

**Read a stu id, name, 6 sub marks. Find the stu total, avg and grade based on the below table.**

<b>Avg</b>	<b>Grade</b>
>=75	Distinction
>=60	1 <sup>st</sup> class
>=50	2 <sup>nd</sup> class
>=35	3 <sup>rd</sup> class
<35	Fail

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
#include<string.h>
```

```
void main()
```

```
{
```

```
int id, tel, eng, hin, mat, sci, soc, tot;
```

```
char name[30], grade[20];
```

```
float avg;
```

```
clrscr();
```

```
printf("Enter stu id, name, 6 sub marks ");
```

```
scanf("%d %s
```

```
%d%d%d%d%d%d",&id,name,&tel,&eng,&hin,&mat,&sci,&soc)
```

```
;
```

```
tot=tel+eng+hin+mat+sci+soc;

avg=tot/6.0;

if(tel>=35&&eng>=35&&hin>=35&&mat>=35&&sci>=35&&soc
>=35)

{

if(avg>=75)strcpy(grade,"DISTINCTION");
else if(avg>=60) strcpy(grade,"1st Class");
else if(avg>=50) strcpy(grade,"2nd Class");
else strcpy(grade,"3rd Class");

}

else strcpy(grade,"Fail");

puts("Id\tName\tTot\tAvg\tGrade");

puts("-----");

printf("%d\t%s\t%d\t%.2f\t%s",id,name,tot,avg,grade);

getch();
```

}

```
TC
Enter stu id, name, 6 sub marks 3 chintu 44 45 35 36 43 39
Id      Name      Tot      Avg      Grade
-----
3       chintu    242     40.33    3rd Class
```

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```
TC
Enter stu id, name, 6 sub marks 1 krish 99 90 89 98 89 90
Id      Name      Tot      Avg      Grade
-----
1      krish      555      92.50    DISTINCTION_

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TC
Enter stu id, name, 6 sub marks 3 pandu 66 76 56 88 65 34
Id      Name      Tot      Avg      Grade
-----
3      pandu      385      64.17    Fail_

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```

**Without using strcpy():**

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
#include<string.h>

void main()

{

int id, tel, eng, hin, mat, sci, soc, tot;

char name[30];

float avg;

clrscr();

printf("Enter stu id, name, 6 sub marks ");

scanf("%d %s
%d%d%d%d%d%d",&id,name,&tel,&eng,&hin,&mat,&sci,&soc)
;

tot=tel+eng+hin+mat+sci+soc;

avg=tot/6.0;

puts("Id\tName\tTot\tAvg\tGrade");

puts("-----");

printf("%d\t%s\t%d\t%.2f\t",id,name,tot,avg);

if(tel>=35&&eng>=35&&hin>=35&&mat>=35&&sci>=35&&soc
>=35)

{
```

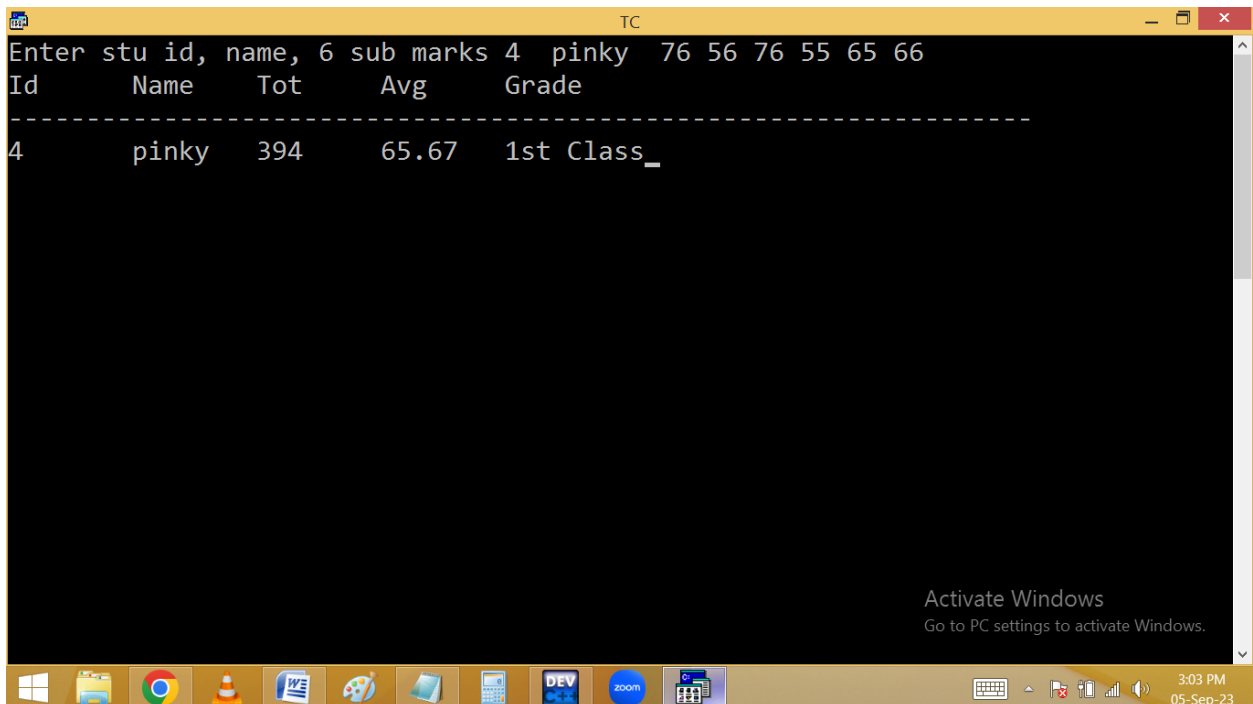
```

if(avg>=75)printf("DISTINCTION");
else if(avg>=60) printf("1st Class");
else if(avg>=50) printf("2nd Class");
else printf("3rd Class");
}

else printf("Fail");

getch();
}

