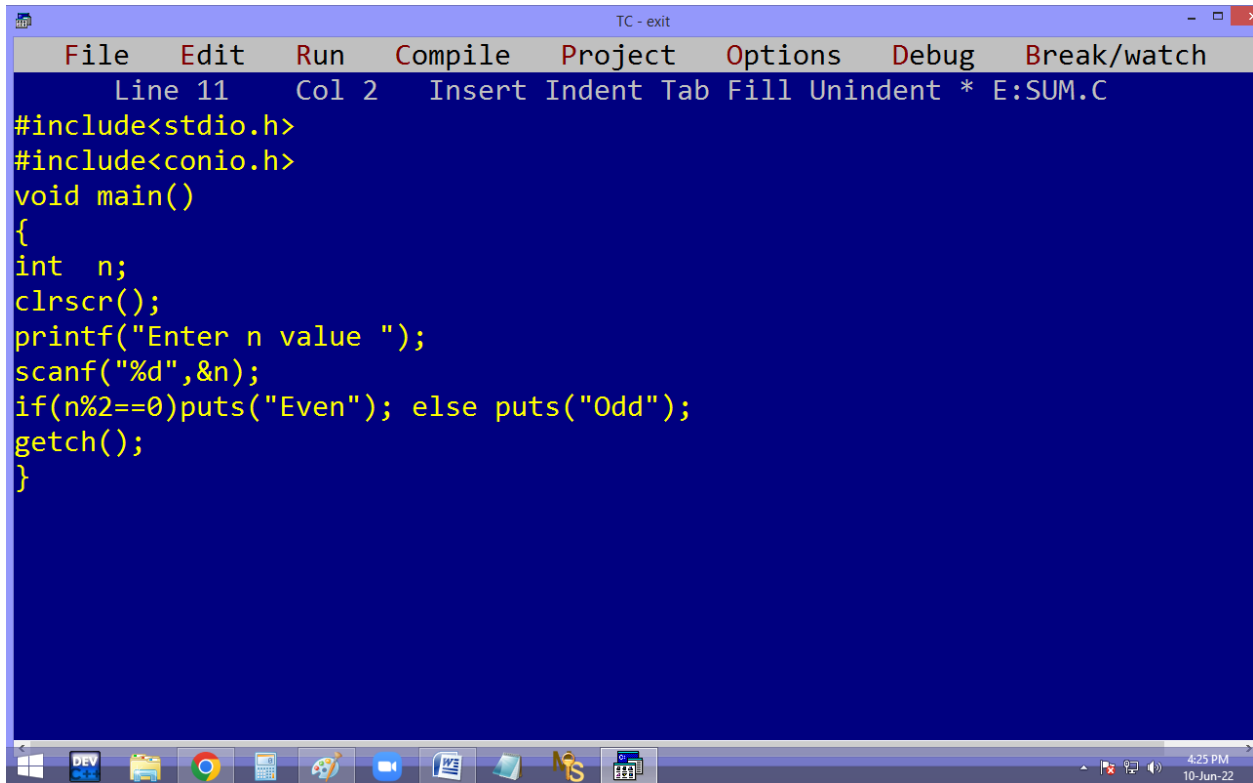


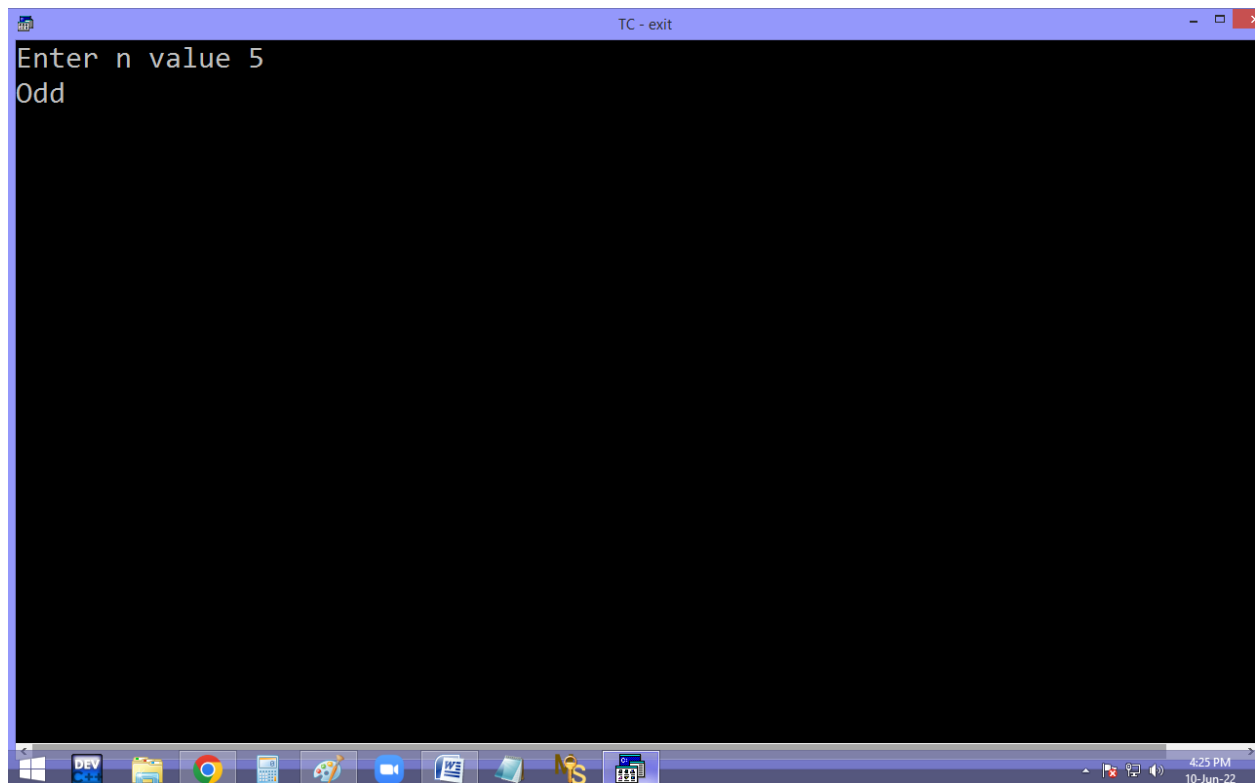
