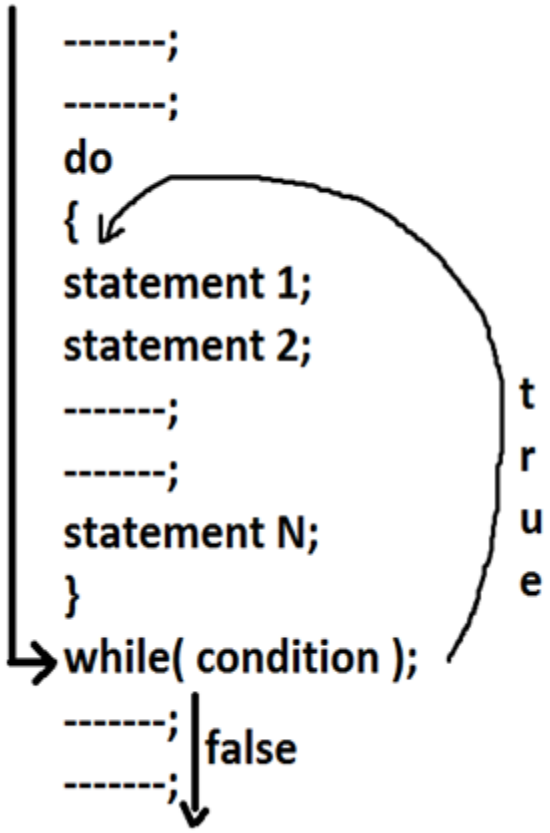
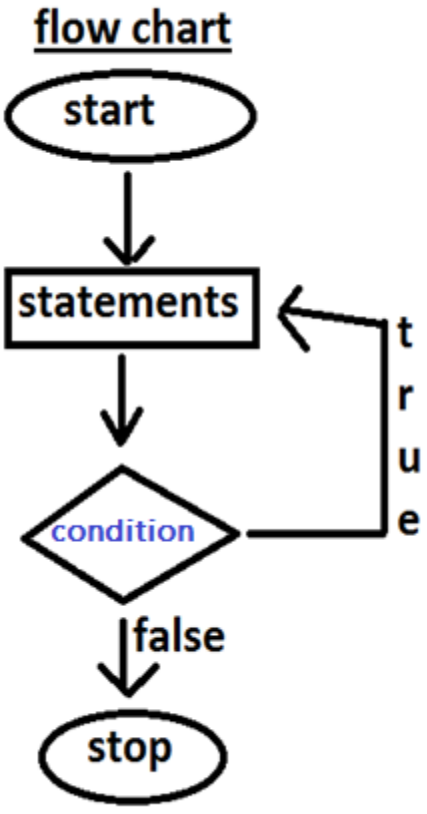
do .. while:

- It is an exit control loop. i.e. in a do while the condition is tested at last.
- Here do , while are the keywords.
- It is also used to repeat a program several times based on a condition.
- In a do while, do block statements are executed first and later while condition is tested. If the while condition is true then once again the do block statements are repeated. Like this the process is continued until the while condition becomes false.
- In do while, the while should be end with semicolon (;) .
- Regardless of while condition, the do statements are executed at least one

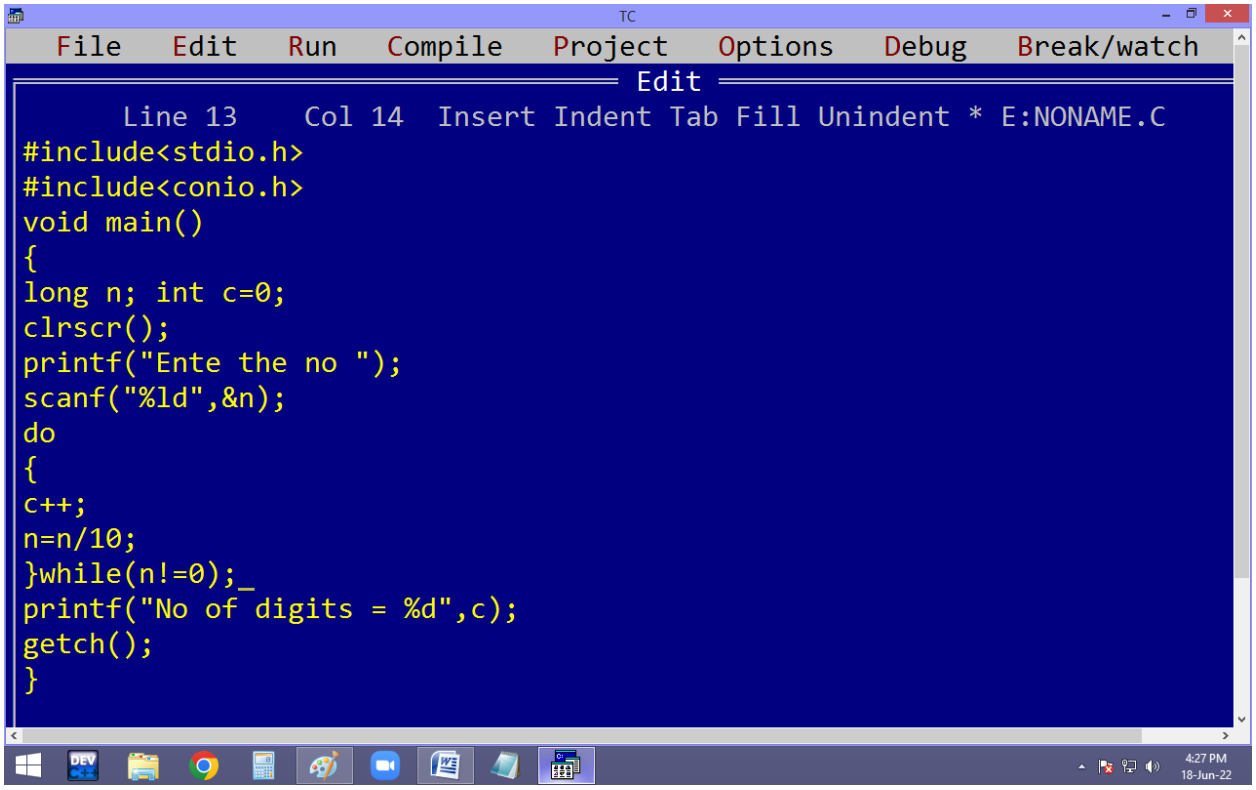
time. Due to this sometimes we are getting unwanted results [garbage values].

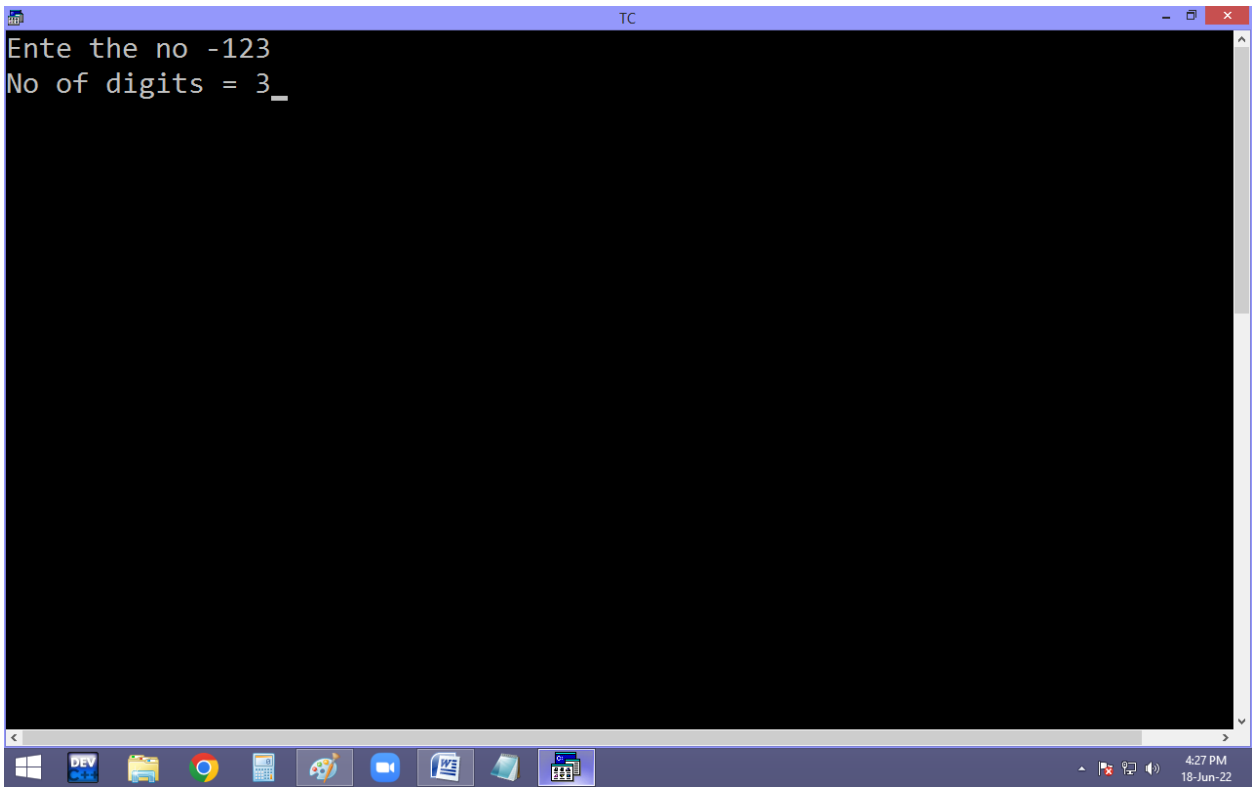
- Use do while whenever it is compulsory because of in do while the program is controlled at the bottom / last.

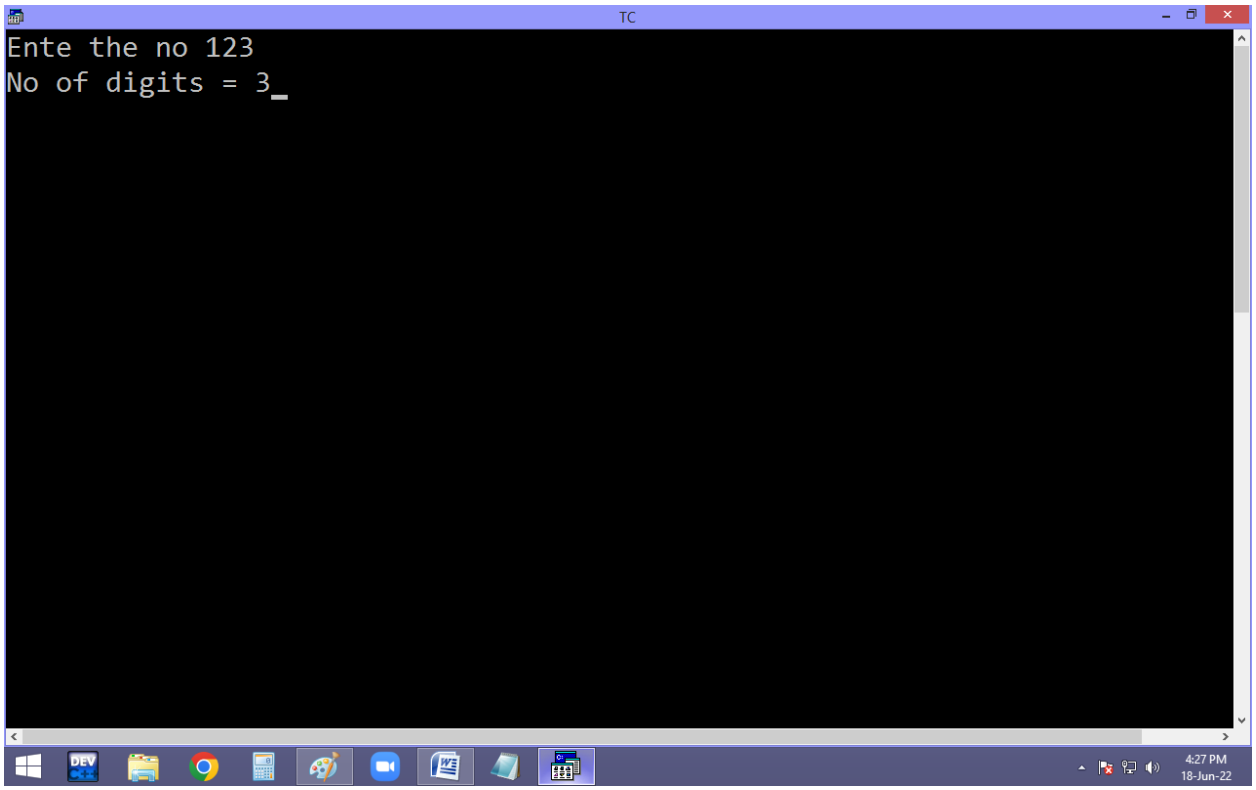


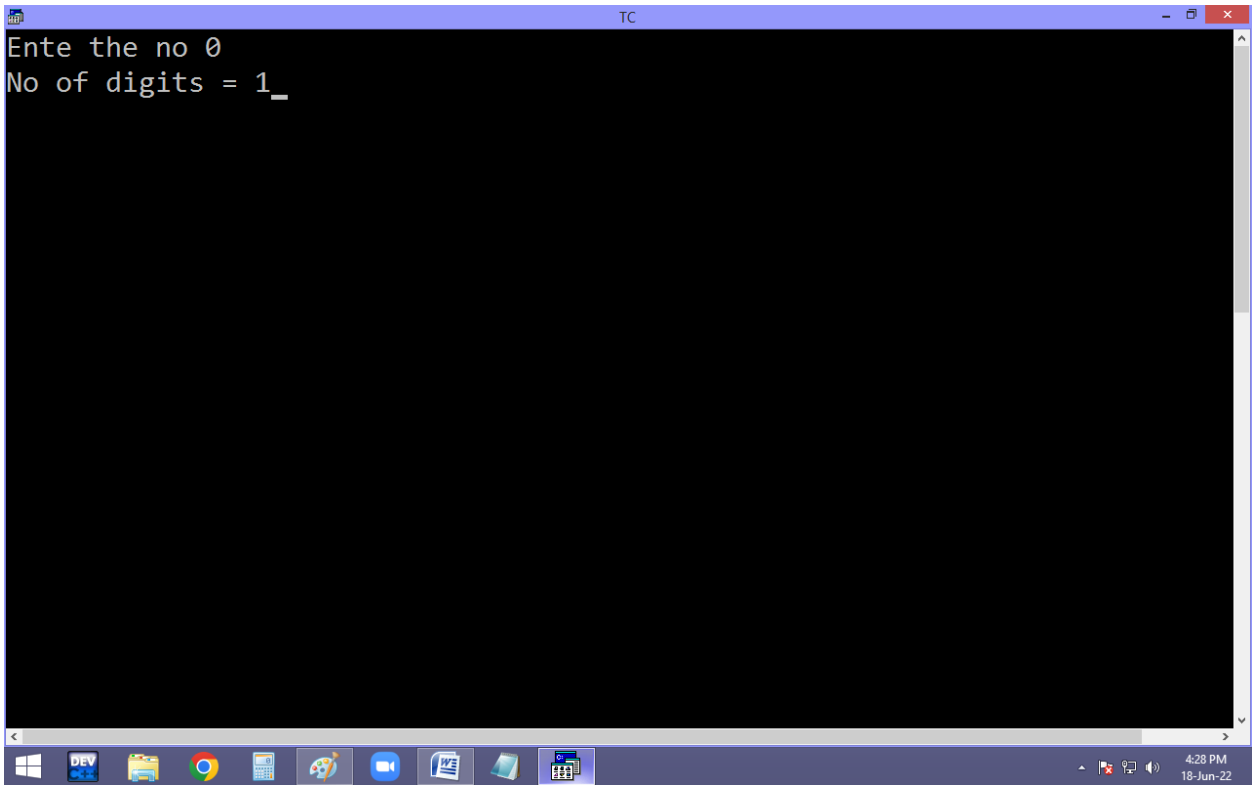


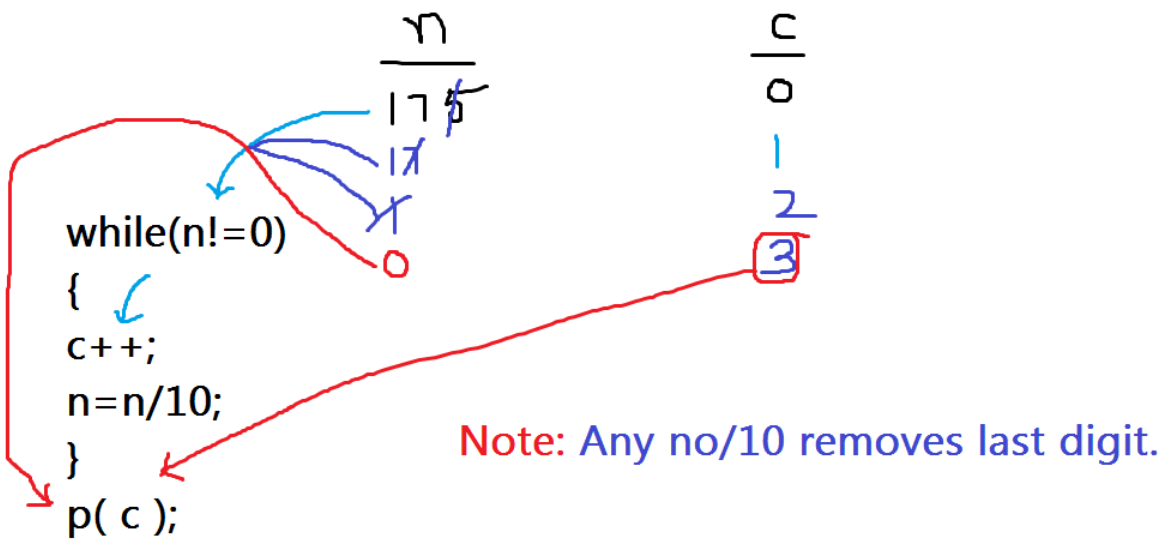
Eg. finding no of digits in given no.