```



TC

```

Enter stu id, name, 6 sub marks 4 pinky 76 56 76 55 65 66
Id      Name      Tot      Avg      Grade
-----
4       pinky     394     65.67   1st Class_

```

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**Ternary / Conditional operator( ? : )**

It is similar to if else / ladder if in working style.

It allows to complete if else / ladder if in a single statement.

When we are working with if else/ladder if it is going to take more than one line of statements. Ternary operator is going to finish the same task in a single statement.

**But the difference between if ...else and ternary operator is ternary operator supports only one statement at a time and if supports any number of statements.**

It is having 3 expressions. Hence it is called ternary operator.

It is starting with a condition. Hence it is called conditional operator.

## Syntax:

condition ? true statement : false statement ;  
          ↑                                  ↑                                  ↑  
exp1/op1      exp2/op2      exp3/op3

If condition true, statement after ? executed.

If condition false, statement after : is executed.

When compared with if else, conditional operator **performance is high**.

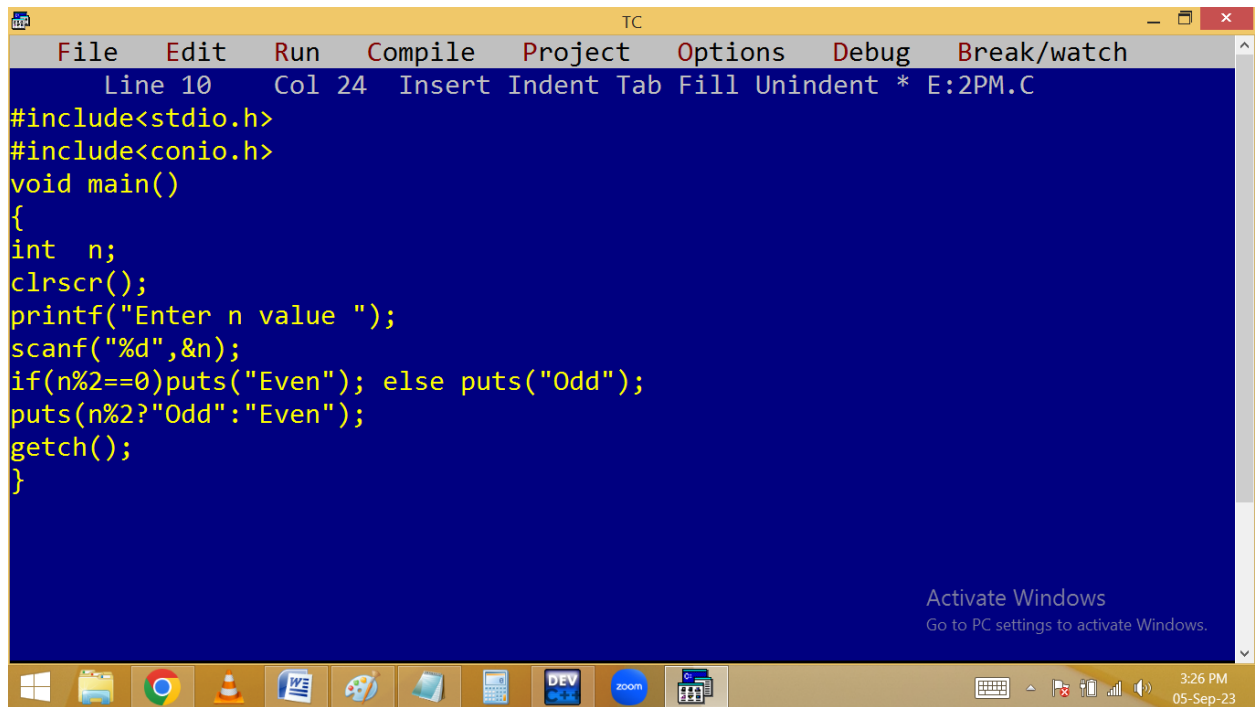
**Eg:** Finding big in two no's using ternary operator.



```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a, b values ");
scanf("%d %d",&a, &b);
if(a>b)puts("a is big"); else puts("b is big");
puts(a>b?"a is big":"b is big");
printf("%d is big\n",a>b?a:b);
a>b?puts("a is big"): puts("b is big");
puts(a>b?"a is big" : b>a ?"b is big" : "Both are equal");
getch();
}
```

```
Enter a, b values 3 3
b is big
b is big
3 is big
b is big
Both are equal
```