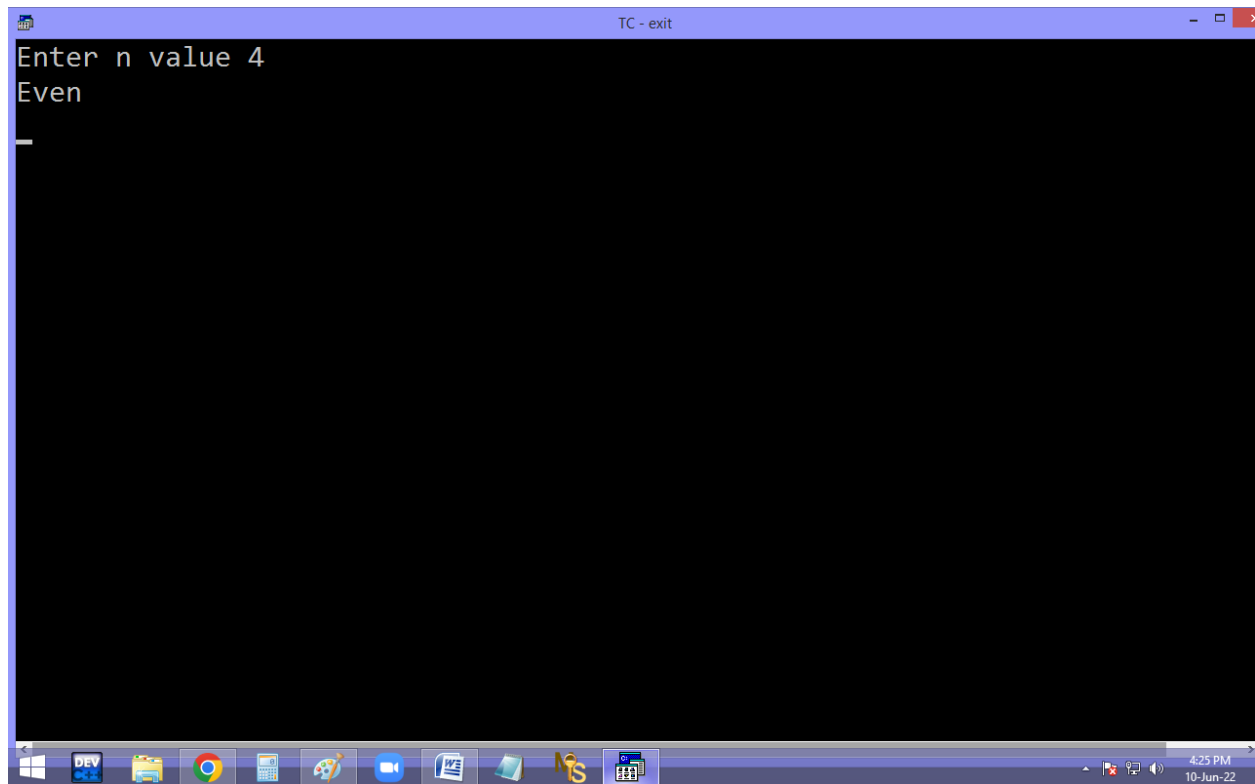
## Finding even/odd:



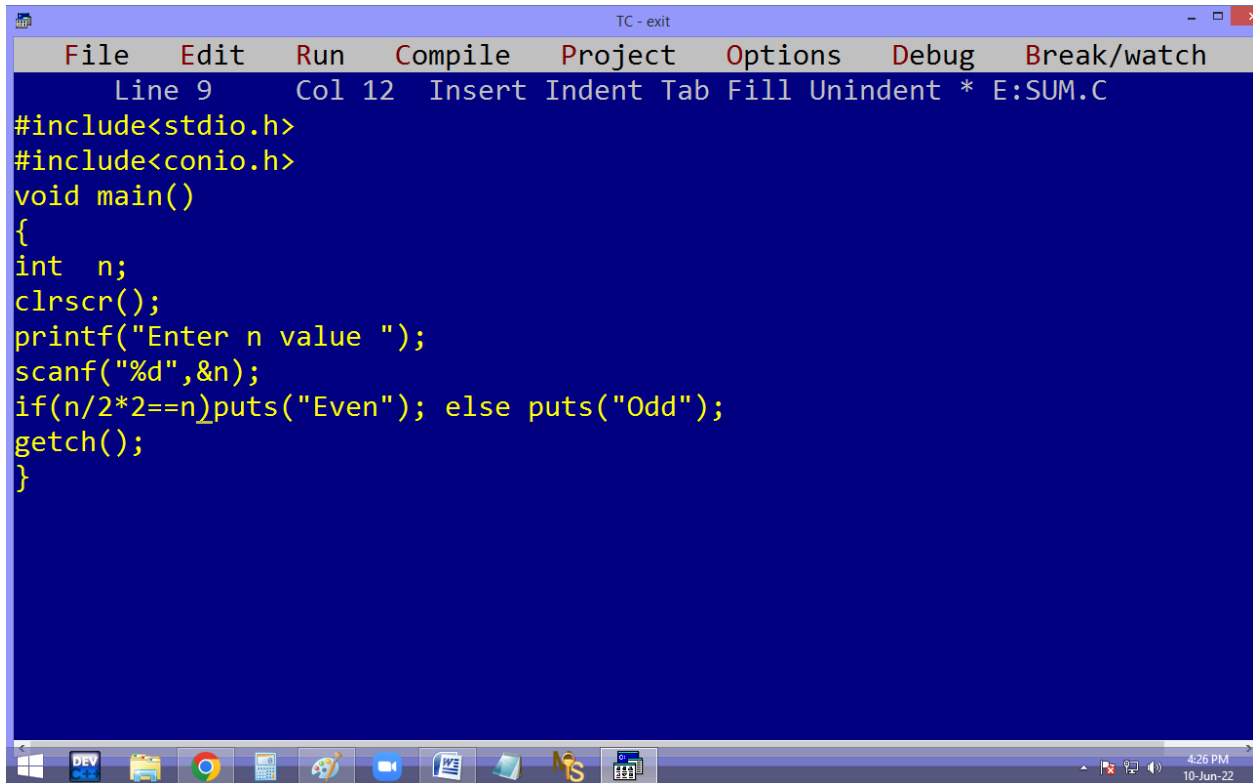
The screenshot shows a Turbo C++ IDE window titled "TC - exit". The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates "Line 11 Col 2 Insert Indent Tab Fill Unindent \* E:S\SUM.C". The code in the editor is as follows:

```
#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");
    getch();
}
```