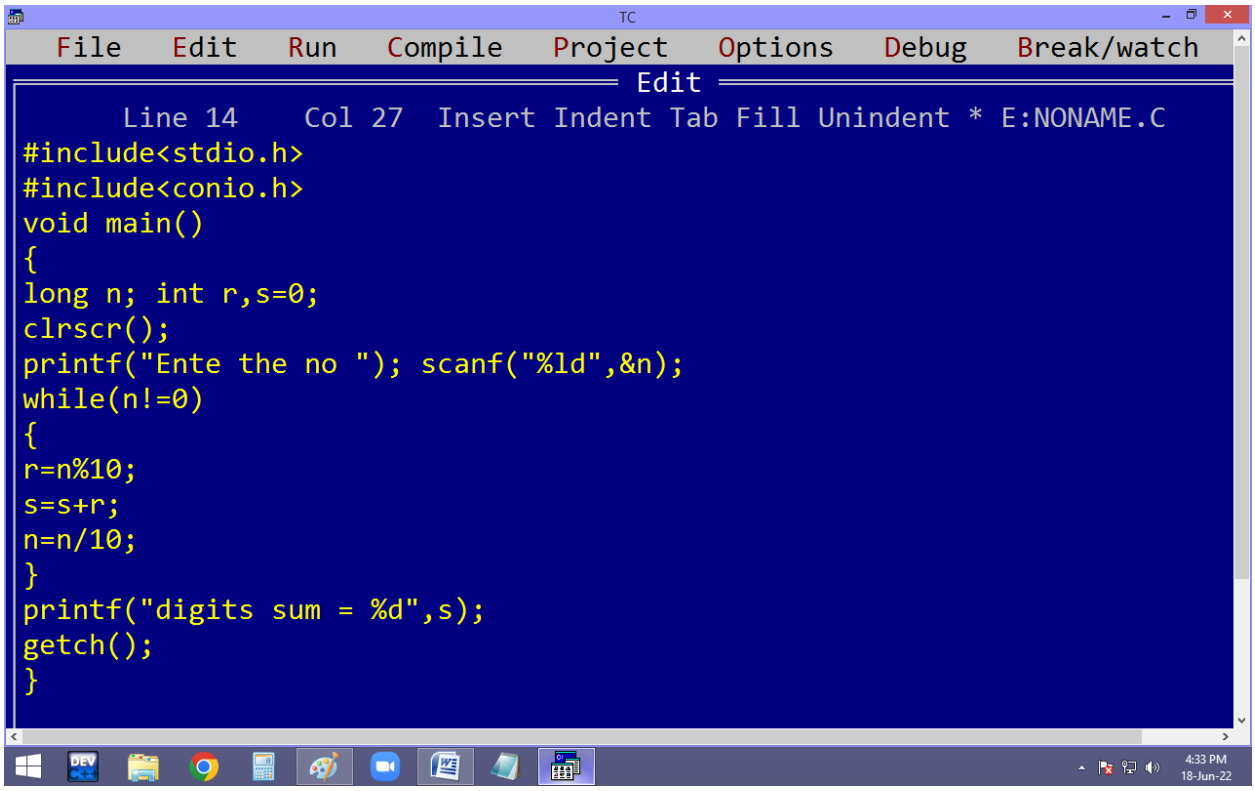


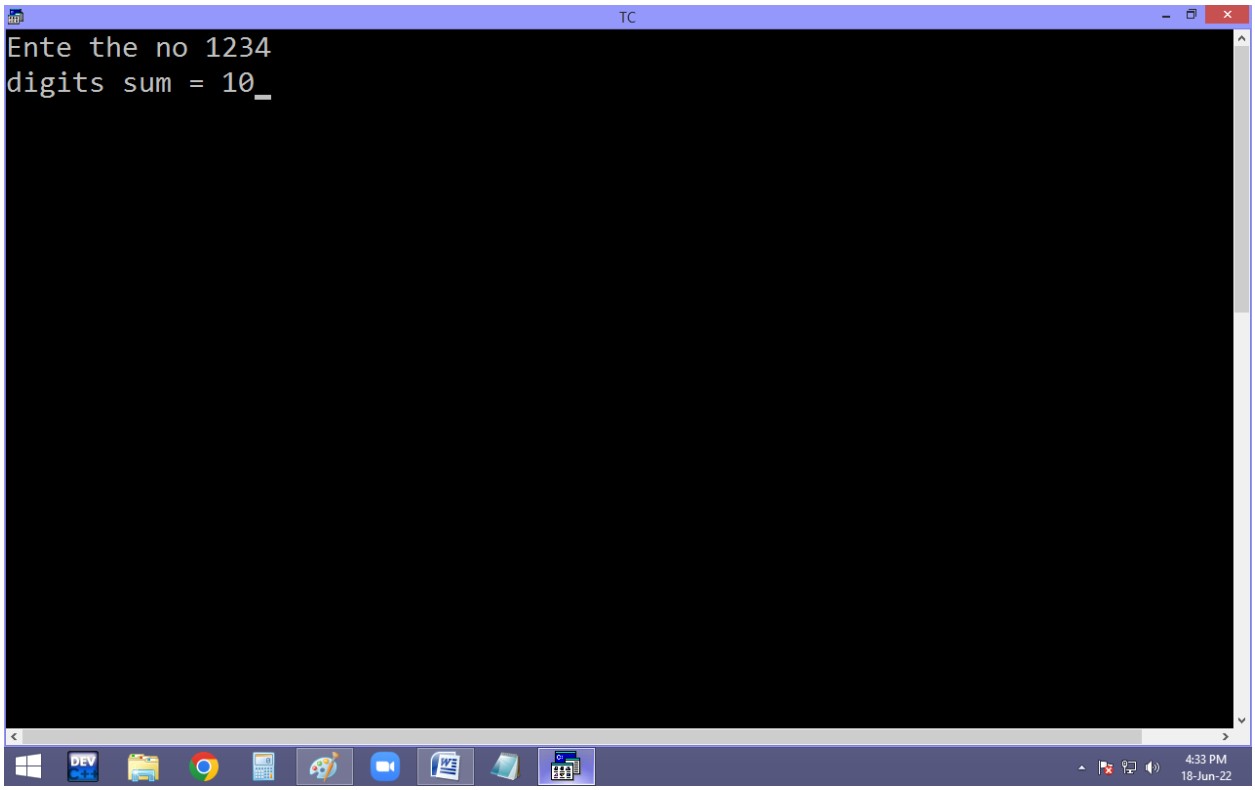

TC
Ente the no 123
No of digits = 3
4:27 PM
18-Jun-22

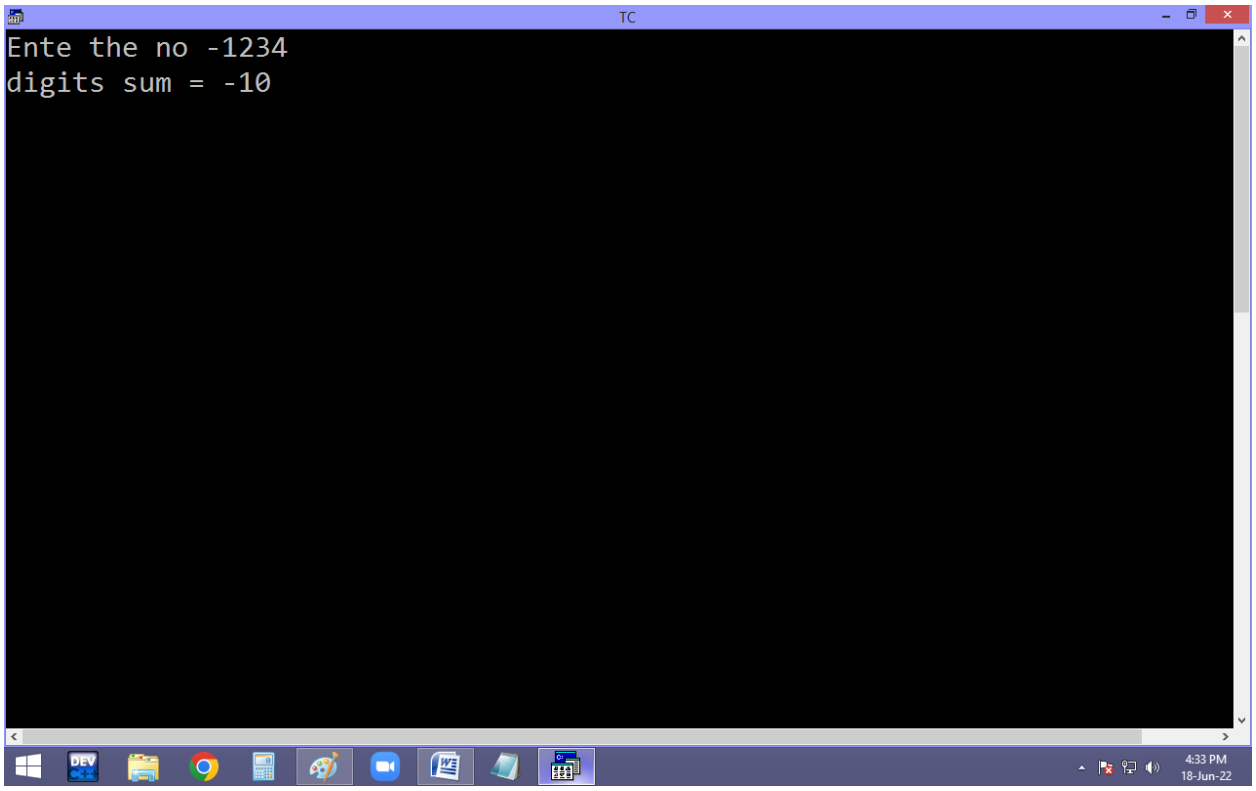


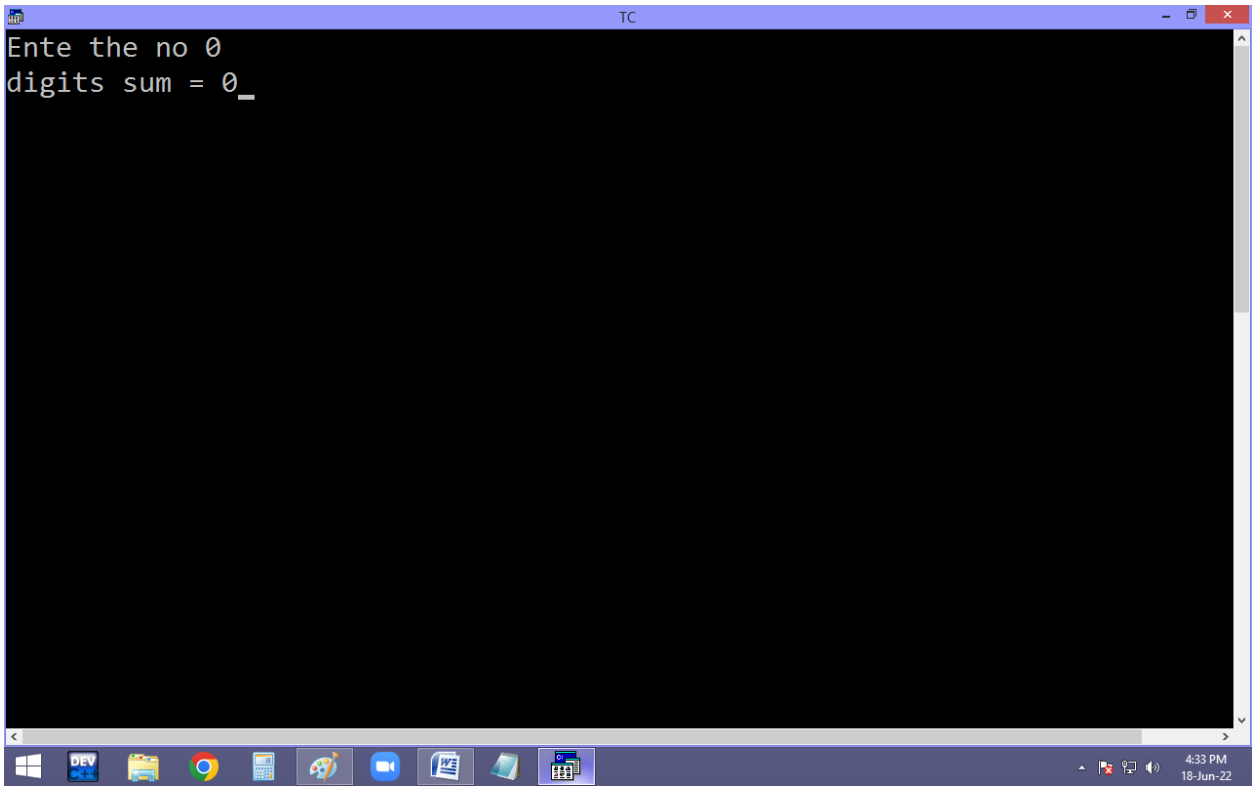


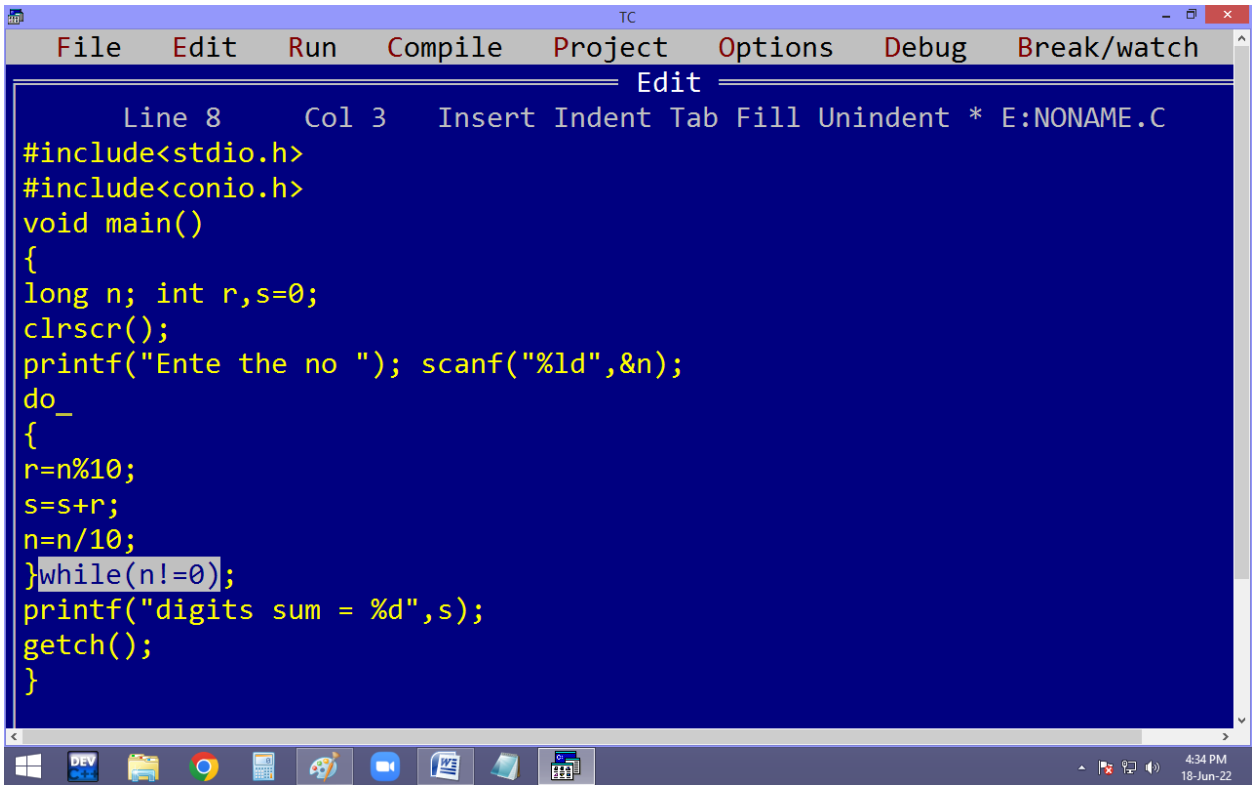
Eg. finding digits sum.

