

Printing the given table:

9th table

$$9*1=9$$

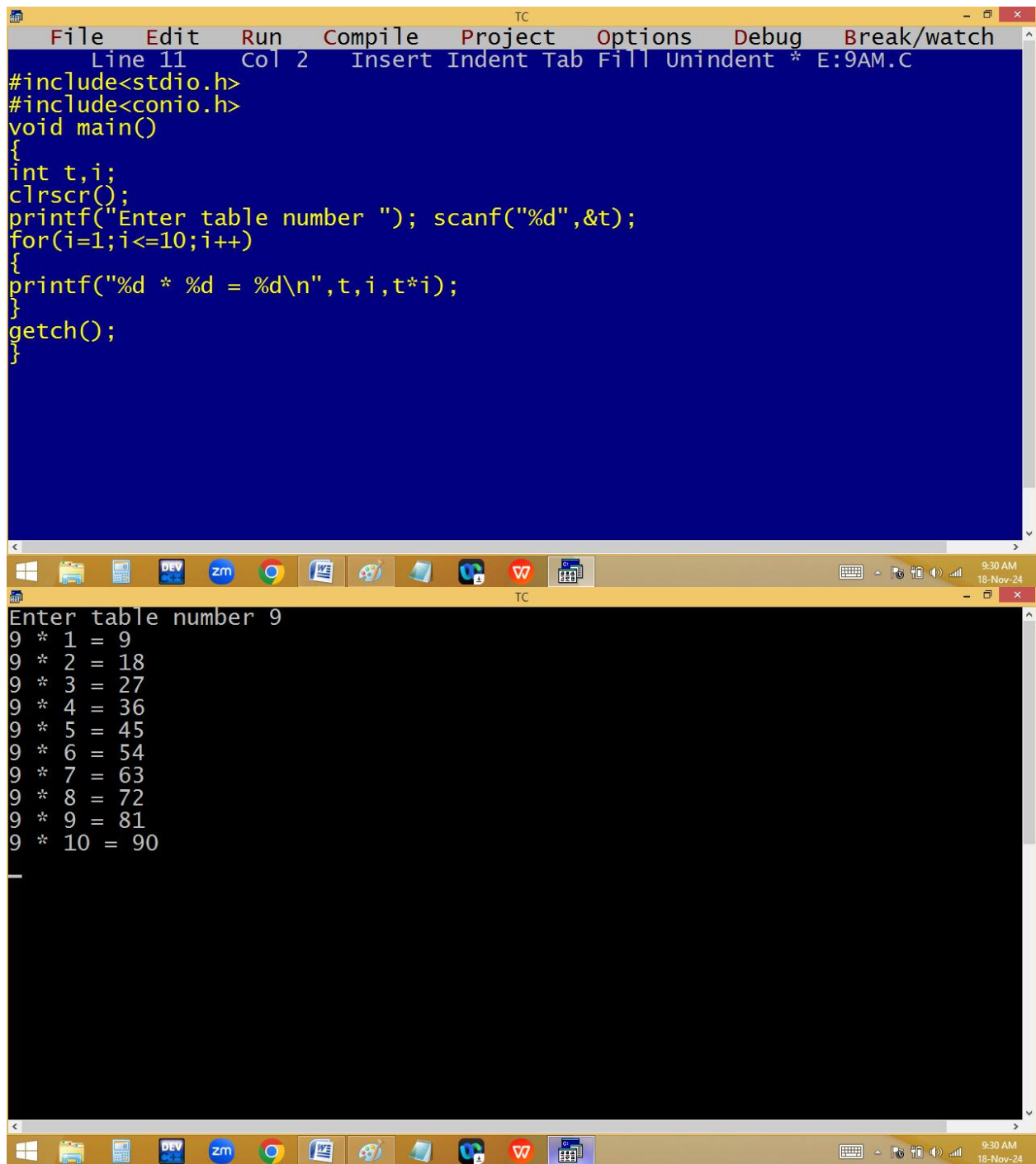
$$9*2=18$$

$$9*3=27$$

..

..