The Windows taskbar at the bottom shows various icons including DEV, File Explorer, Chrome, Calculator, Paint, and others. The system clock in the bottom right corner displays "4:25 PM 10-Jun-22".



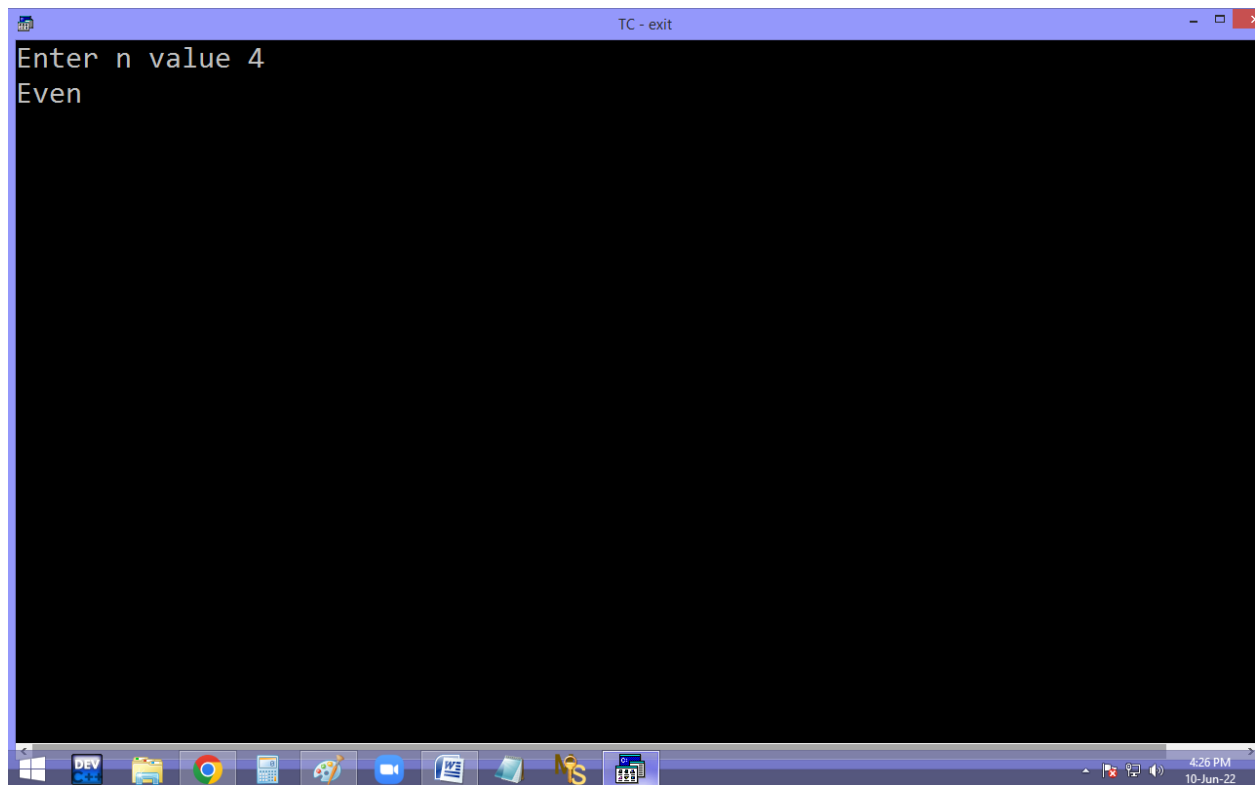
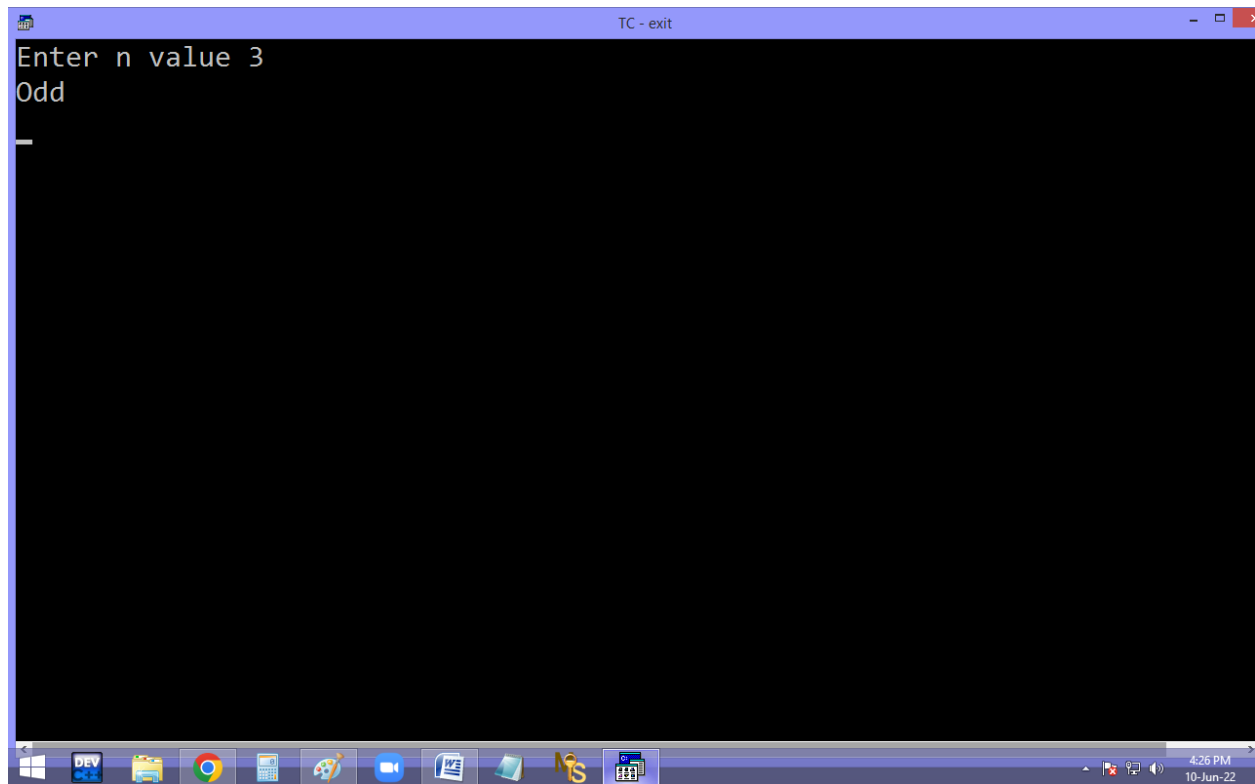
## Without using %:



The screenshot shows a Turbo C++ IDE window titled "TC - exit". The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates "Line 9 Col 12 Insert Indent Tab Fill Unindent \* E:S\SUM.C". The code in the editor is as follows:

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

The Windows taskbar at the bottom shows the Start button and several application icons, including DEV, File Explorer, Google Chrome, Calculator, Paint, and others. The system clock in the bottom right corner displays "4:26 PM" and "10-Jun-22".