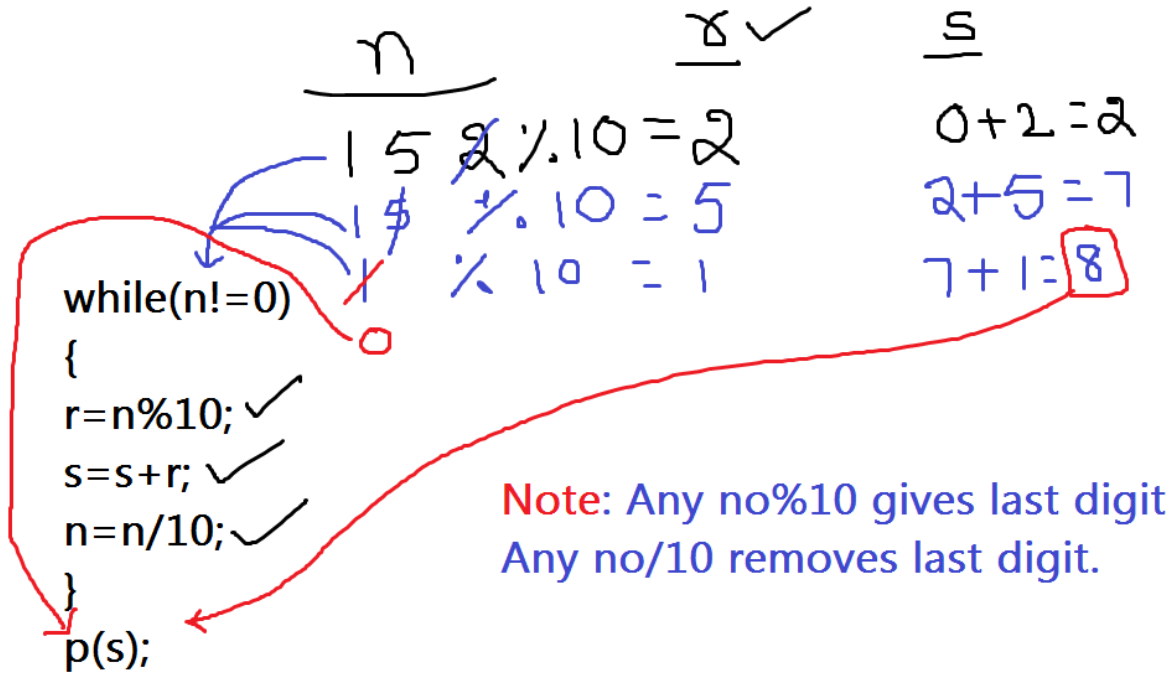

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 14 Col 27 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
long n; int r,s=0;
clrscr();
printf("Ente the no "); scanf("%ld",&n);
while(n!=0)
{
r=n%10;
s=s+r;
n=n/10;
}
printf("digits sum = %d",s);
getch();
}


TC
Ente the no 1234
digits sum = 10


TC
Ente the no -1234
digits sum = -10
4:33 PM
18-Jun-22

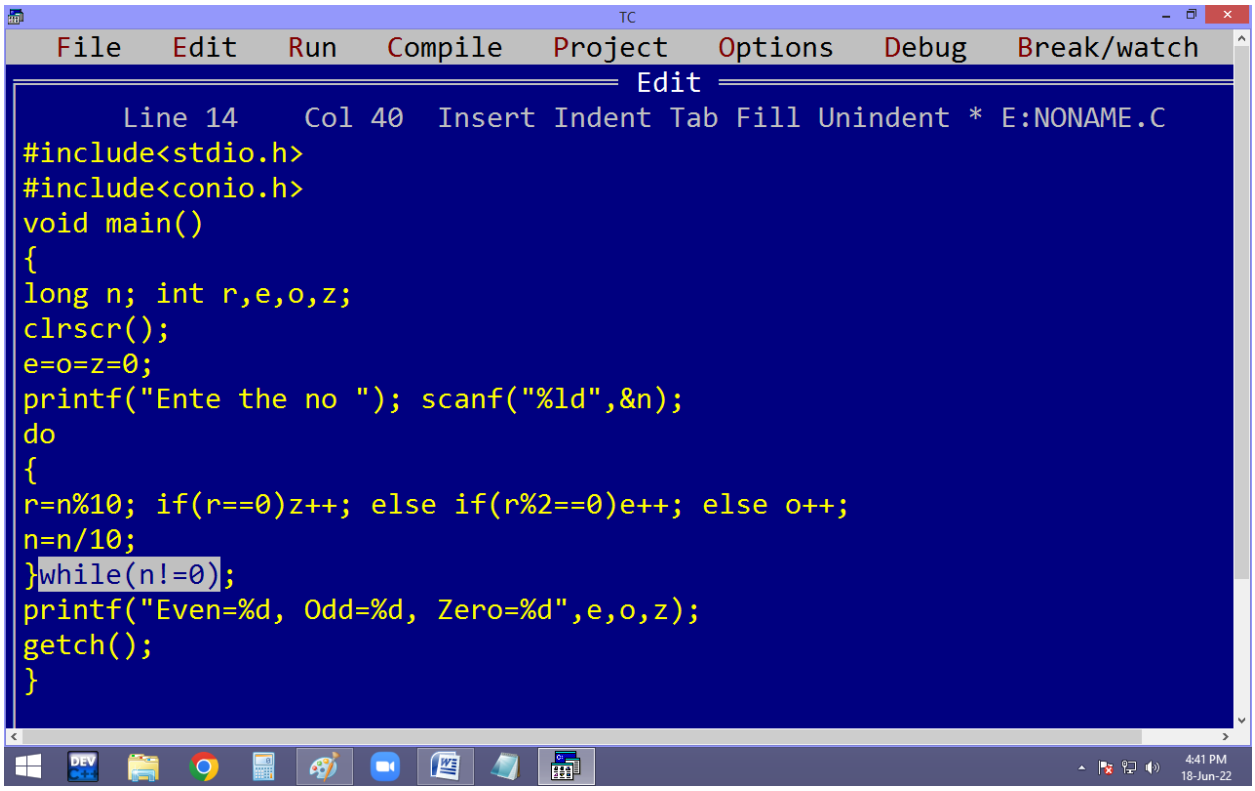

TC
Ente the no 0
digits sum = 0
4:33 PM
18-Jun-22

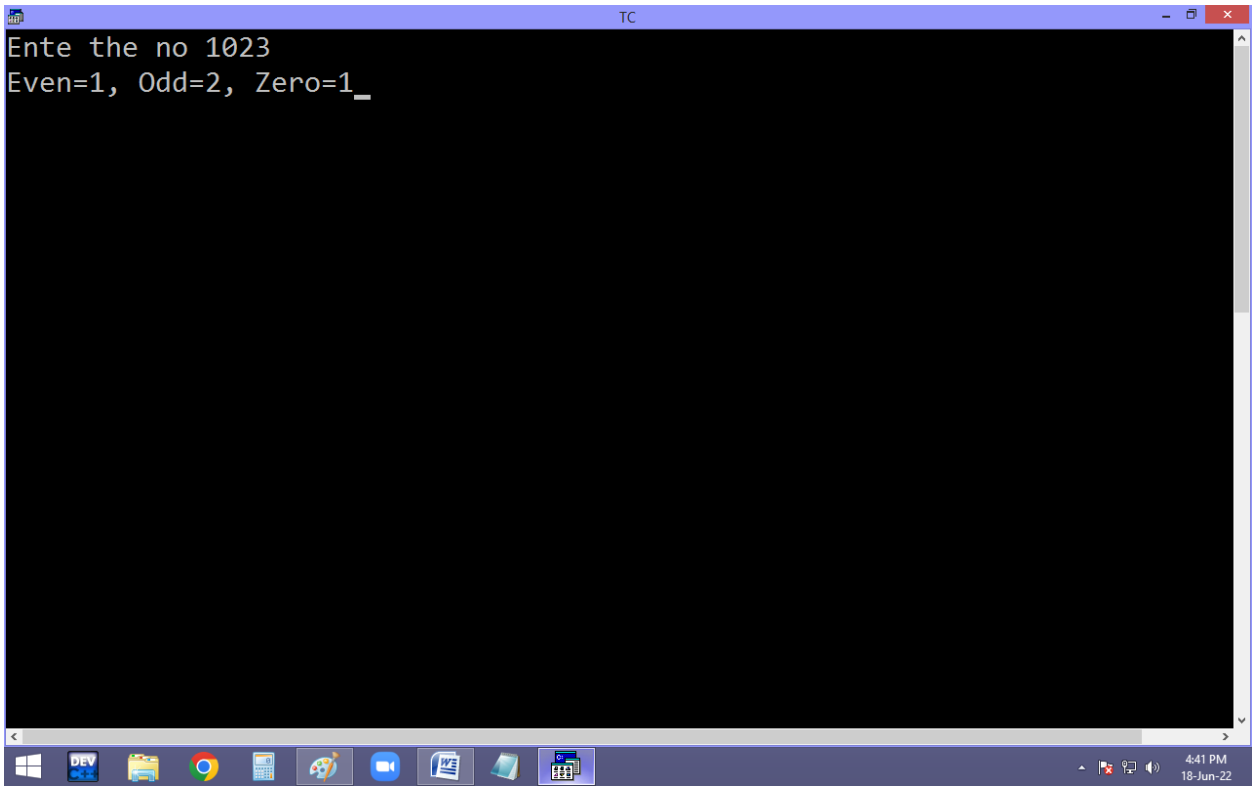


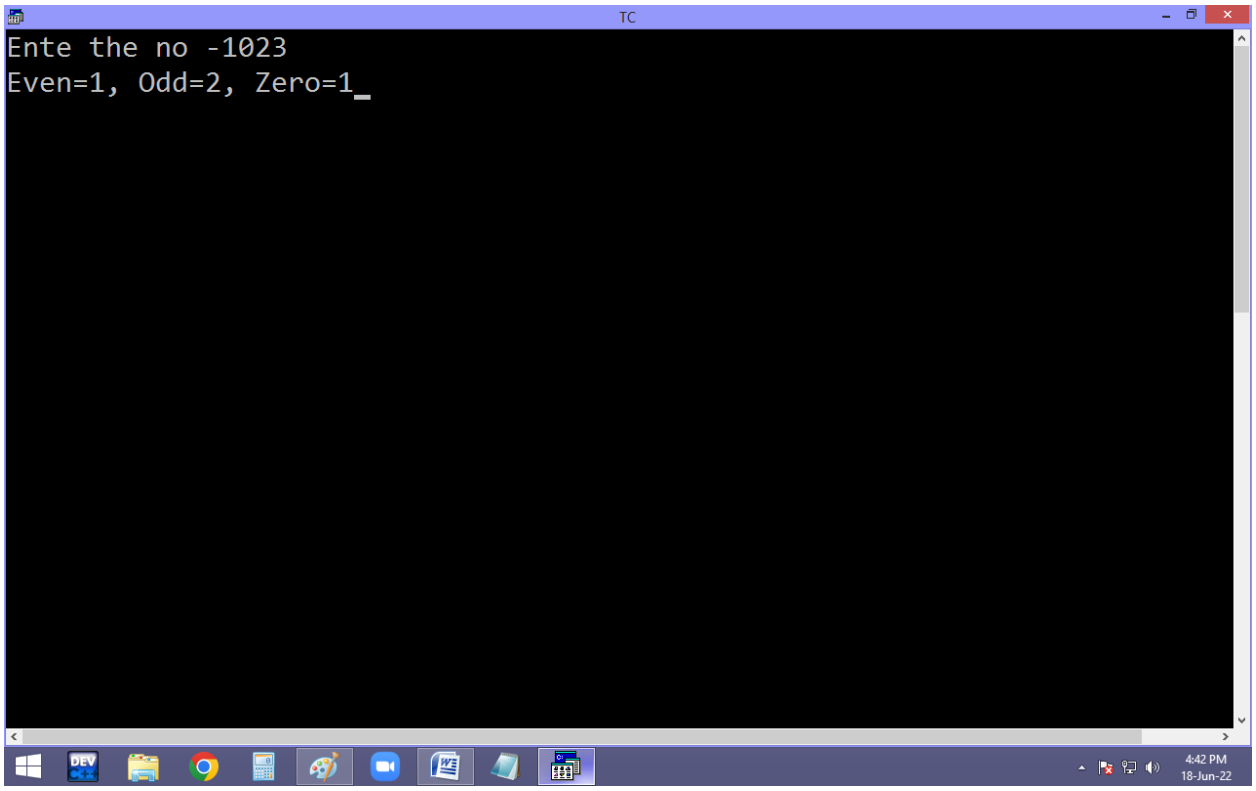


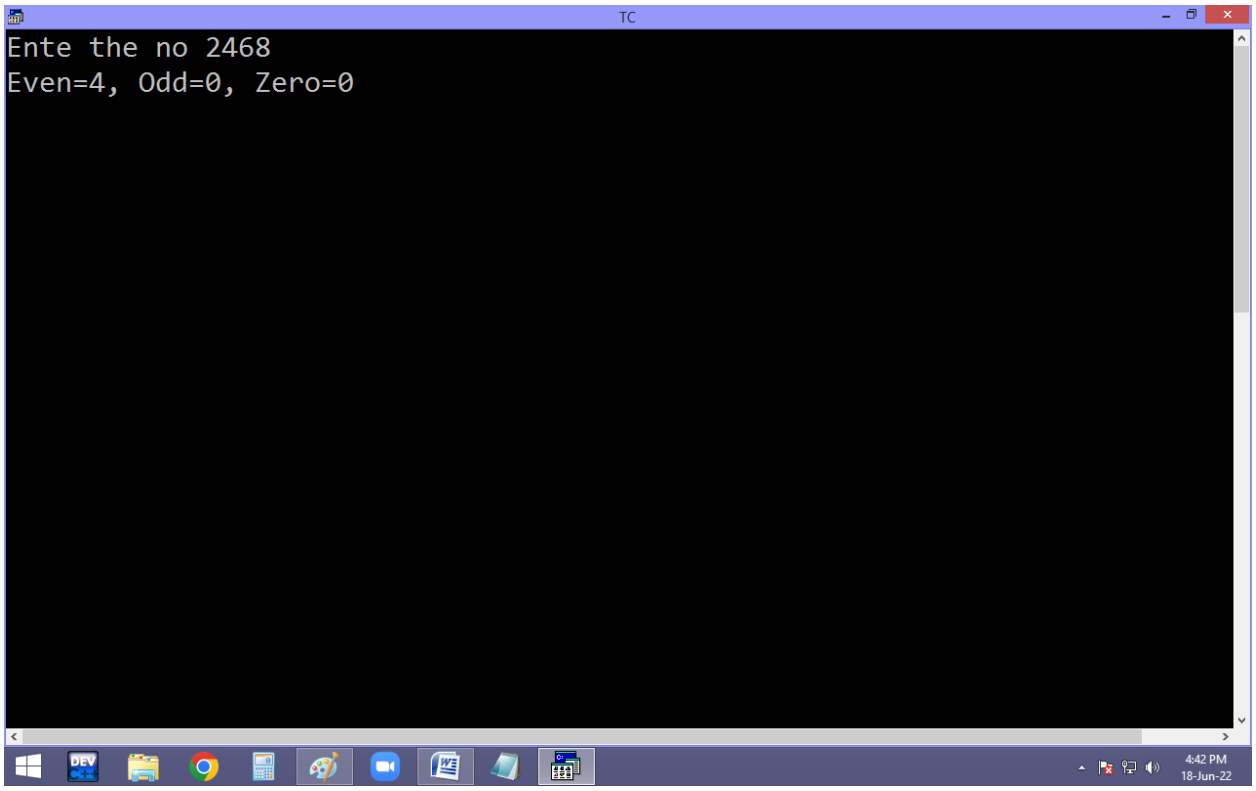
Eg. finding no of even, odd, zero digits in given no.