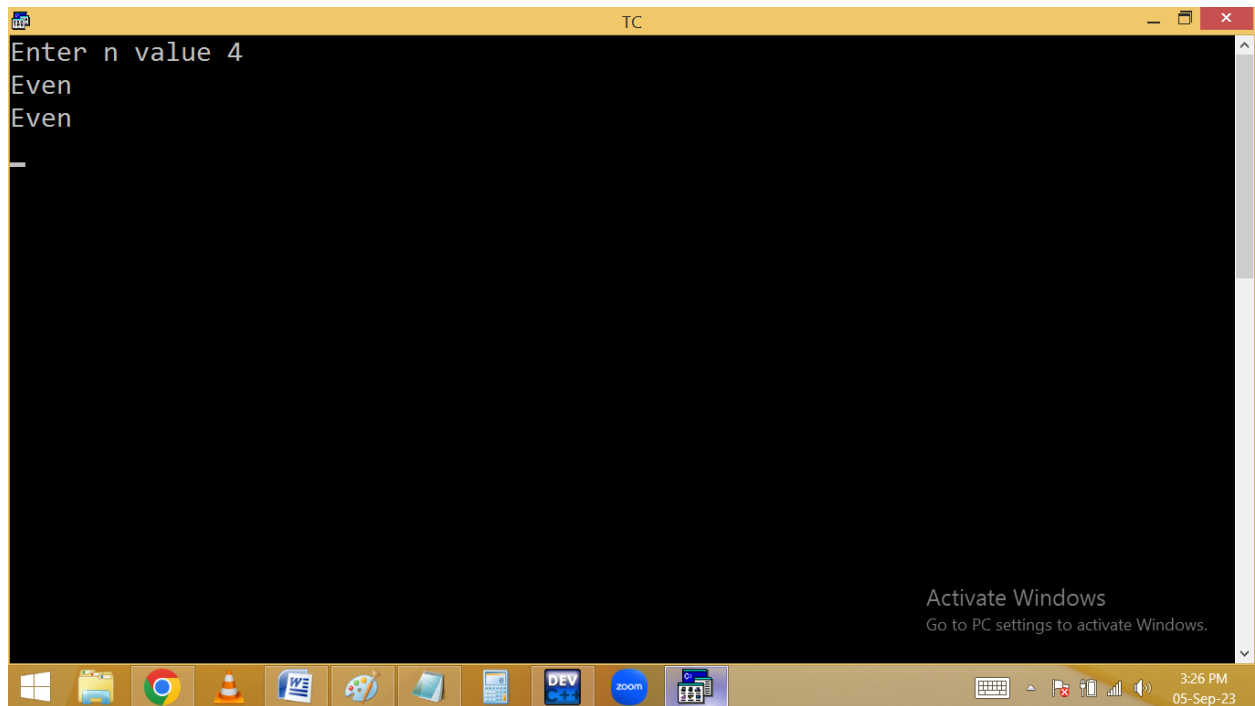
**Finding even / odd using ternary operator?**