$$9*10=90$$



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

Enter table number 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
```

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the output of a program, which is a multiplication table for the number 4000. The output is as follows:

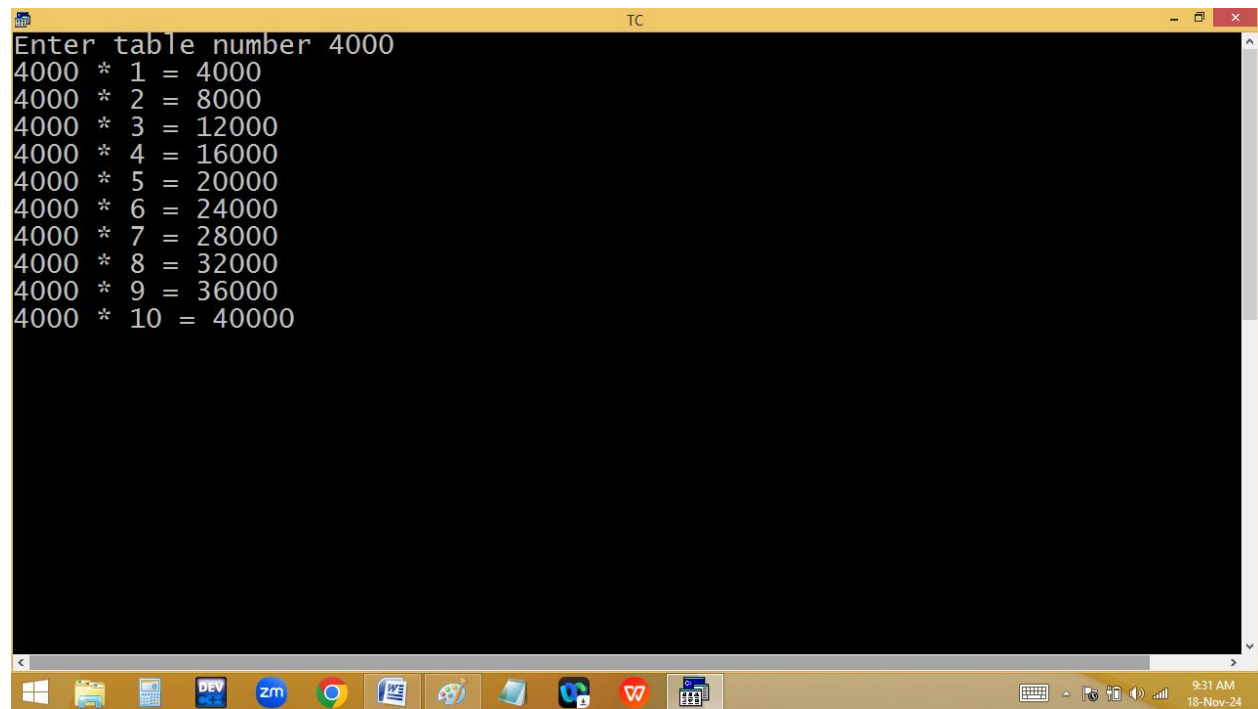
```
Enter table number 4000
4000 * 1 = 4000
4000 * 2 = 8000
4000 * 3 = 12000
4000 * 4 = 16000
4000 * 5 = 20000
4000 * 6 = 24000
4000 * 7 = 28000
4000 * 8 = 32000
4000 * 9 = -29536
4000 * 10 = -25536
```

The bottom window shows the source code of the program, `E:9AM.C`, with the following code:

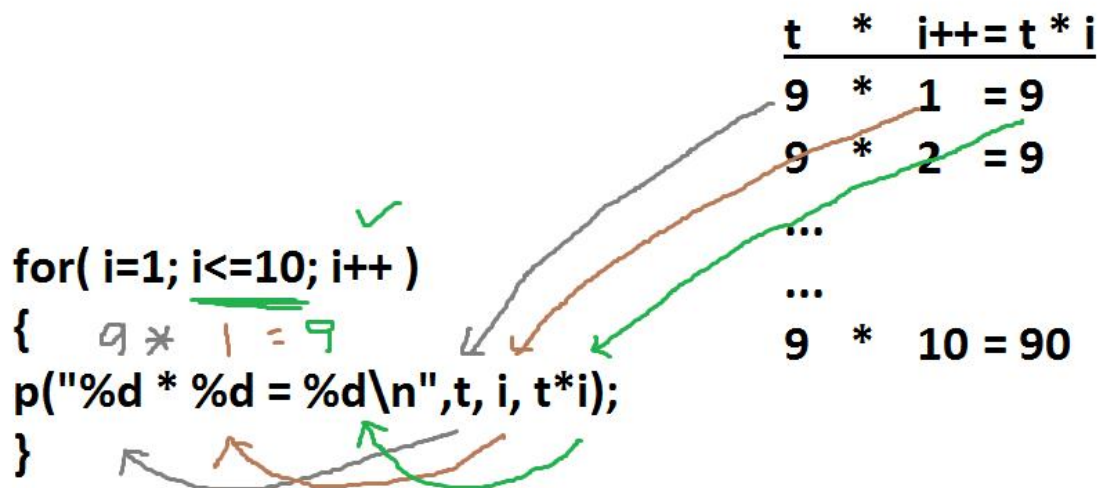
```
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 16 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
    long int t; int i;
    clrscr();
    printf("Enter table number "); scanf("%ld",&t);
    for(i=1;i<=10;i++)
    {
        printf("%ld * %d = %ld\n",t,i,t*i);
    }
    getch();
}
```

The IDE interface includes a menu bar at the top of the bottom window with options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. A status bar at the bottom right indicates the time as 9:31 AM on 18-Nov-24.

```
TC
Enter table number 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 = 36000
4000 * 10 = 40000
```



```
TC
Enter table number 400000
400000 * 1 = 400000
400000 * 2 = 800000
400000 * 3 = 1200000
400000 * 4 = 1600000
400000 * 5 = 2000000
400000 * 6 = 2400000
400000 * 7 = 2800000
400000 * 8 = 3200000
400000 * 9 = 3600000
400000 * 10 = 4000000
```



Print below series:

1 2 3 9 4 5 6 18 7 8 9 27 ... n

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 29 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i;
clrscr();
printf("Enter the number "); scanf("%d",&n);
for(i=1;i<=10;i++)
{
printf("%4d",i);
if(i%3==0)printf("%4d",i*3);_
}
getch();
}
```