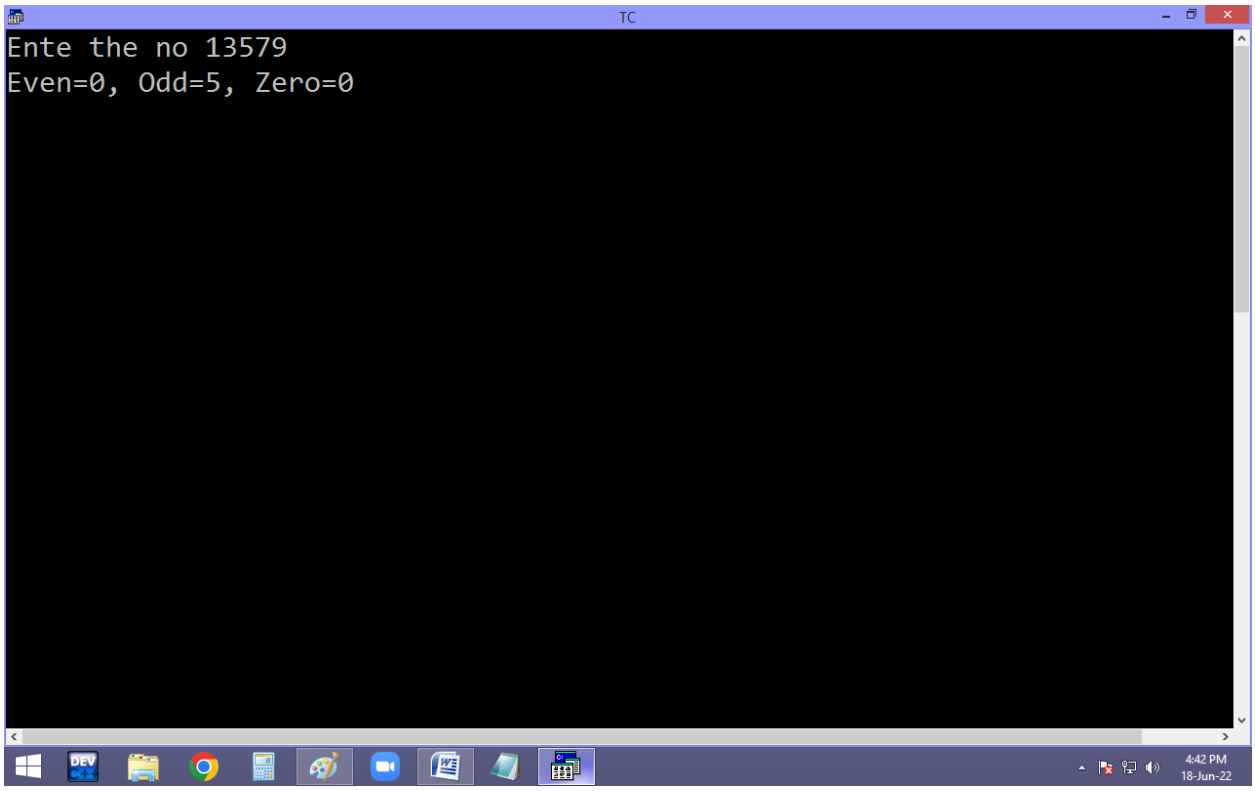
For example 1023 → 1 even, 2 odd, 1 zero

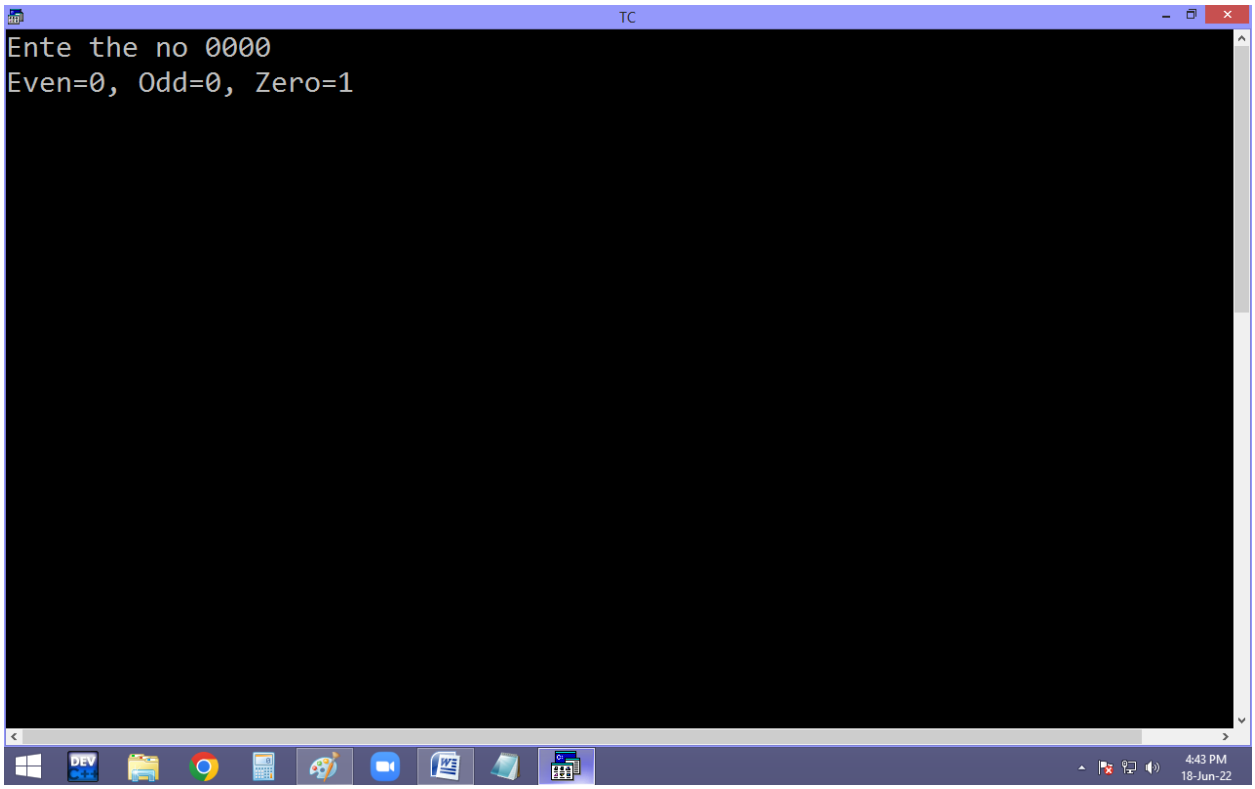

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 14 Col 40 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
long n; int r,e,o,z;
clrscr();
e=o=z=0;
printf("Ente the no "); scanf("%ld",&n);
do
{
r=n%10; if(r==0)z++; else if(r%2==0)e++; else o++;
n=n/10;
}while(n!=0);
printf("Even=%d, Odd=%d, Zero=%d",e,o,z);
getch();
}

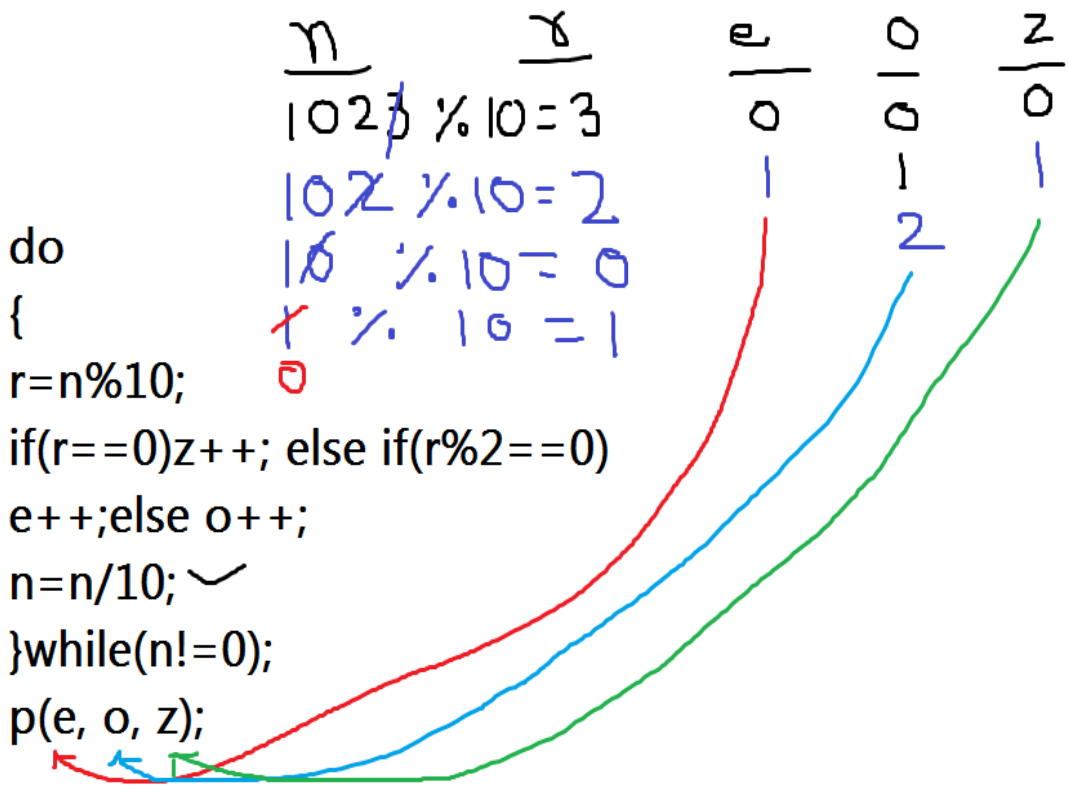

TC
Ente the no 1023
Even=1, Odd=2, Zero=1


TC
Ente the no -1023
Even=1, Odd=2, Zero=1
4:42 PM
18-Jun-22

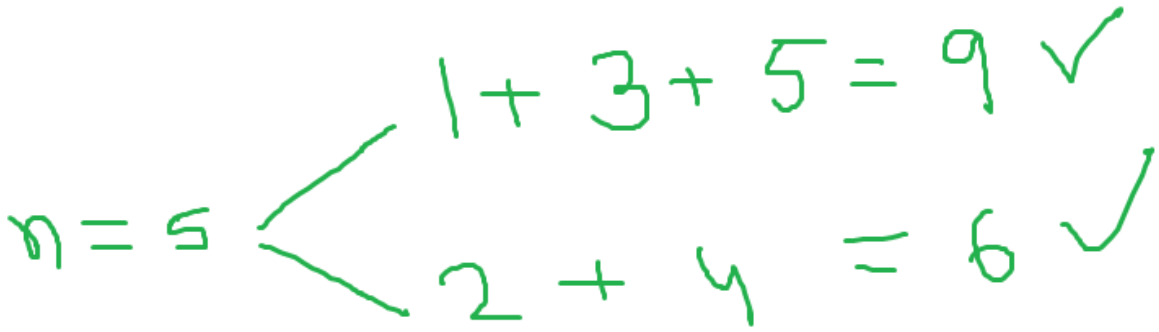

TC
Ente the no 2468
Even=4, Odd=0, Zero=0
4:42 PM
18-Jun-22


TC
Ente the no 13579
Even=0, Odd=5, Zero=0
4:42 PM
18-Jun-22


TC
Ente the no 0000
Even=0, Odd=0, Zero=1


n
r
e
o
z
1023 % 10 = 3
102 % 10 = 2
10 % 10 = 0
1 % 10 = 1
0
0
0
0
1
1
1
2
do
{
r=n%10;
if(r==0)z++; else if(r%2==0)
e++;else o++;
n=n/10;
}while(n!=0);
p(e, o, z);

Finding 1..n even, odd numbers sum.



TC

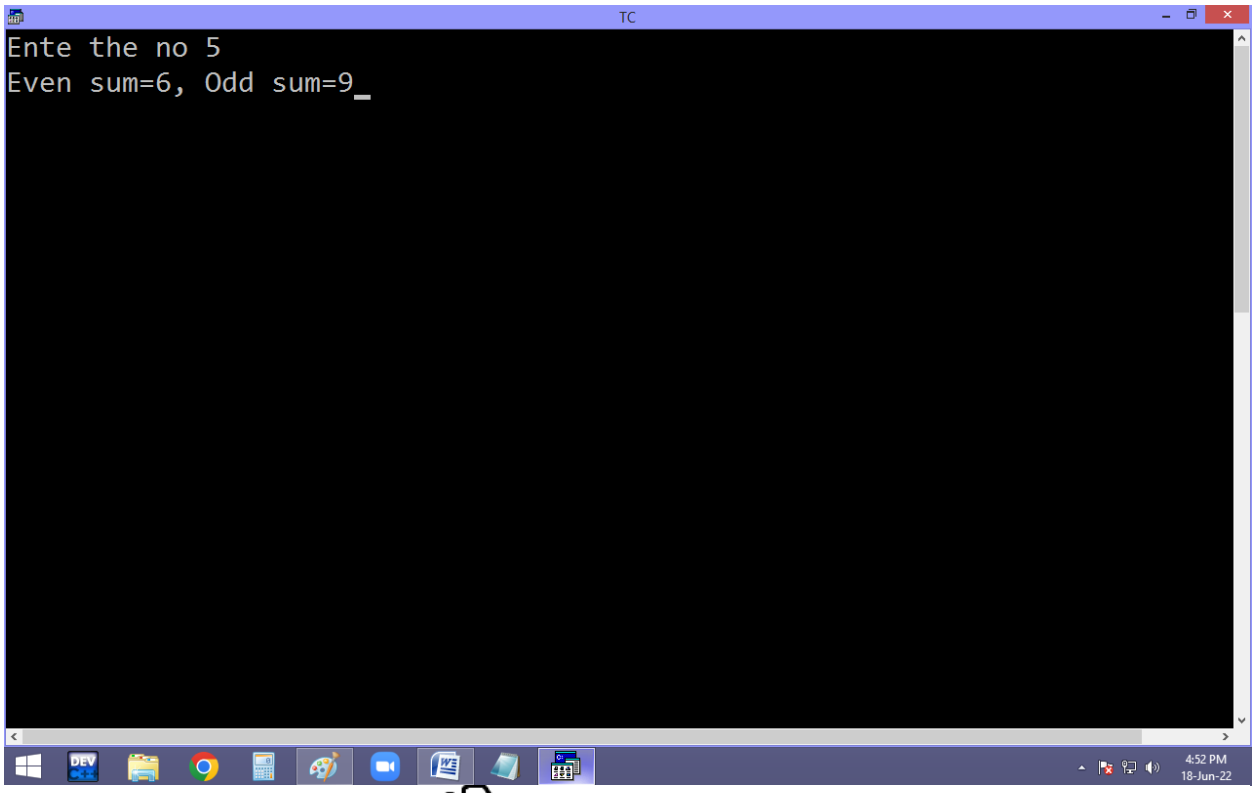
File Edit Run Compile Project Options Debug Break/watch

