getch(); return;}
}
puts("Step no");
getch();
}
```

Enter the no 1234
Step no

TC

10:33 AM
03-Aug-24

```
TC
Enter the no 143
Not a step no
```

```
TC
Enter the no 4321
Step no
```

```
TC
Enter the no 5654
Step no

```

```
TC
Enter the no -1234
Step no

```


$\frac{81}{4}$ $1234 \div 10 = \frac{82}{2}$
 for($r1=n\%10, n/=10; n!=0; n=n/10$)
 {
 $r2=n\%10;$ ✓
 if($r1-r2==1 || r2-r1==1$)
 {
 $r1=r2;$ ✓
 }
 else p(Not a step no; return;)
 }
 p(step no);

n 81 82 1234
 1234 $\div 10 = 123$ ✓
 123 $\div 10 = 12$ ✓
 12 $\div 10 = 1$ ✓
 1 $\div 10 = 0$ ✓
 0

1234
 4321

Harmonic series:

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

The image shows a screenshot of a Turbo C++ IDE. The top window is the source code editor, which has a blue background and contains the following C code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 1 Col 11 Insert Indent Tab Fill Unindent * E:9AM.C
#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=s+1.0/i);
}
printf("\b=%.2f",s);
getch();
}
```

The bottom window is the output console, which has a black background and shows the program's execution:

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

The Windows taskbar at the bottom of the screen displays the time as 10:44 AM on 03-Aug-24. Various application icons are visible in the taskbar, including Windows Explorer, DEV C++, Zoom, and Google Chrome.

$$\frac{n}{5}$$

$$\frac{i}{2}$$

$$\frac{5}{1+1}$$

$$2 + .5 = 2.5$$

$$3.28$$

```

p("1+");
for( i=1; i<=n; i++ )
{
p("1/%d+",i,s=s+1.0/i);
}
p("=%.2f",s);

```

$$1 + 1/1 + 1/2 + 1/3 + 1/4 + 1/5$$

$$= 2.28$$