Enter the number 10
1 2 3 9 4 5 6 18 7 8 9 27 10_

```

for( i=1; i<=n; i++)
{
printf(i);
if( i%3==0) p( i * 3 );
}

```

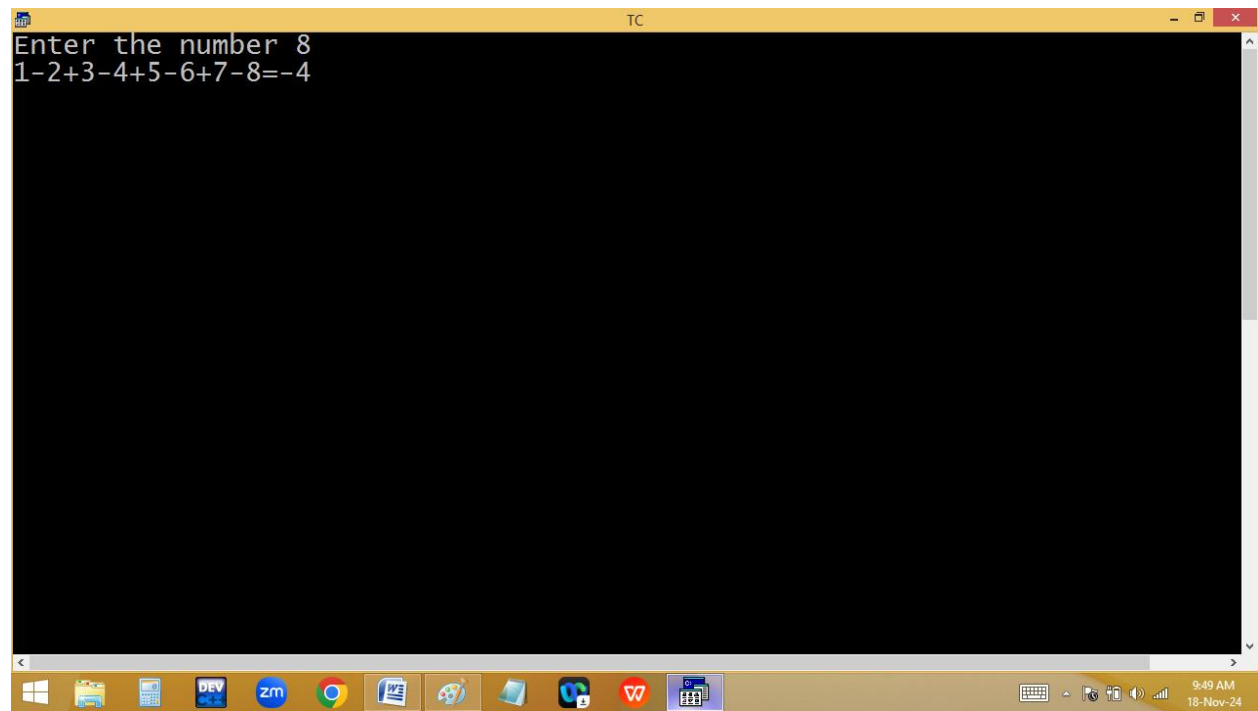
<u>n</u>	<u>i</u>
10	1%3=1
	2%3=2
	3%3=0 ==> 3*3=9
	4
	5
	6%3=0 ==> 6*3=18
	7
	8
	9%3=0 ==> 9*3=27
	10

Print below series:

n=5 → 1-2+3-4+5=3

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 11 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 number "); scanf("%d",&n);
for(i=1;i<=n;i++)
{
if(i%2==0)printf("%d+",i,s=s-i);
else printf("%d-",i,s=s+i);
}
printf("\b= %d",s);
getch();
}
```

Enter the number 5
1-2+3-4+5=3_