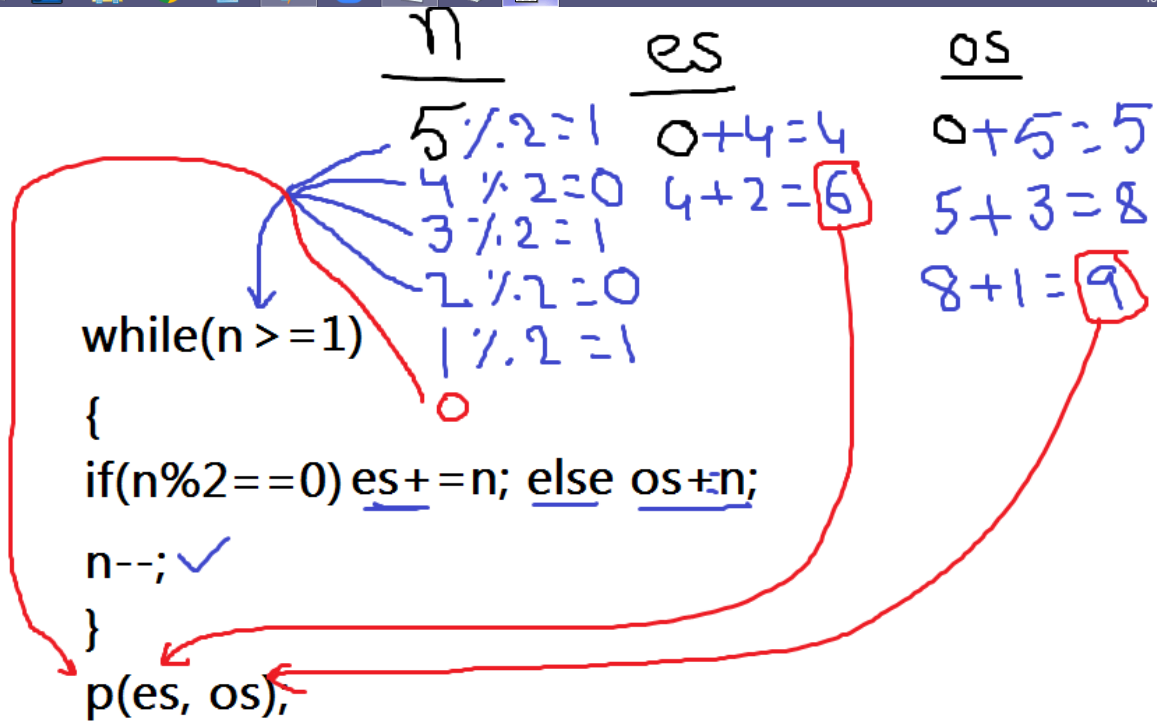
Edit

Line 11 Col 31 Insert Indent Tab Fill Unindent * E:NONAME.C

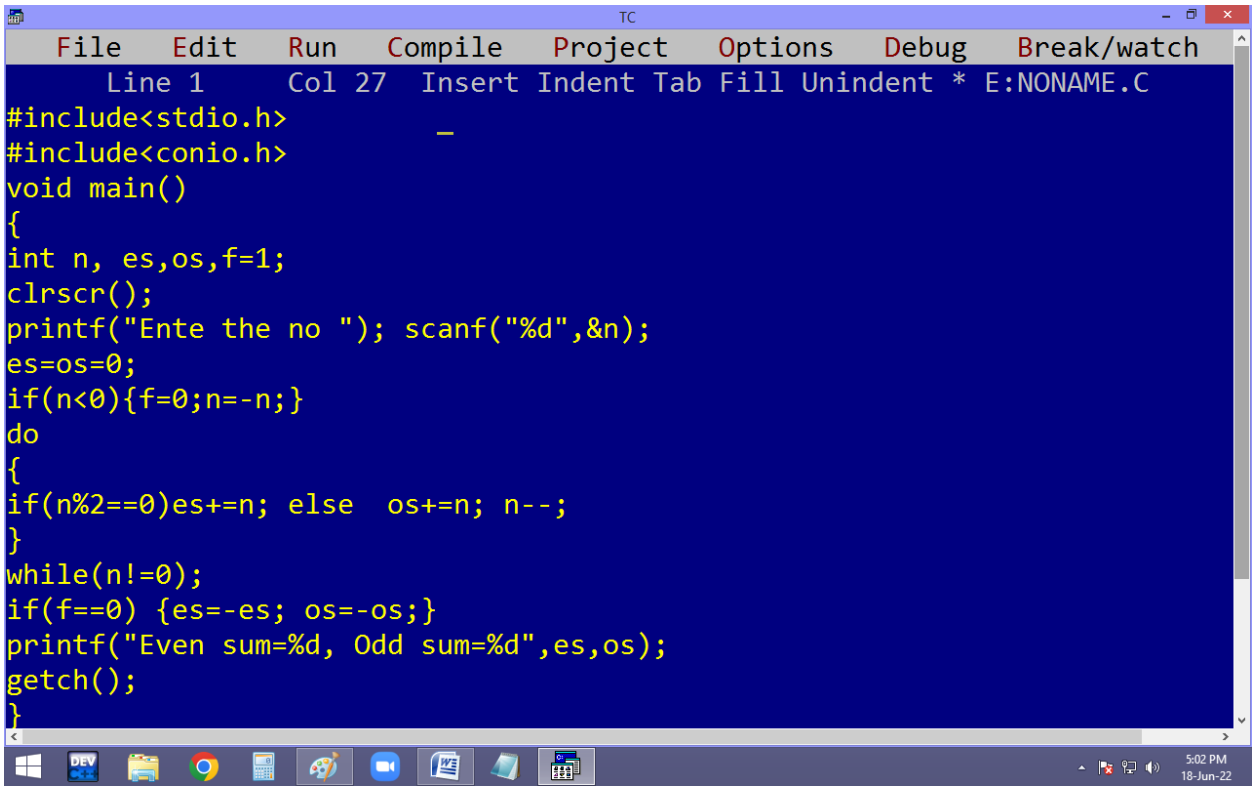
```
#include<stdio.h>
#include<conio.h>
void main()
{
int n, es,os;
clrscr();
printf("Ente the no "); scanf("%d",&n);
es=os=0;
while(n>=1)
{
if(n%2==0)es+=n; else  os+=n; n--;
}
printf("Even sum=%d, Odd sum=%d",es,os);
getch();
}
```

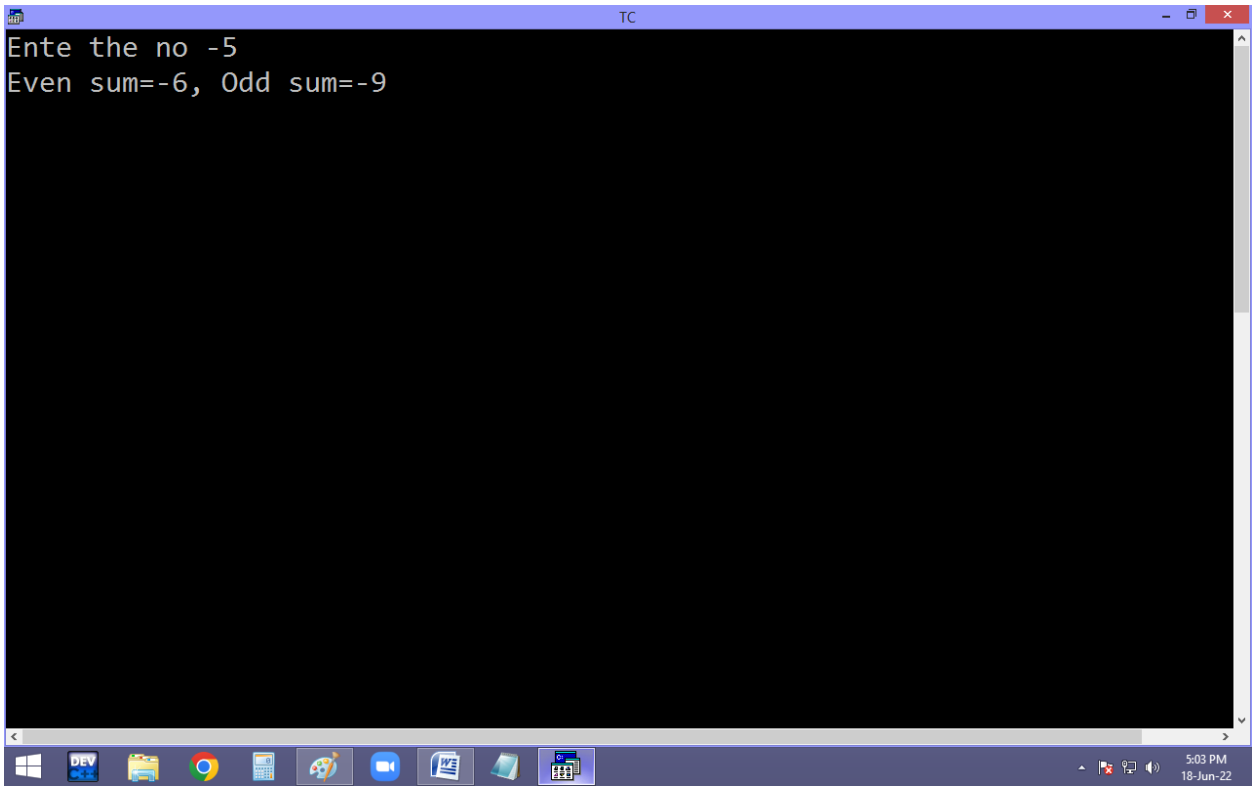
4:52 PM
18-Jun-22





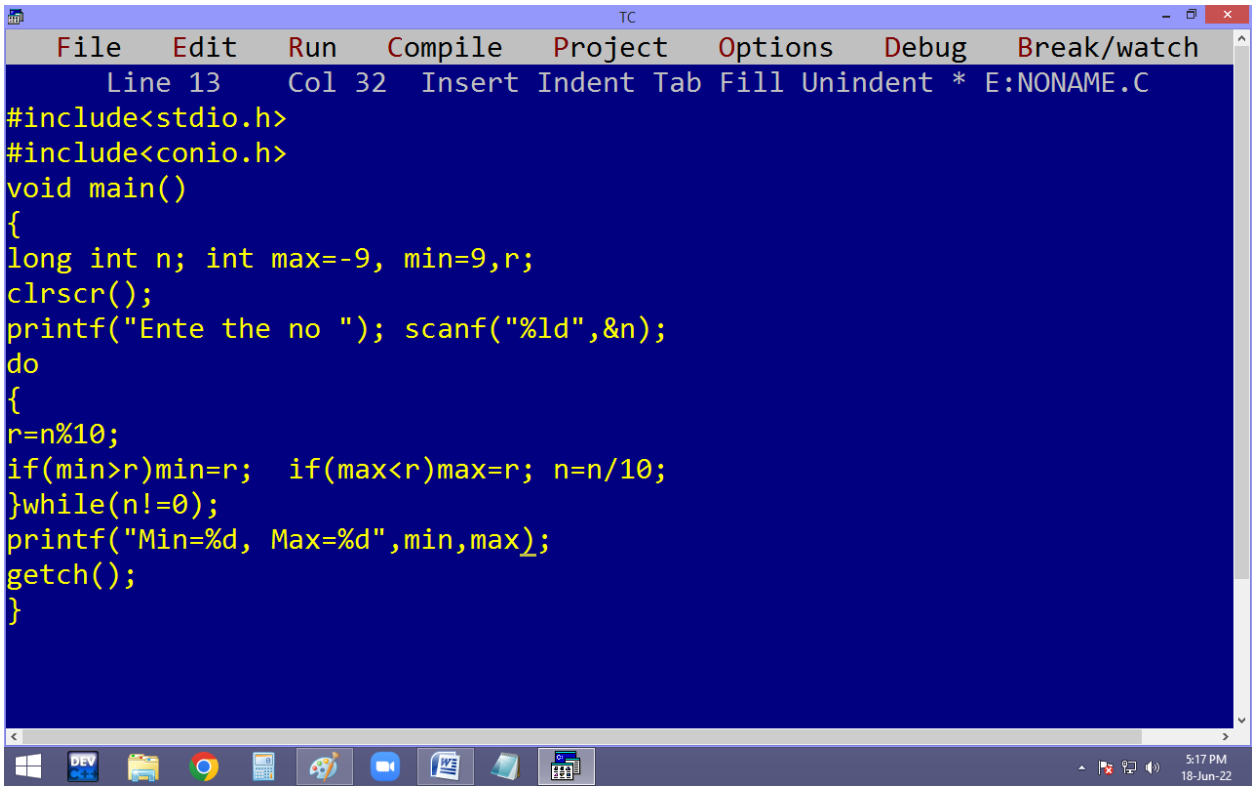
For both +Ve & -Ve no's:

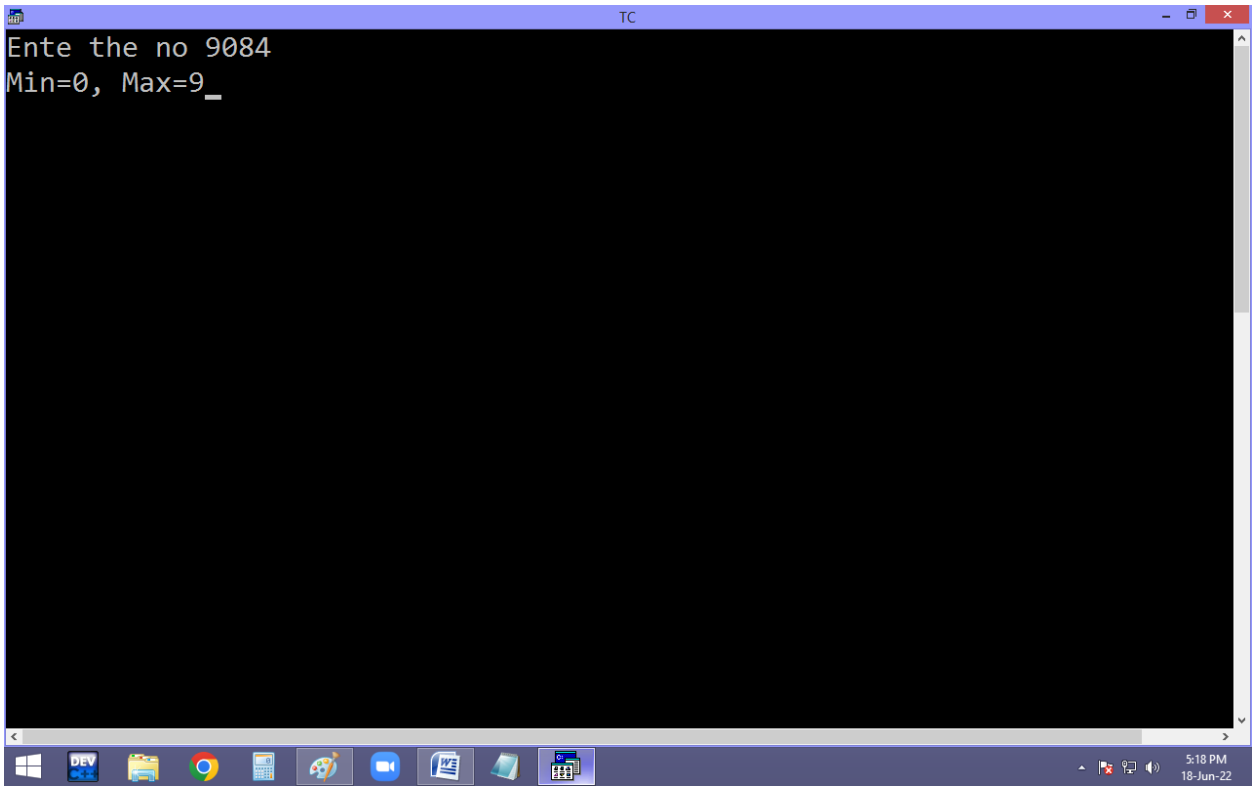

TC
File Edit Run Compile Project Options Debug Break/watch
Line 1 Col 27 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n, es,os,f=1;
clrscr();
printf("Ente the no "); scanf("%d",&n);
es=os=0;
if(n<0){f=0;n=-n;}
do
{
if(n%2==0)es+=n; else os+=n; n--;
}
while(n!=0);
if(f==0) {es=-es; os=-os;}
printf("Even sum=%d, Odd sum=%d",es,os);
getch();
}
5:02 PM
18-Jun-22