The screenshot shows the Turbo C++ (TC) IDE with a yellow title bar and a menu bar containing File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 10 Col 24 Insert Indent Tab Fill Unindent \* E:2PM.C'. The main editing area has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int n;
    clrscr();
    printf("Enter n value ");
    scanf("%d",&n);
    if(n%2==0)puts("Even"); else puts("Odd");
    puts(n%2?"Odd":"Even");
    getch();
}
```

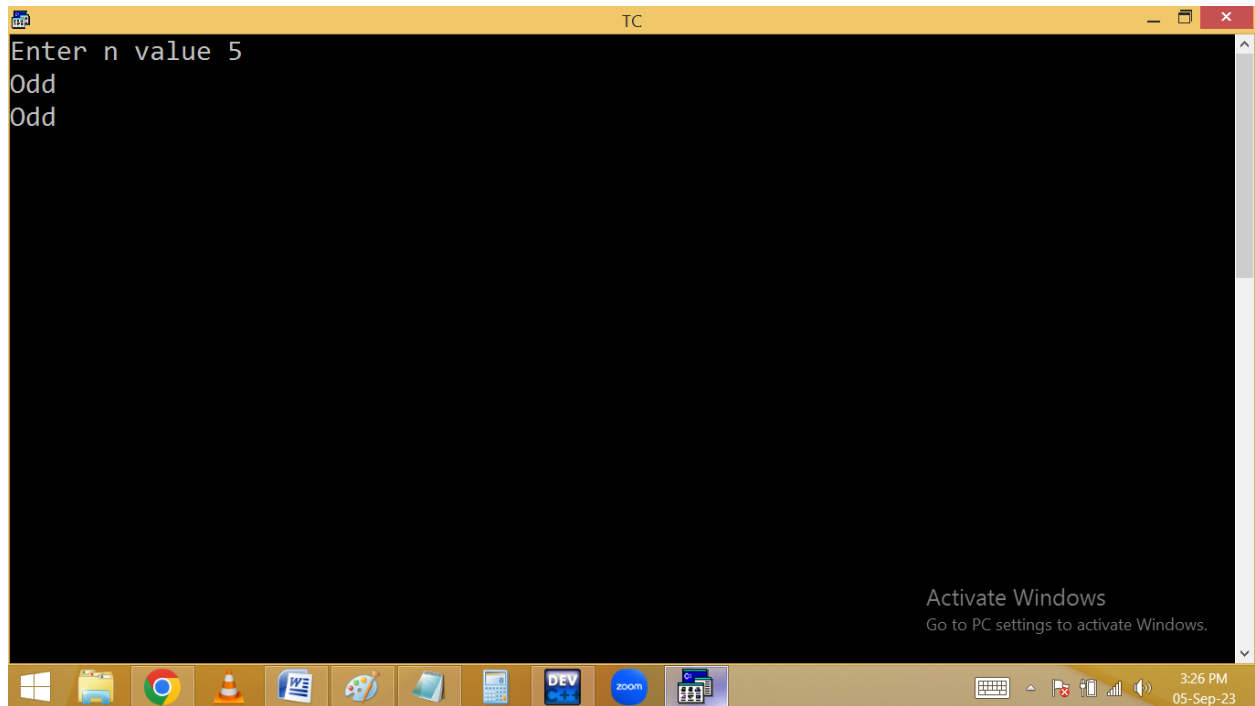
An 'Activate Windows' watermark is visible in the bottom right corner of the editing area. The Windows taskbar at the bottom shows various application icons and the system clock displaying 3:26 PM on 05-Sep-23.



This screenshot shows the same Turbo C++ IDE after the program has been executed. The output window, which is black, displays the following text:

```
Enter n value 4
Even
Even
```

The 'Activate Windows' watermark is also present in the bottom right corner of the output area. The Windows taskbar at the bottom remains the same, showing the system clock at 3:26 PM on 05-Sep-23.

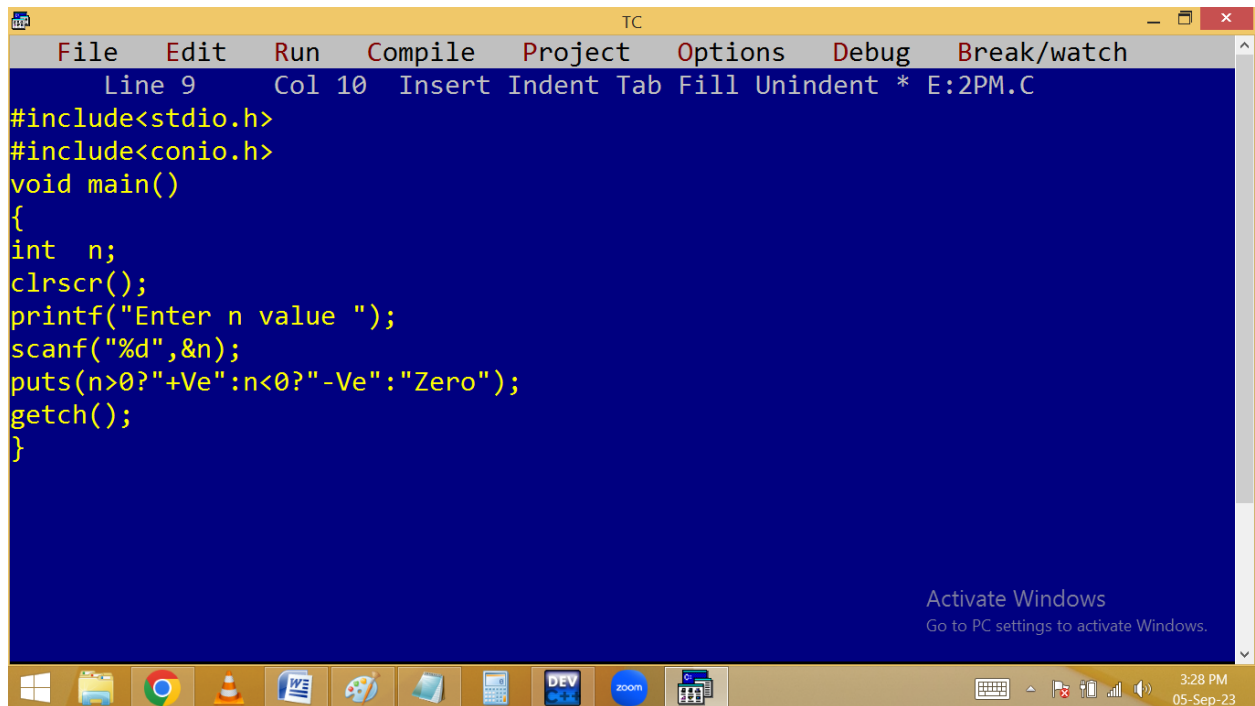