```
TC
Enter the number 2
1-2=-1_
```

```
for( i=1; i<=5; i++ )
{
    if( i%2==0 ) printf("%d+",i,s=s-i);
    else printf("%d-",i, s=s+i);
}
printf("=%d",s);
```

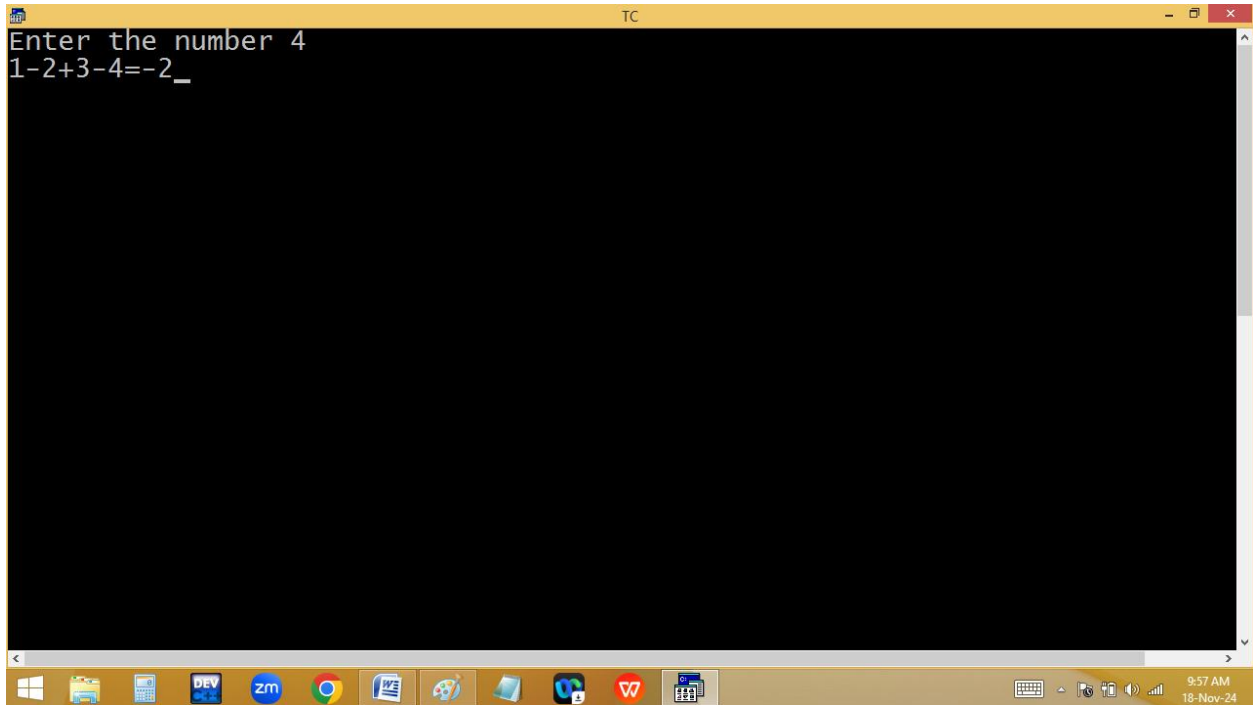
<u>n</u>	<u>i</u>	<u>s</u>
5	1%2=1	0+1=1 ✓
	2%2=0	1-2=-1
	3%2=1	-1+3=2
	4%2=0	2-4=-2
	5%2=1	-2+5=3
	6	

1-2+3-4+5- = 3

Without using \b:

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 11 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 number "); scanf("%d",&n);
for(i=1;i<n;i++)
{
if(i%2==0)printf("%d+",i,s=s-i);
else printf("%d-",i,s=s+i);
}
if(i%2==0)printf("%d=%d",i,s-i);
else printf("%d=%d",i,s+i);
getch();
}
```

Enter the number 5
1-2+3-4+5=3_



```
for( i=1; i< 5; i++)
{
    if( i%2==0 ) printf("%d+",i,s=s-i);
    else printf("%d-",i, s=s+i);
}
```

```
if(i%2==0) printf("%d= %d",i,s-i);
else printf("%d=%d",i,s+i);
```

<u>n</u>	<u>i</u>	<u>s</u>	
5	1	0	1 ✓
	1%2=1	0+1=1	
	2%2=0	1-2=-1	
	3%2=1	-1+3=2	
	4%2=0	2-4=-2	
	5%2=1	-2+5=3	

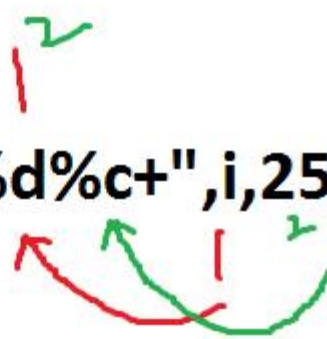
$$1 - 2 + 3 - \underline{4} + 5 = 3$$

Print below series:

$$n=5 \rightarrow 1^2 + 2^2 + 3^2 + 4^2 + 5^2 = 1 + 4 + 9 + 16 + 25 = 55$$

```
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 19 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 number "); scanf("%d",&n);
for(i=1;i<=n;i++)
{
printf("%d%c+",i,253,s=s+i*i);
}
printf("\b=%d",s);
getch();
}
```

Enter the number 5
1²+2²+3²+4²+5²=55_


`printf("%d%c+", i, 253);`

Without using `\b`:

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 1 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 number "); scanf("%d",&n);
for(i=1;i<=n;i++)
{
s=s+i*i;
if(i<n) printf("%d%c+",i,253);
else printf("%d%c=%d",i,253,s);
}
getch();
}
```

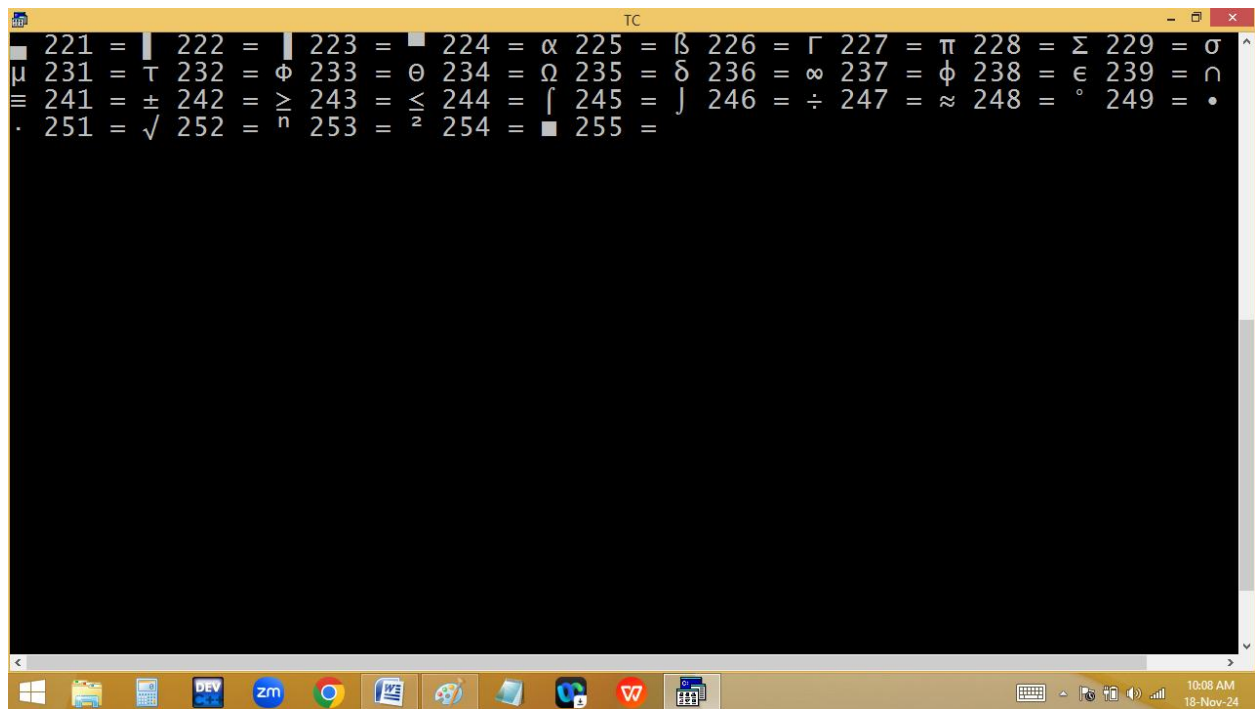
Enter the number 5
1²+2²+3²+4²+5²=55_

ASCII Table:

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 1 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
clrscr();
for(i=0;i<256;i++)printf("%d = %c\t",i,i);
getch();
}
```

TC

0 =	1 = ☺	2 = ☹	3 = ♥	4 = ♦	5 = ♣	6 = ♠	7 =	8 =
9 =	10 =	11 =	12 =	13 =	14 = ♪	15 = ✱	16 = ▶	17 = ◀
18 = ↑	19 = !!	20 = ¶	21 =	22 = ▾	23 = ↓	24 = ↑	25 = ↓	26 =
27 = ←	28 = L	29 = ↔	30 =	31 = ▼	32 = ⚡	33 = !	34 = "	35 = #
36 = \$	37 = %	38 = &	39 = ' 4	40 =	41 =)	42 = *	43 = +	44 = ,
45 = -	46 = .	47 = /	48 = 0	49 = 1 5	50 =	51 = 3	52 = 4	53 = 5
54 = 6	55 = 7	56 = 8	57 = 9	58 = :	59 = ; 6	60 =	61 = =	62 = >
63 = ?	64 = @	65 = A	66 = B	67 = C	68 = D	69 = E 7	70 =	71 = G
72 = H	73 = I	74 = J	75 = K	76 = L	77 = M	78 = N	79 = O 8	80 =
81 = Q	82 = R	83 = S	84 = T	85 = U	86 = V	87 = W	88 = X	89 = Y 9
90 =	91 = [92 = \	93 =]	94 = ^	95 = _	96 = `	97 = a	98 = b
99 = c 1	100 =	101 = e	102 = f	103 = g	104 = h	105 = i	106 = j	107 = k
108 = l	109 = m 1	110 =	111 = o	112 = p	113 = q	114 = r	115 = s	116 = t
117 = u	118 = v	119 = w 1	120 =	121 = y	122 = z	123 = {	124 =	125 = }
126 = ~	127 = ∆	128 = Ç	129 = ü	130 =	131 = é	132 = â	133 = à	134 = ä
135 = ç	136 = ê	137 = ë	138 = ð	139 = ï	140 =	141 = ì	142 = Ä	143 = Å
144 = É	145 = æ	146 = Æ	147 = Ò	148 = Ö	149 = Ò	150 =	151 = Ù	152 = Ÿ
153 = Ö	154 = Ü	155 = €	156 = £	157 = ¥	158 = ₨	159 = f	160 =	161 = á
162 = í	163 = ó	164 = ù	165 = ñ	166 = Ñ	167 = ª	168 = º	169 = ¸	170 =
171 = ½	172 = ¼	173 = ;	174 = «	175 = »	176 = ⋮	177 = ⋮	178 = ⋮	179 =
180 =	181 = ¶	182 = ¶	183 = ¶	184 = ¶	185 = ¶	186 = ¶	187 = ¶	188 = ¶
189 = ¶	190 =	191 = ¶	192 = ¶	193 = ¶	194 = ¶	195 = ¶	196 = ¶	197 = ¶
198 = ¶	199 = ¶	200 =	201 = ¶	202 = ¶	203 = ¶	204 = ¶	205 = ¶	206 = ¶
207 = ¶	208 = ¶	209 =	210 =	211 = ¶	212 = ¶	213 = ¶	214 = ¶	215 = ¶
216 = ¶	217 = ¶	218 = ¶	219 =					



Harmonic series:

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

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 21 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int i,n; float s=1;
clrscr();
printf("Enter n value "); 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();
}
```

Enter n value 5
1+1/1+1/2+1/3+1/4+1/5=3.28

Finding digits sum:

$n=123 \rightarrow 1 + 2 + 3 = 6$

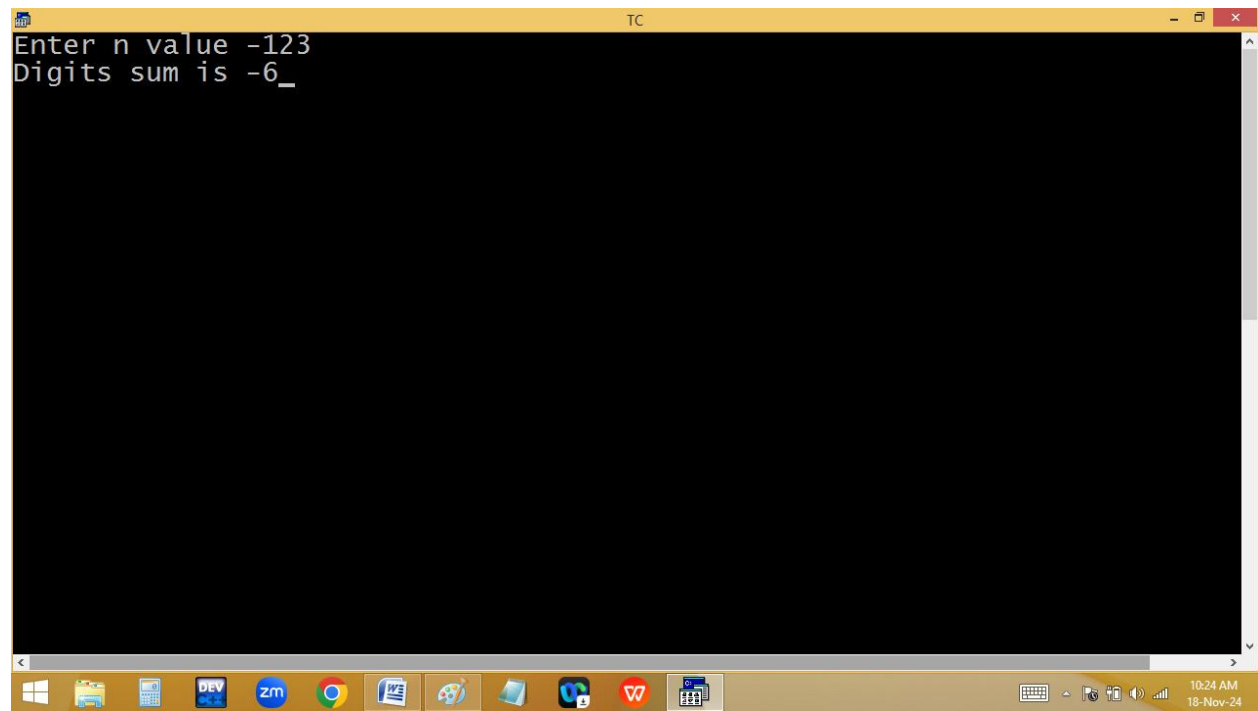
The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code for a C program. The code is as follows:

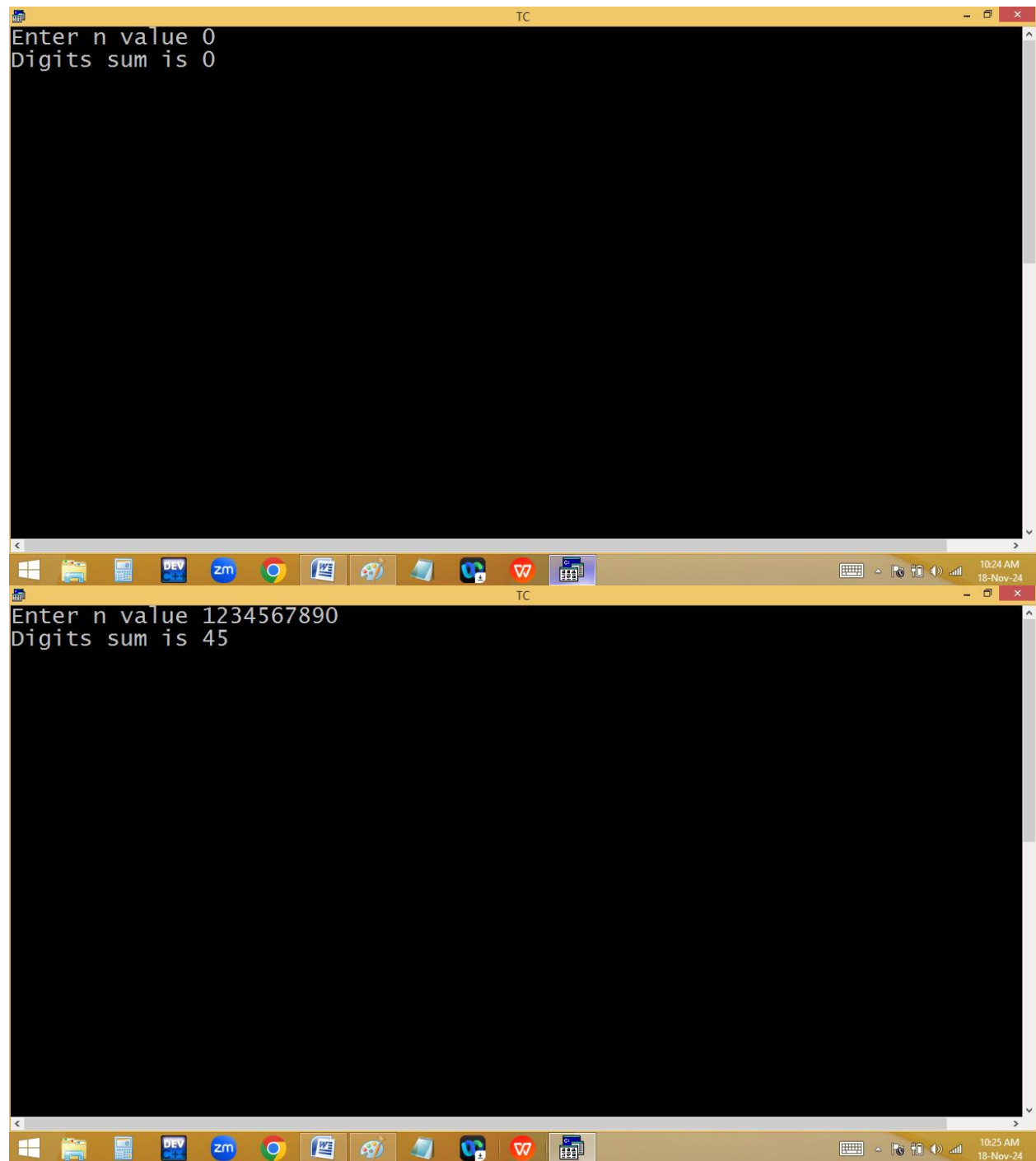
```
File Edit Run Compile Project Options Debug Break/watch
Line 5 Col 12 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long n; int_s;
clrscr();
printf("Enter n value "); scanf("%ld",&n);
for(s=0;n!=0;n=n/10)s=s+n%10;
printf("Digits sum is %d",s);
getch();
}
```

The bottom window shows the program's execution. It prompts the user to enter a value, and the user has entered 123. The program then outputs the sum of the digits, which is 6.