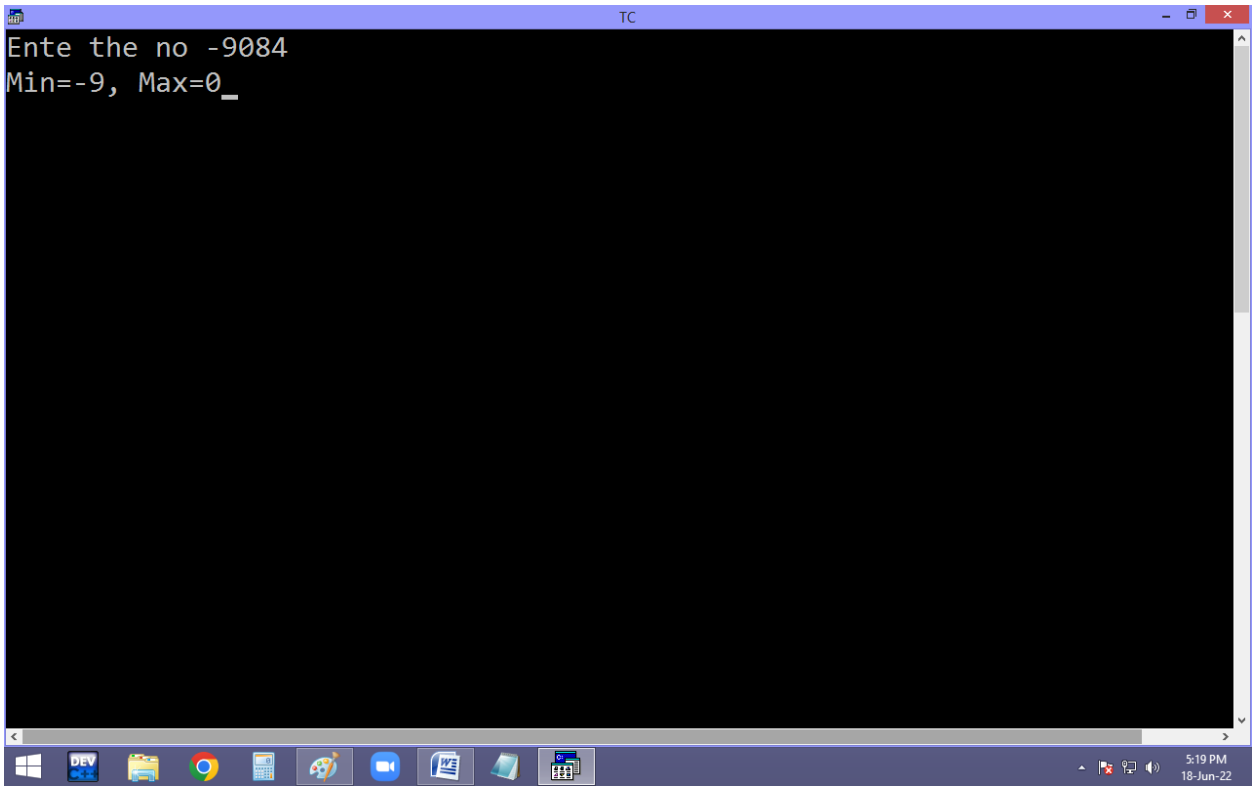

TC
Ente the no -5
Even sum=-6, Odd sum=-9
5:03 PM
18-Jun-22

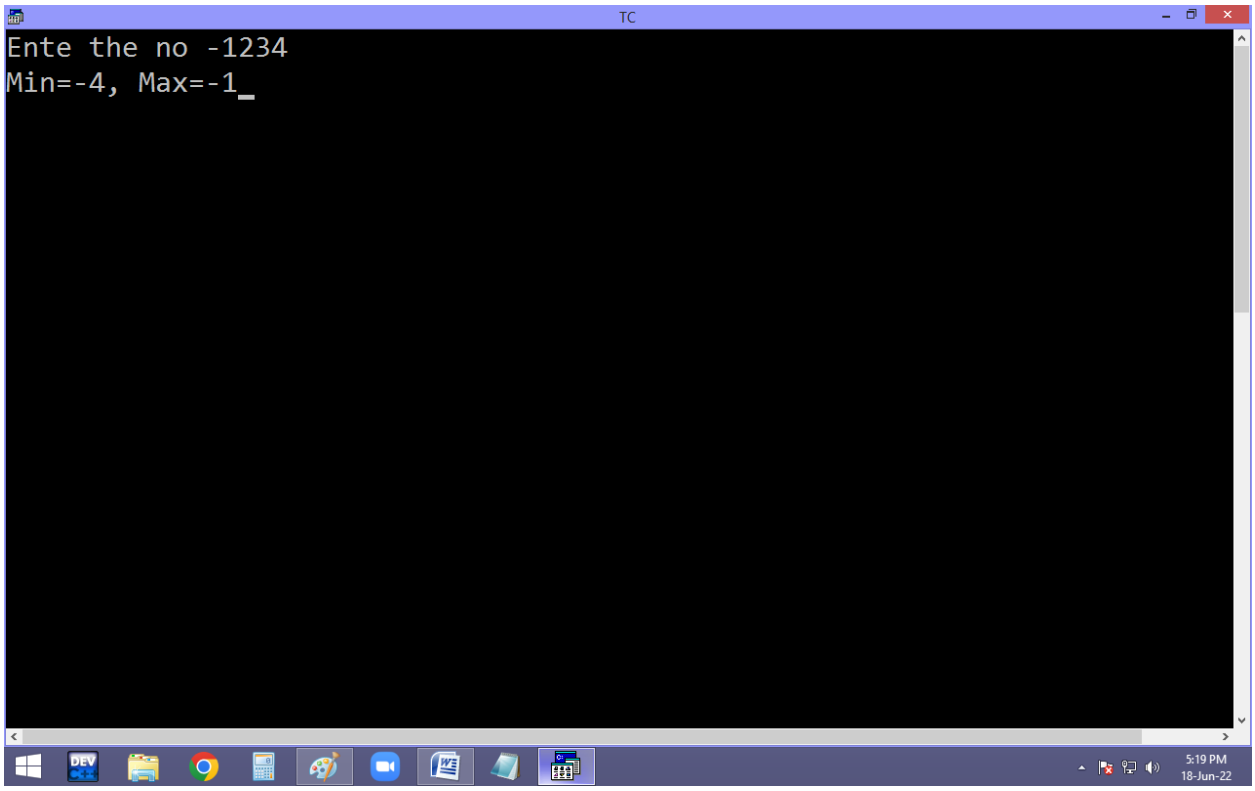
Eg. finding max, min digits in given no.

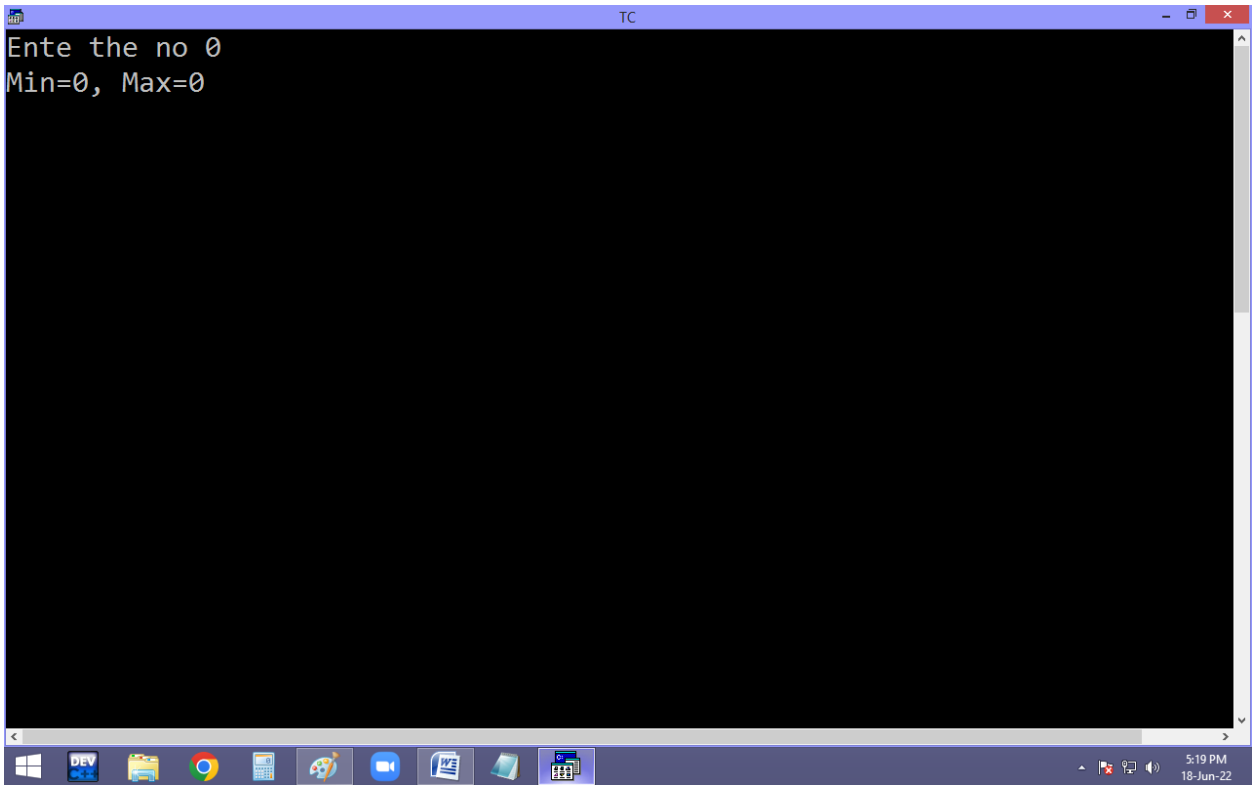
For example 9083 ➔ 0 is min, 9 is max




TC
Ente the no 9084
Min=0, Max=9
5:18 PM
18-Jun-22


TC
Ente the no -9084
Min=-9, Max=0
5:19 PM
18-Jun-22


TC
Ente the no -1234
Min=-4, Max=-1
5:19 PM
18-Jun-22




```
do
{
r=n%10;
if(min>r)min=r;
if(max<r)max=r;
n=n/10;
}while(n!=0);
p(min, max);
```

n | r | max | min

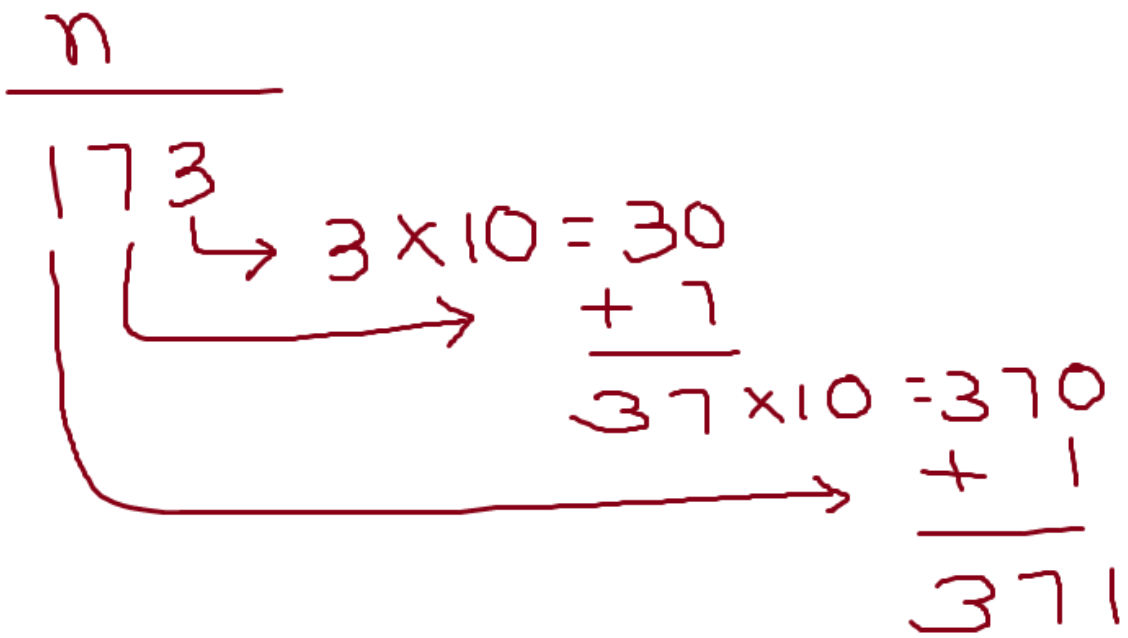
9083 | 3 | -9 < 3 | 9 > 3

908 | 8 | 3 < 8 | 3 > 8

90 | 0 | 8 < 0 | 3 > 0

9 | 9 | 8 < 9 | 0 > 9

Reverse no.



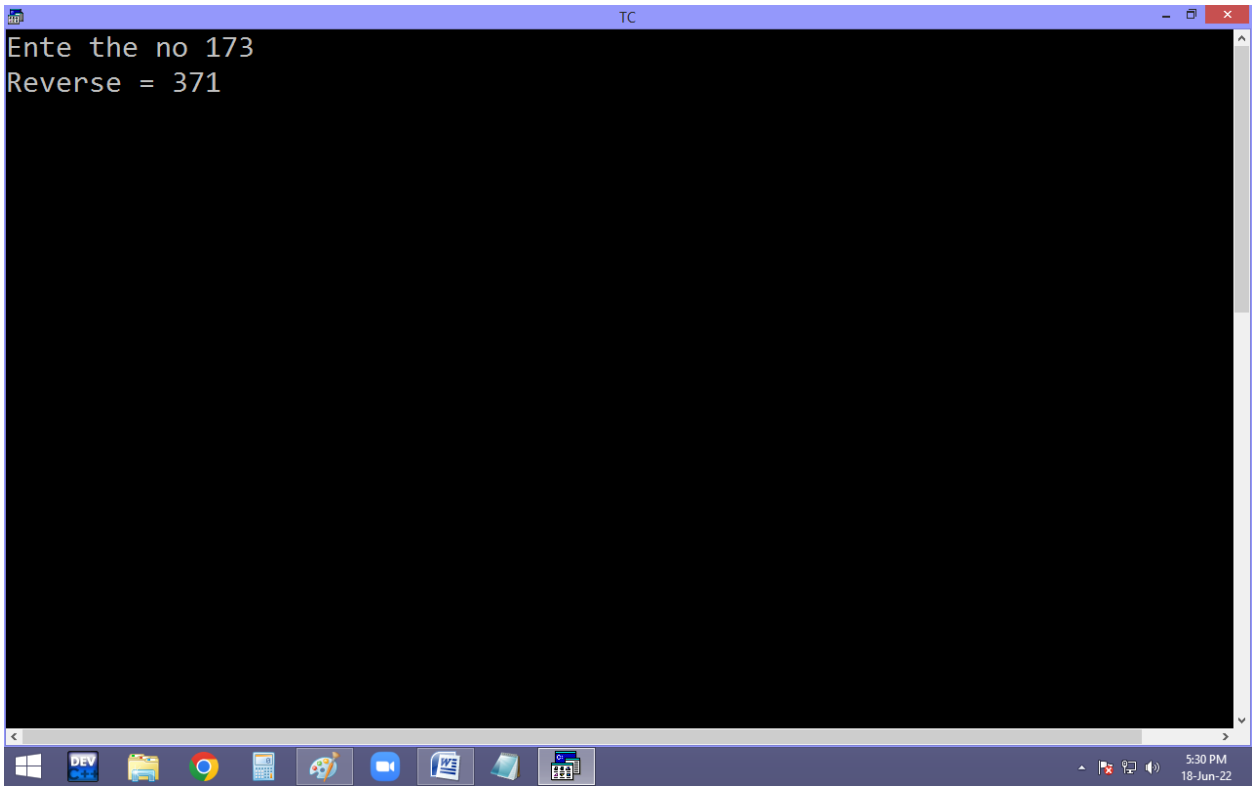
TC

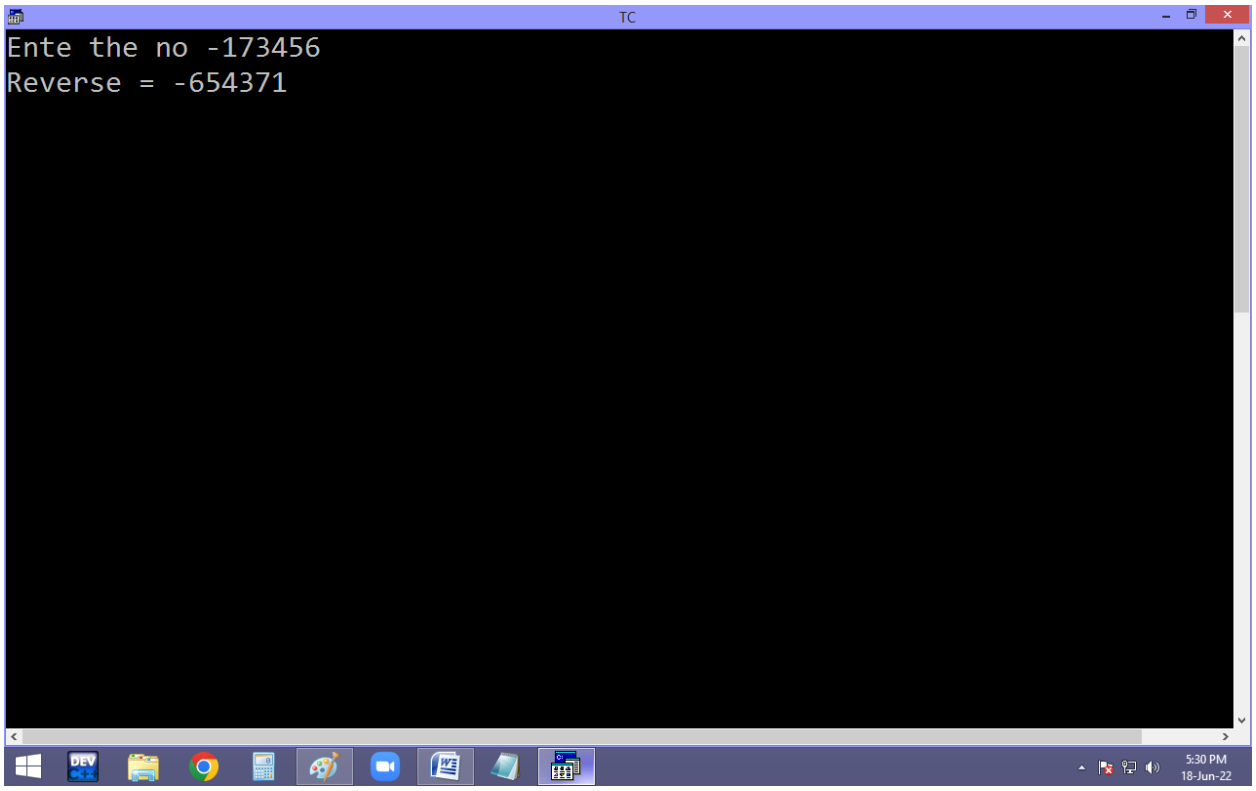
File Edit Run Compile Project Options Debug Break/watch