```
Enter n value 5
Odd
Odd
```

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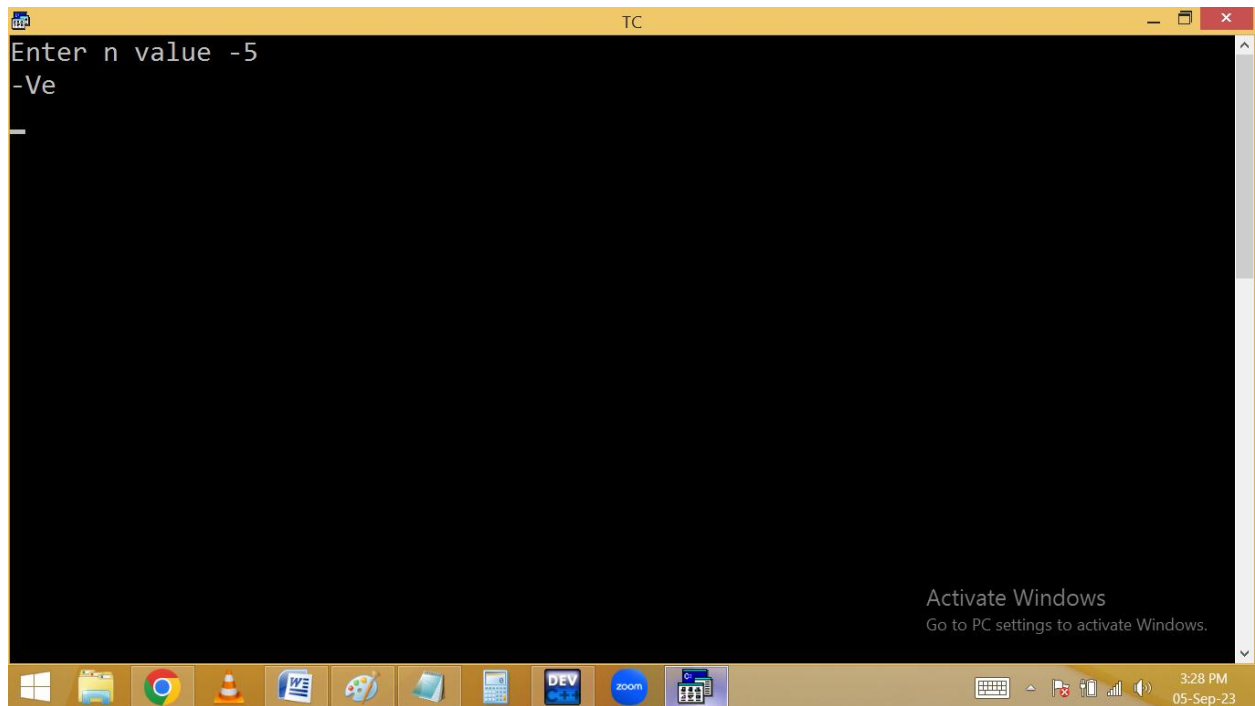
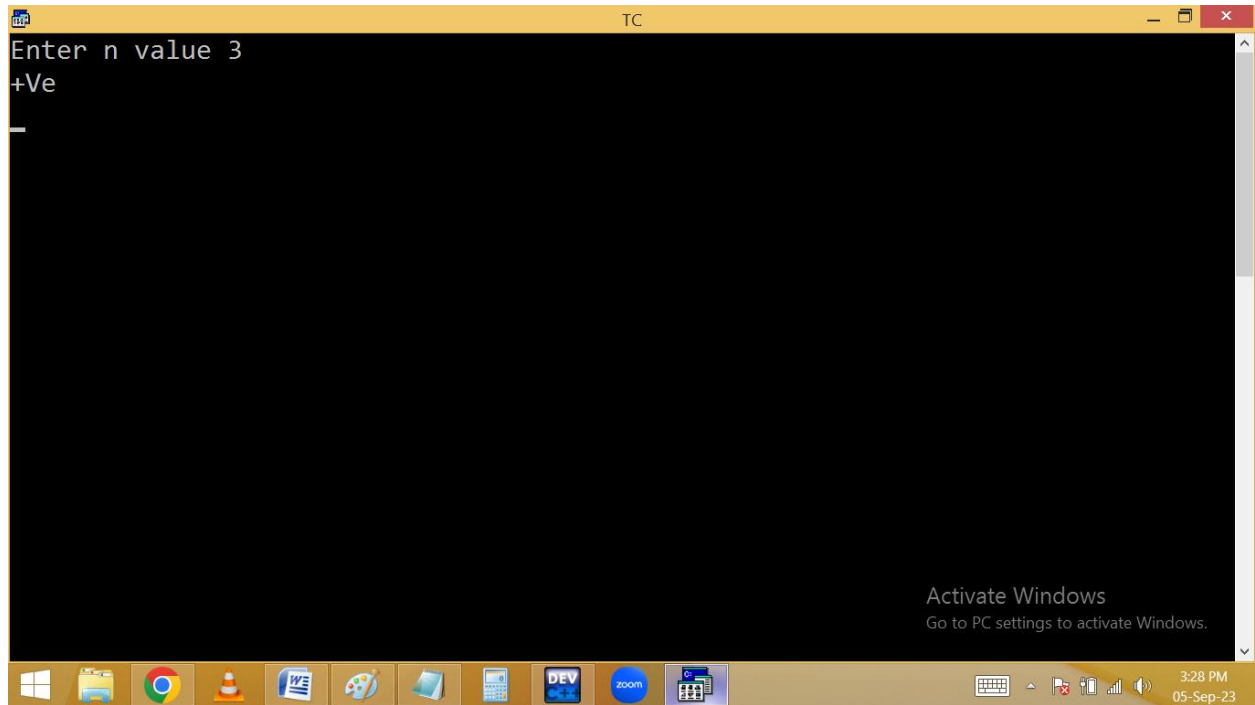
## Finding +Ve/-Ve/0 using ternary operator:

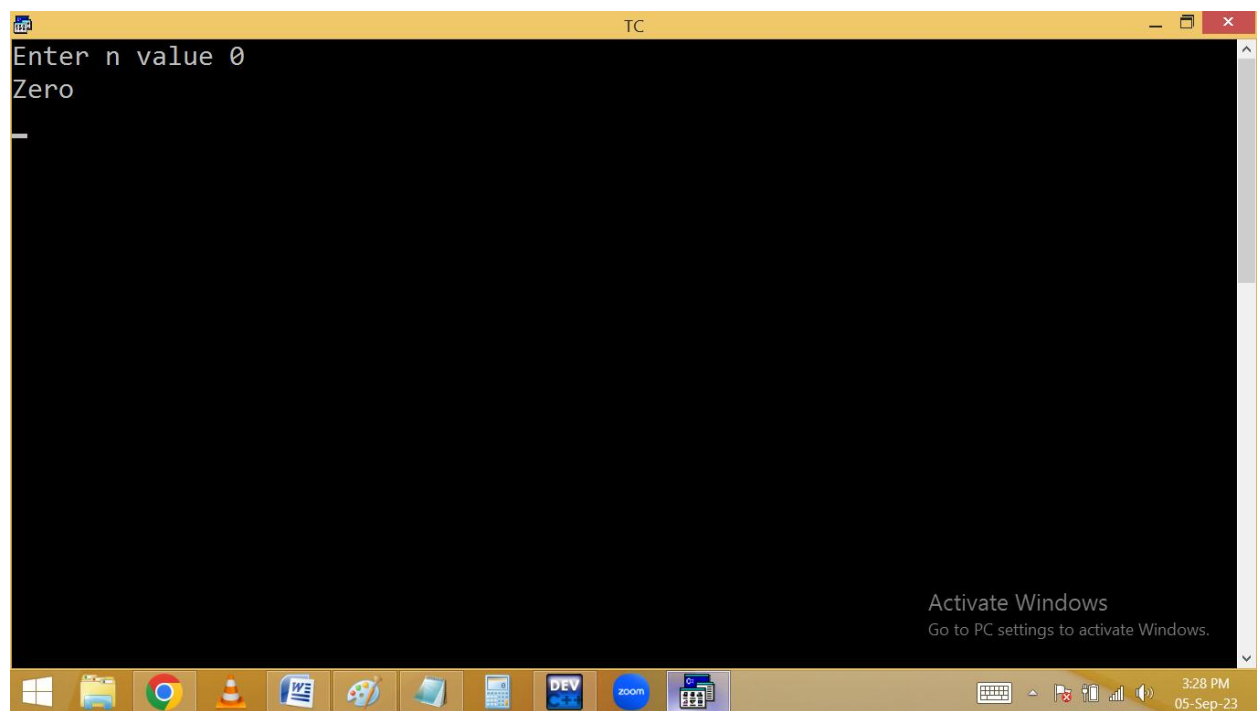


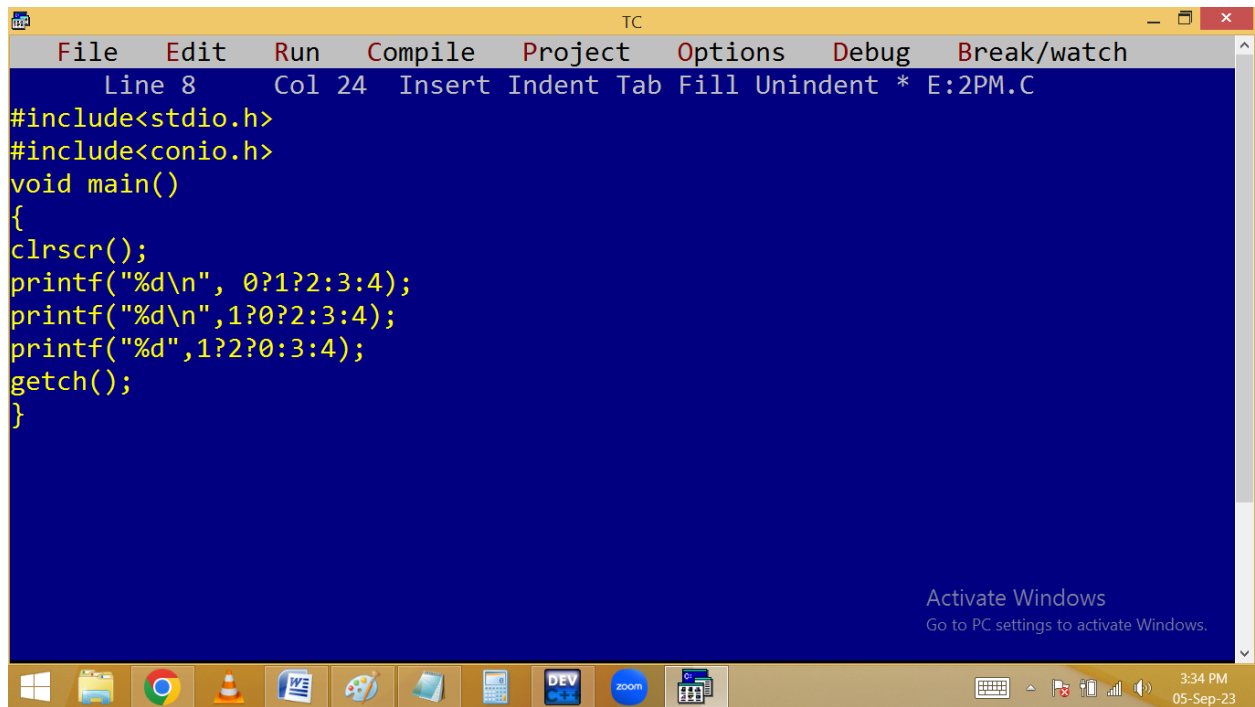
```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 10 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n;
clrscr();
printf("Enter n value ");
scanf("%d",&n);
puts(n>0?" +Ve":n<0?" -Ve":"Zero");
getch();
}