```
Enter n value 123
Digits sum is 6
```

The Windows taskbar at the bottom of the screen shows the time as 10:24 AM on 18-Nov-24. Various application icons are visible in the taskbar, including DEV, zm, Chrome, and others.



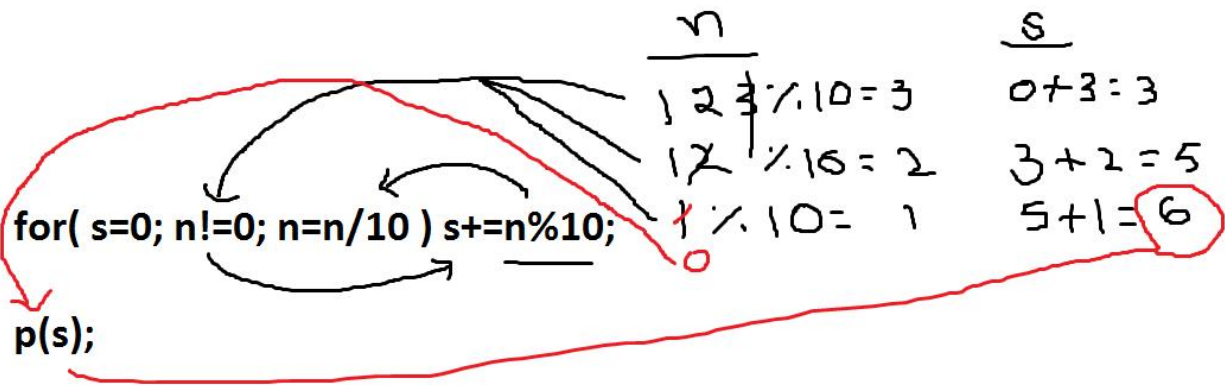


The image shows two windows of the Turbo C++ (TC) IDE. The top window is the source code editor, displaying a C program to calculate the sum of digits of a number. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 8 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long n; int s=0;
clrscr();
printf("Enter n value "); scanf("%ld",&n);
for( ; n!=0;n=n/10)s=s+n%10;
printf("Digits sum is %d",s);
getch();
}
```

The bottom window is the output console, showing the execution of the program. It displays the prompt "Enter n value" followed by the input "1257", and then the output "Digits sum is 15_".

```
Enter n value 1257
Digits sum is 15_
```