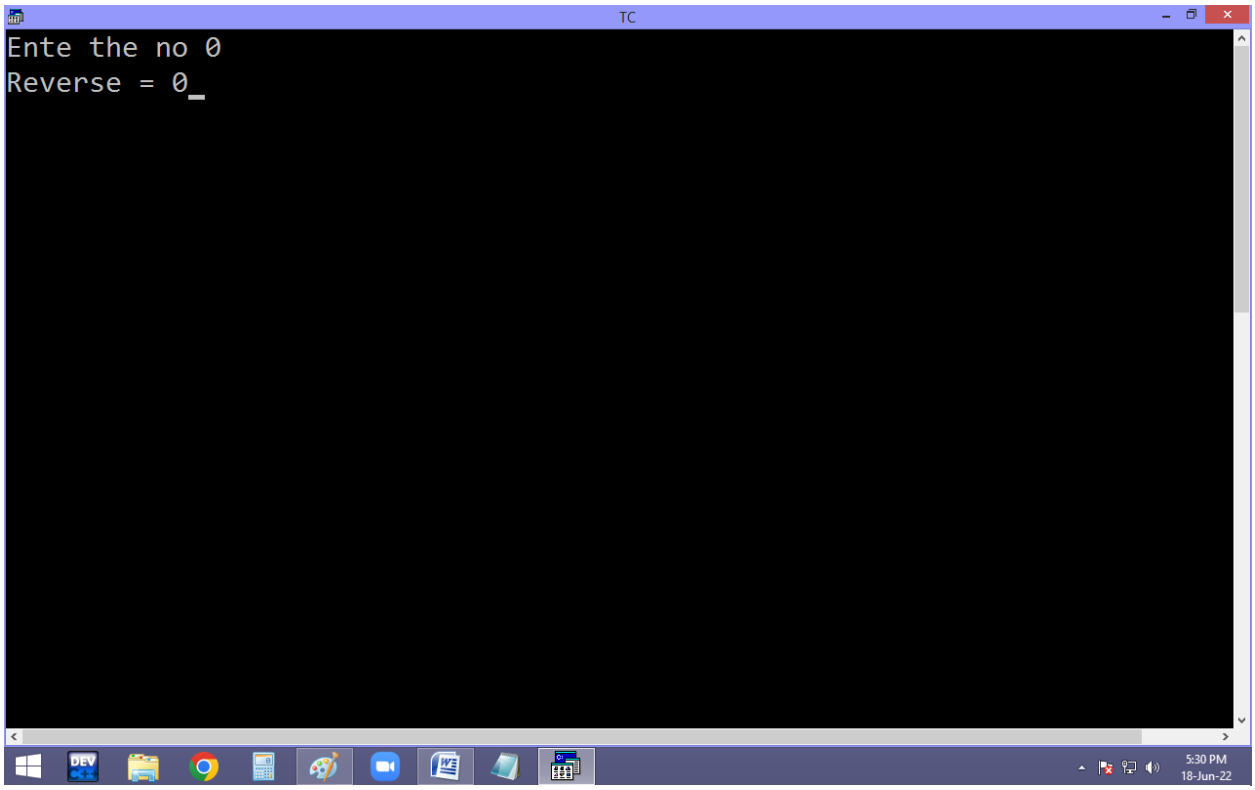
Line 12 Col 29 Indent Tab Fill Unindent * E:NONAME.C

```
#include<stdio.h>
#include<conio.h>
void main()
{
long int n, rev=0; int r;
clrscr();
printf("Ente the no "); scanf("%ld",&n);
while(n!=0)
{
r=n%10;  rev=rev*10+r; n=n/10;
}
printf("Reverse = %ld",rev);_
getch();
}
```

5:30 PM
18-Jun-22


TC
Ente the no 173
Reverse = 371
5:30 PM
18-Jun-22


TC
Ente the no -173456
Reverse = -654371
5:30 PM
18-Jun-22



n | r

173 % 10 = 3

17 % 10 = 7

1 % 10 = 1

0

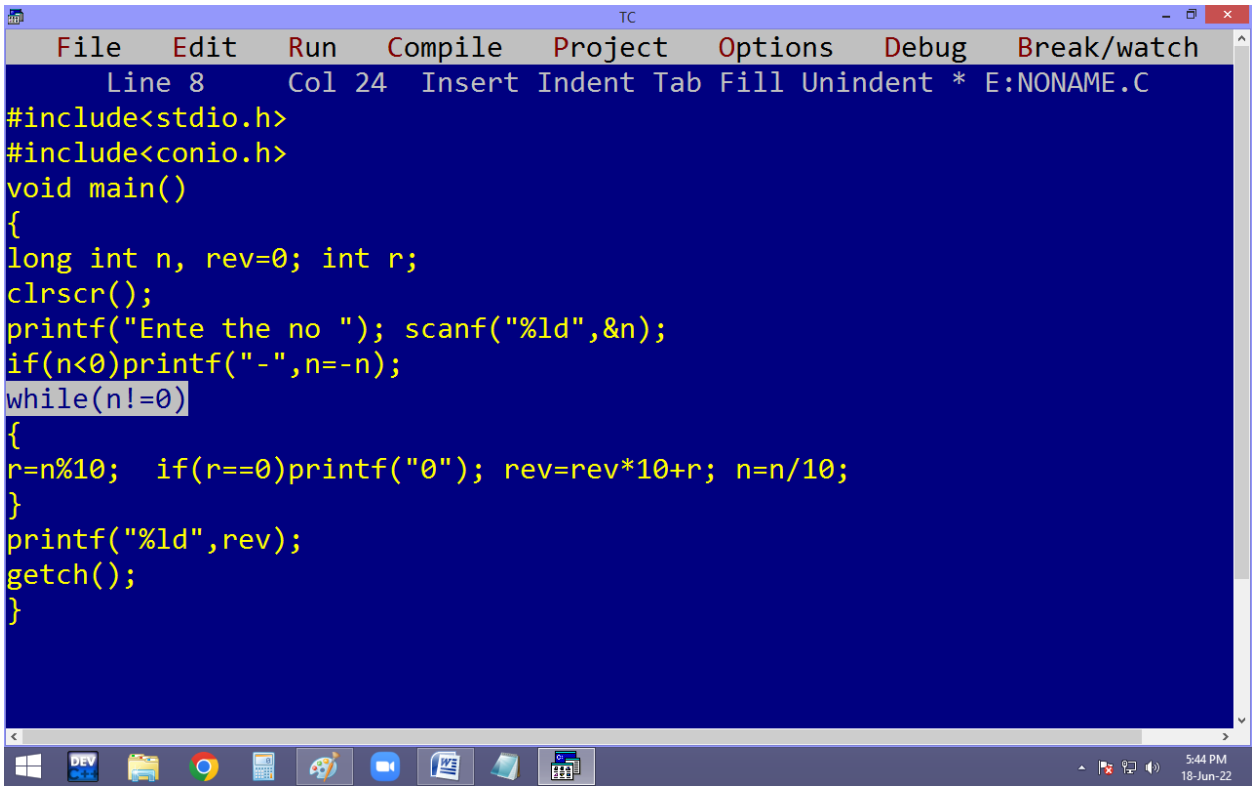
rev

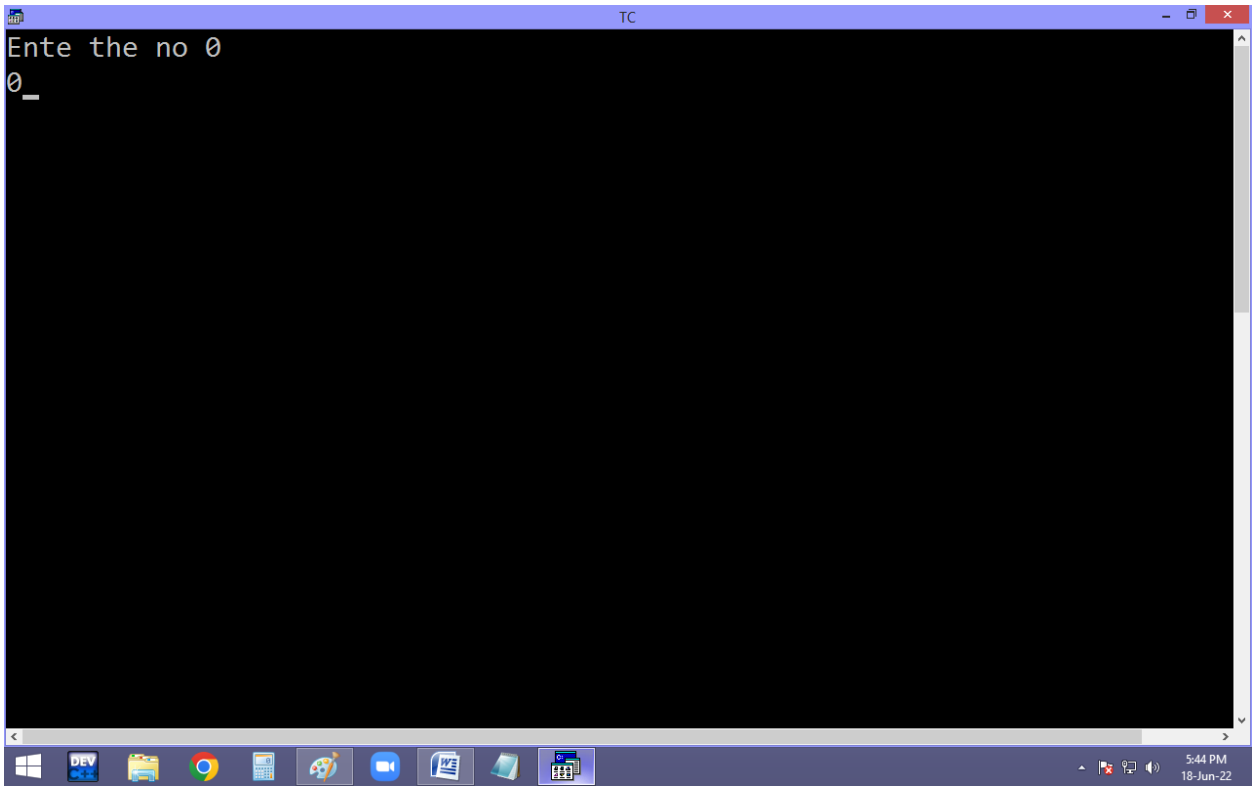
0 x 10 + 3 = 3

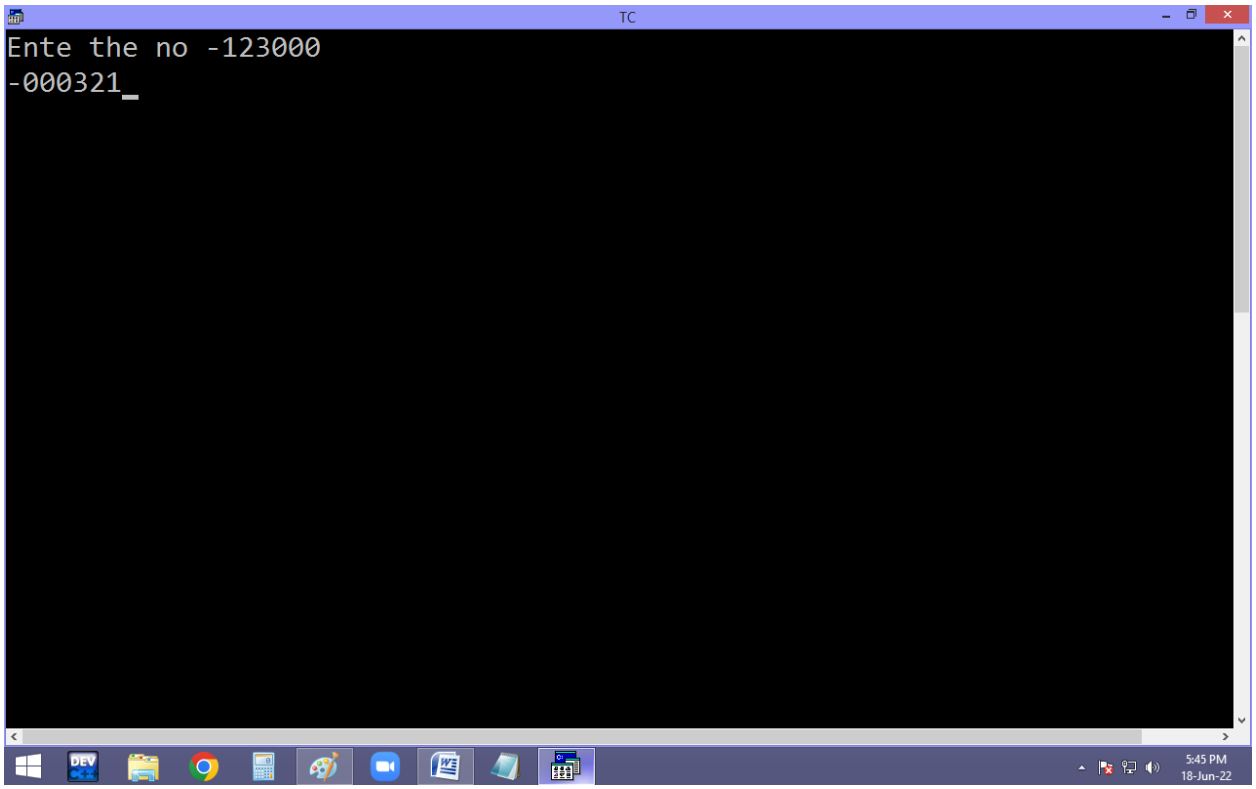
3 x 10 + 7 = 37

37 x 10 + 1 = 371

```
while(n!=0)
{
r=n%10;
rev=rev*10+r;
n=n/10;
}
p( rev );
```


TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 24 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
long int n, rev=0; int r;
clrscr();
printf("Ente the no "); scanf("%ld",&n);
if(n<0)printf("-",n=-n);
while(n!=0)
{
r=n%10; if(r==0)printf("0"); rev=rev*10+r; n=n/10;
}
printf("%ld",rev);
getch();
}
5:44 PM
18-Jun-22