```

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Go to PC settings to activate Windows.

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05-Sep-23



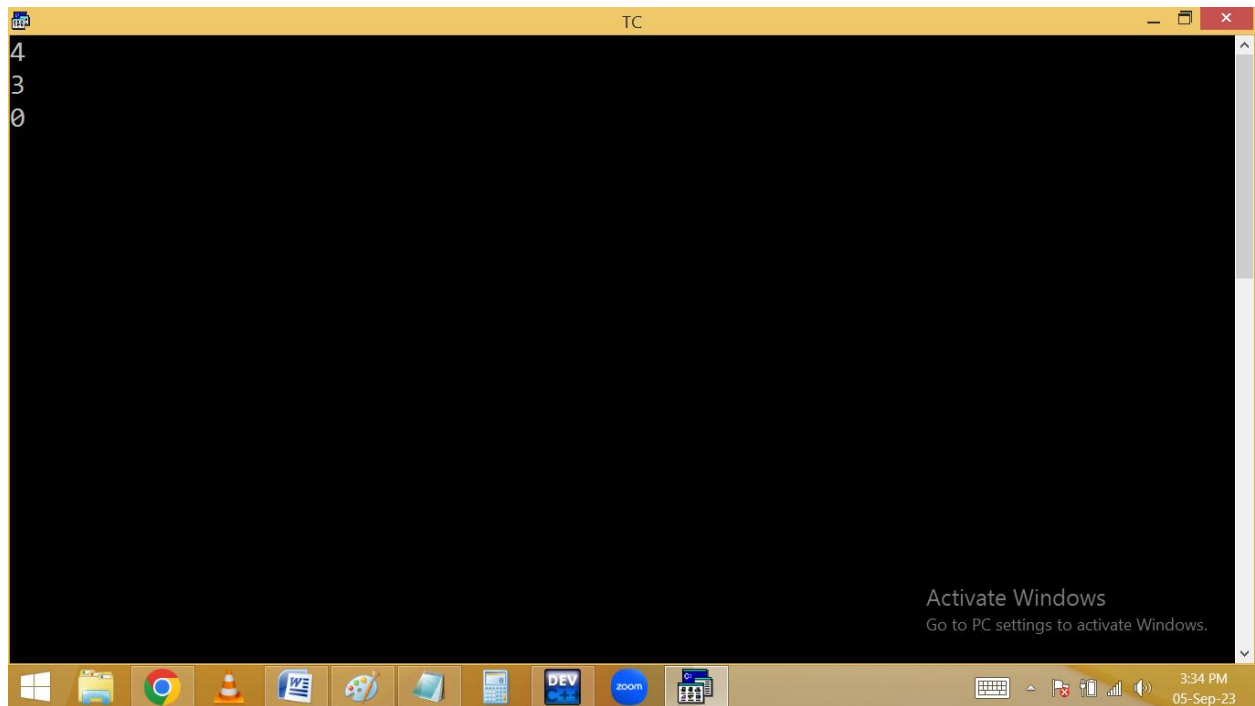




```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 24 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n", 0?1?2:3:4);
printf("%d\n",1?0?2:3:4);
printf("%d",1?2?0:3:4);
getch();
}
```

Activate Windows  
Go to PC settings to activate Windows.

3:34 PM  
05-Sep-23



```
TC
4
3
0
```

Activate Windows  
Go to PC settings to activate Windows.

3:34 PM  
05-Sep-23

		cond	?	true	:	false	
0 ?		1	?	2	:	3	: 4 ✓ ;
con?				true			: false



```

if( 0 )
{
  if( 1 ) p( 2 );
  else    p( 3 );
}
else p( 4 ); ✓

```

		cond	?	true	:	false	
1 ?		0	?	2	:	3	: 4 ;
con?				true			: false



```

if( 1 )
{
  T
  if( 0 ) p( 2 );
  else    p( 3 ); ✓
}
else p( 4 );

```

		cond	?	true	:	false	
1 ?		2	?	0	:	3	: 4 ;
con?				true			: false



```

if( 1 )
{
  T
  if( 2 ) p( 0 ); ✓
  else    p( 3 );
}
else p( 4 );

```