The screenshot shows a Turbo C++ IDE window with the following code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    long n; int s=0;
    clrscr();
    printf("Enter n value "); scanf("%ld",&n);
    for( n!=0;n=n/10)s=s+n%10;
    printf("Digits sum is %d",s);
    getch();
}
```

The error message displayed is: "Error: For statement missing ; in function main". The error is located at the end of the for loop line: `for(n!=0;n=n/10)s=s+n%10;`.

Finding Armstrong no:

1 is a single digit no $\rightarrow 1^1 = 1$

2 is a single digit no $\rightarrow 2^1 = 2$

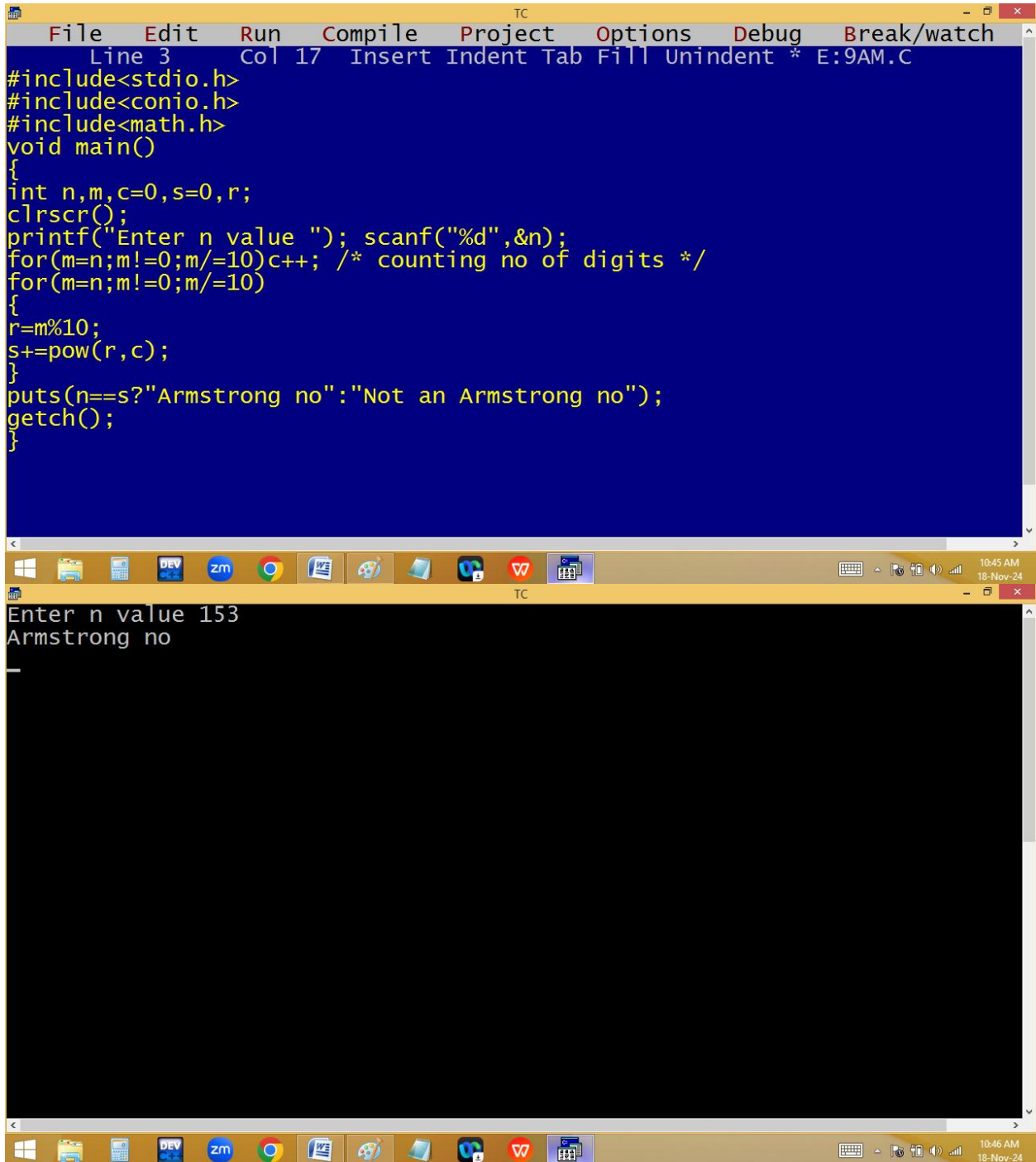
9 is a single digit no $\rightarrow 9^1 = 9$

153 is a three digit no $\rightarrow 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$

370, 371, 407, 1634, 8208,...

1634 is a 4 digit no == $1^4 + 6^4 + 3^4 + 4^4 = 1634$

Here power depended on no of digits.



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 an Armstrong number. The code includes headers for stdio.h, conio.h, and math.h. It defines a main function that takes an integer 'n' as input, counts the number of digits 'c', and calculates the sum of each digit raised to the power of 'c'. If the sum equals the original number, it prints 'Armstrong no'; otherwise, it prints 'Not an Armstrong no'.

```
File Edit Run Compile Project Options Debug Break/watch
Line 3 Col 17 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int n,m,c=0,s=0,r;
clrscr();
printf("Enter n value "); scanf("%d",&n);
for(m=n;m!=0;m/=10)c++; /* counting no of digits */
for(m=n;m!=0;m/=10)
{
r=m%10;
s+=pow(r,c);
}
puts(n==s?"Armstrong no":"Not an Armstrong no");
getch();
}
```

The bottom window shows the execution of the program. It prompts the user to enter a value, and the user has entered 153. The program outputs 'Armstrong no'.

```
Enter n value 153
Armstrong no
```



```
TC
Enter n value 1634
Armstrong no
_
```

```
TC
Enter n value 1
Armstrong no
_
```