TC
Ente the no 0
0
5:44 PM
18-Jun-22



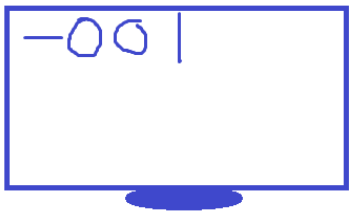

```
if(n<0)p("-",n=-n);

if(r==0)p(0);
```

n

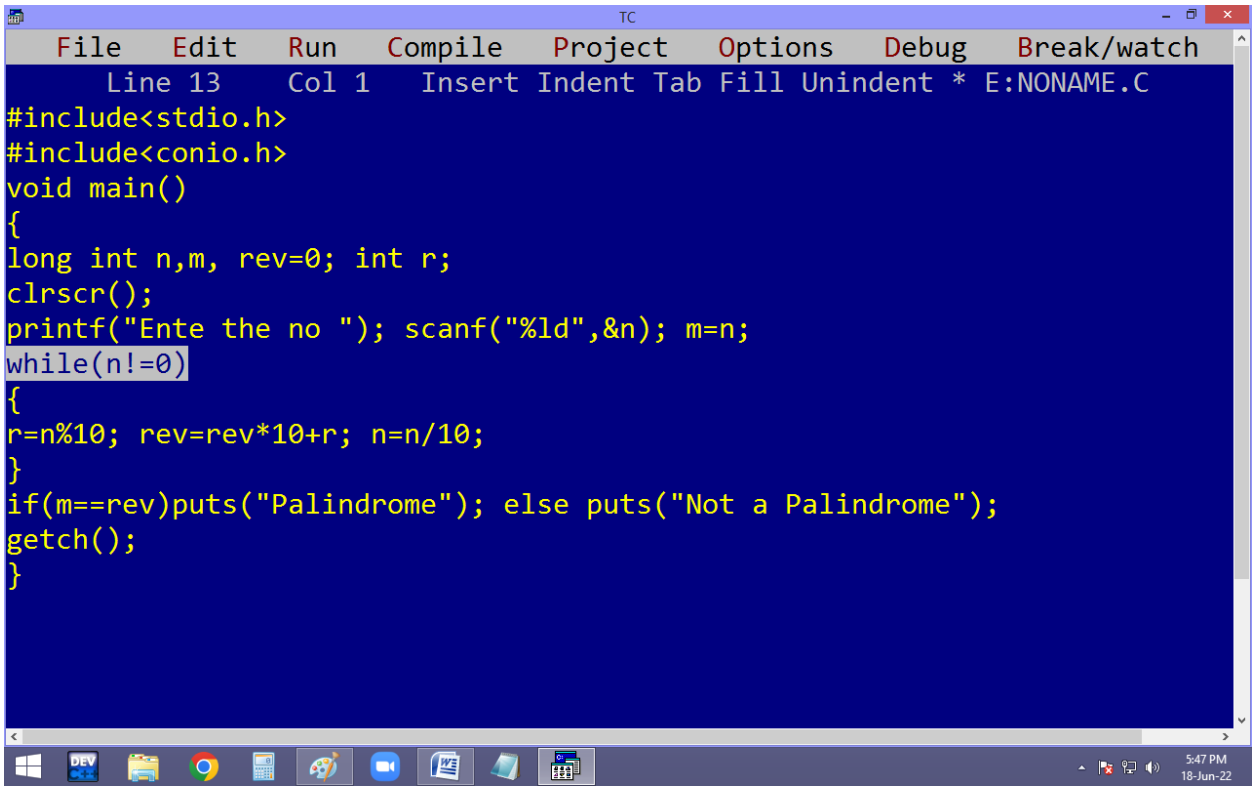
+100 %10 = 0

10 %10 = 0

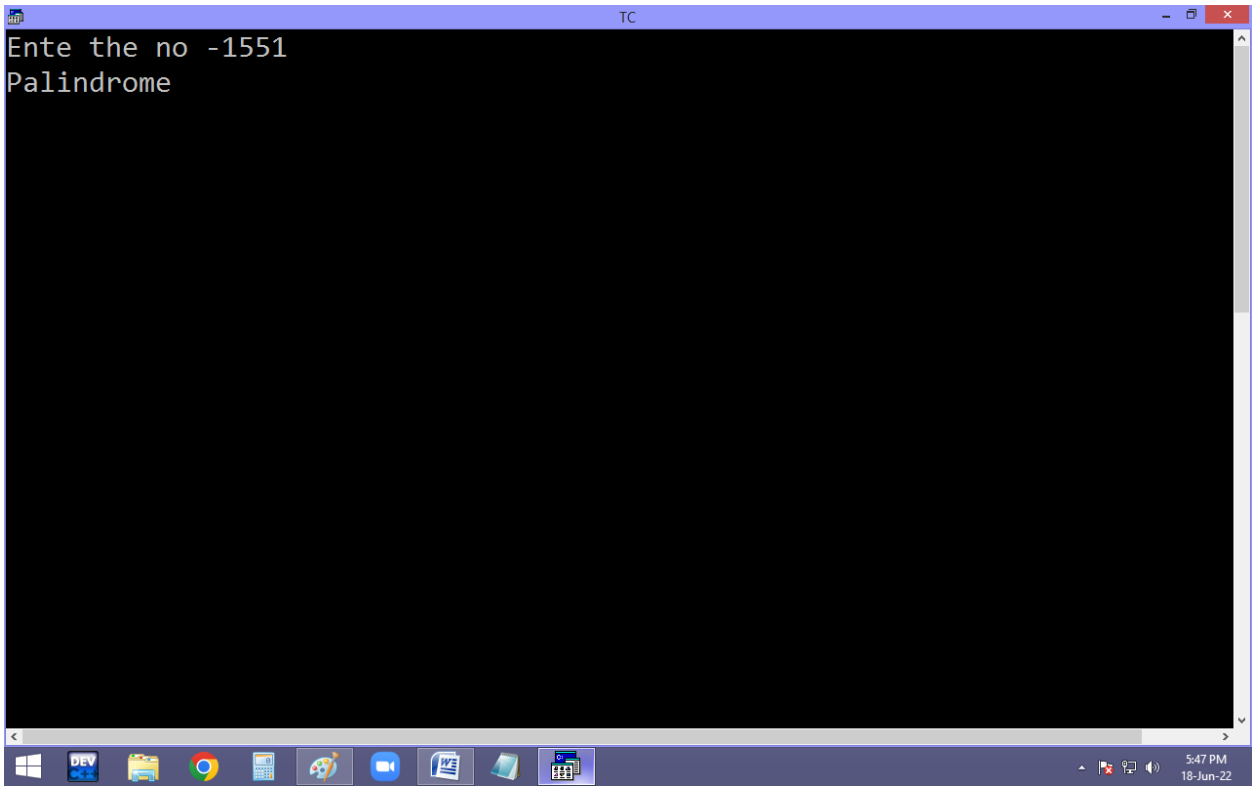


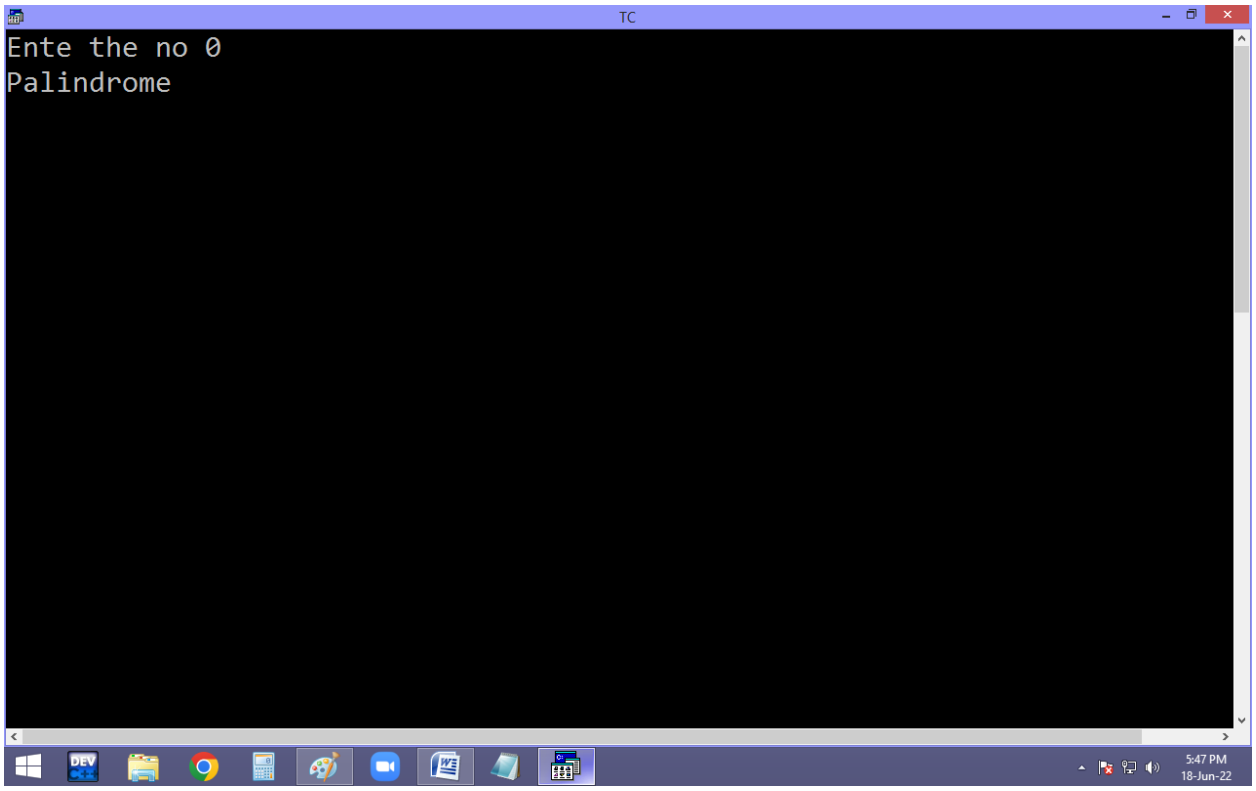
Eg. Finding palindrome

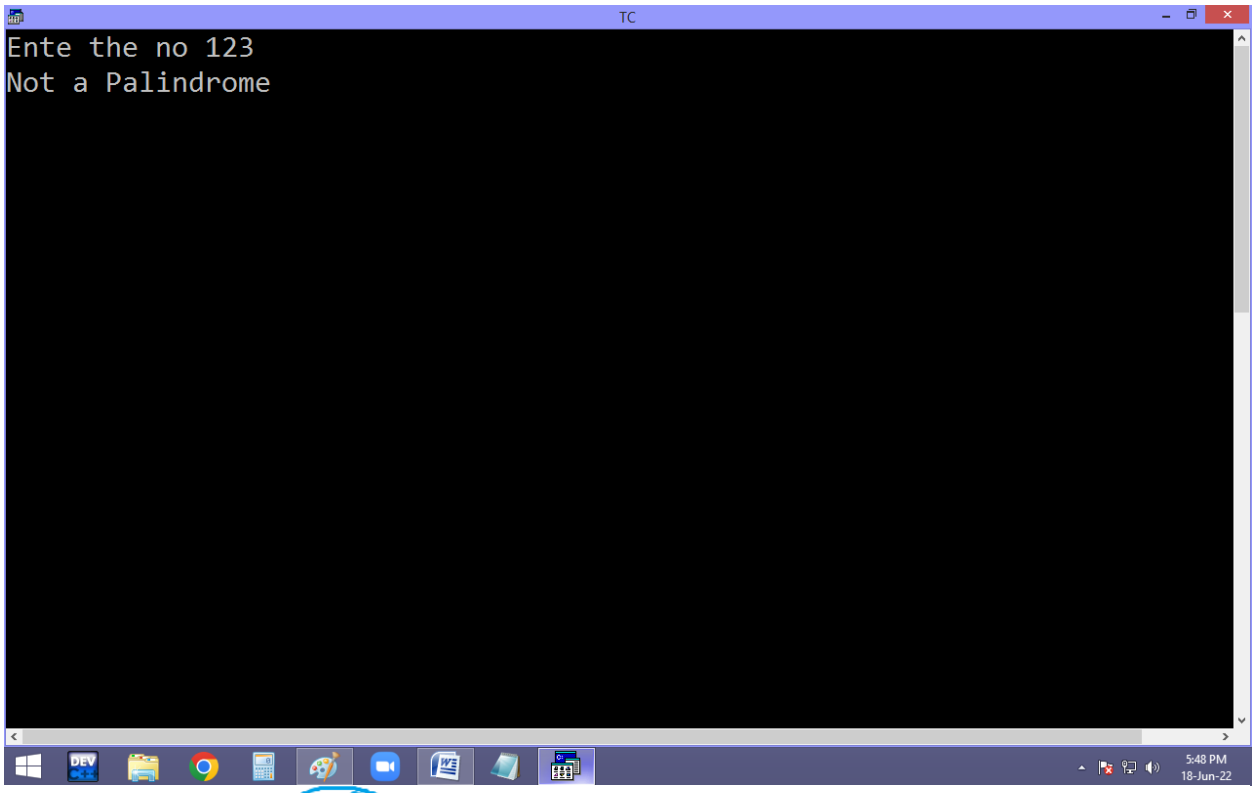
Given no and reverse no same → 121 rev 121

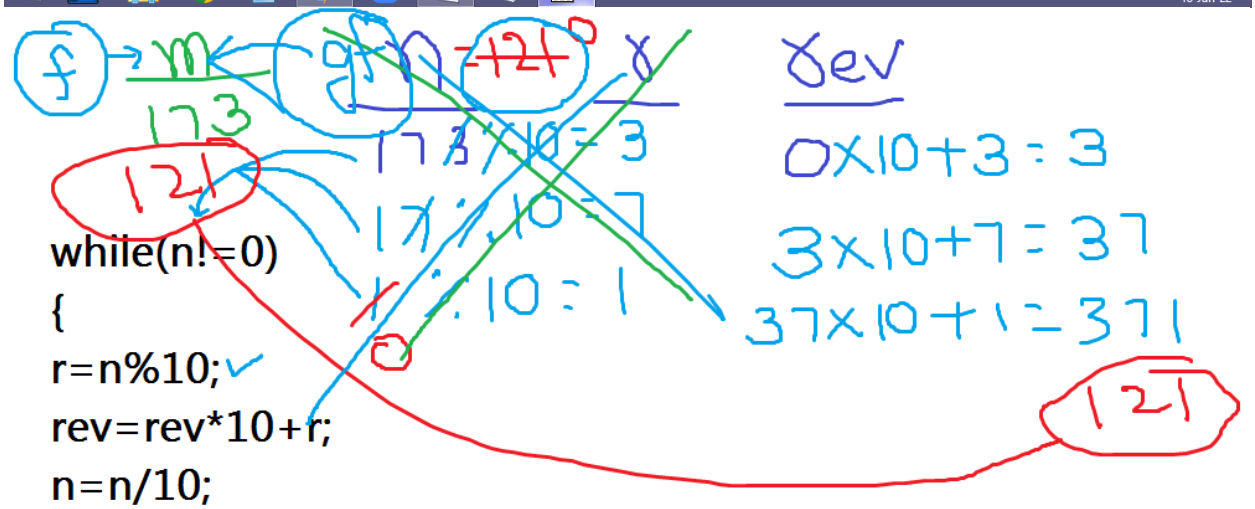

TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 1 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
long int n,m, rev=0; int r;
clrscr();
printf("Ente the no "); scanf("%ld",&n); m=n;
while(n!=0)
{
r=n%10; rev=rev*10+r; n=n/10;
}
if(m==rev)puts("Palindrome"); else puts("Not a Palindrome");
getch();
}
5:47 PM
18-Jun-22


TC
Ente the no 121
Palindrome
5:47 PM
18-Jun-22


TC
Ente the no -1551
Palindrome
5:47 PM
18-Jun-22


TC
Ente the no 0
Palindrome
5:47 PM
18-Jun-22


TC
Ente the no 123
Not a Palindrome
5:48 PM
18-Jun-22


f
n
173
121
while(n!=0)
{
r=n%10;
rev=rev*10+r;
n=n/10;
}
p(rev);
rev
0x10+3=3
3x10+7=37
37x10+1=371
121