$$5/2 = 2 \times 2 = 4 \neq 5$$

if( n/2 \* 2 == n)p("Even"); else p("Odd");

$$4/2 = 2 \times 2 = 4 == 4$$

Without using arithmetic operators:

$$\begin{array}{r} 2 \overline{) 3} \\ 1-1 \end{array}$$

$$4 = 100$$

$$1 = 001$$

$$\begin{array}{r} 100 \\ 001 \\ \hline 000 = 0 \end{array}$$

$$\begin{array}{r} 2 \overline{) 1} \\ 0-1 \end{array}$$

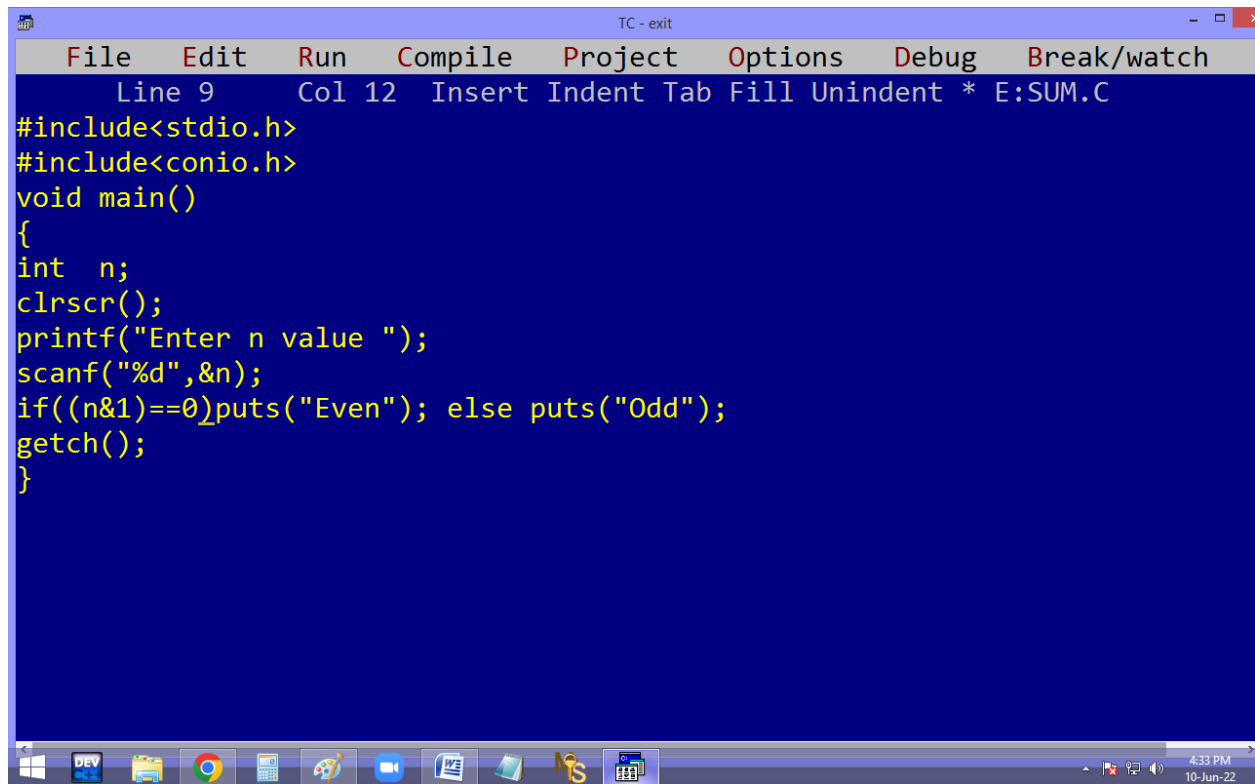
$$\begin{array}{r} 2 \overline{) 4} \\ 2 \overline{) 2-0} \\ 1-0 \end{array}$$

if( (n&1)==0)p("Even"); else p("Odd");

$$3 = 11$$

$$1 = 01$$

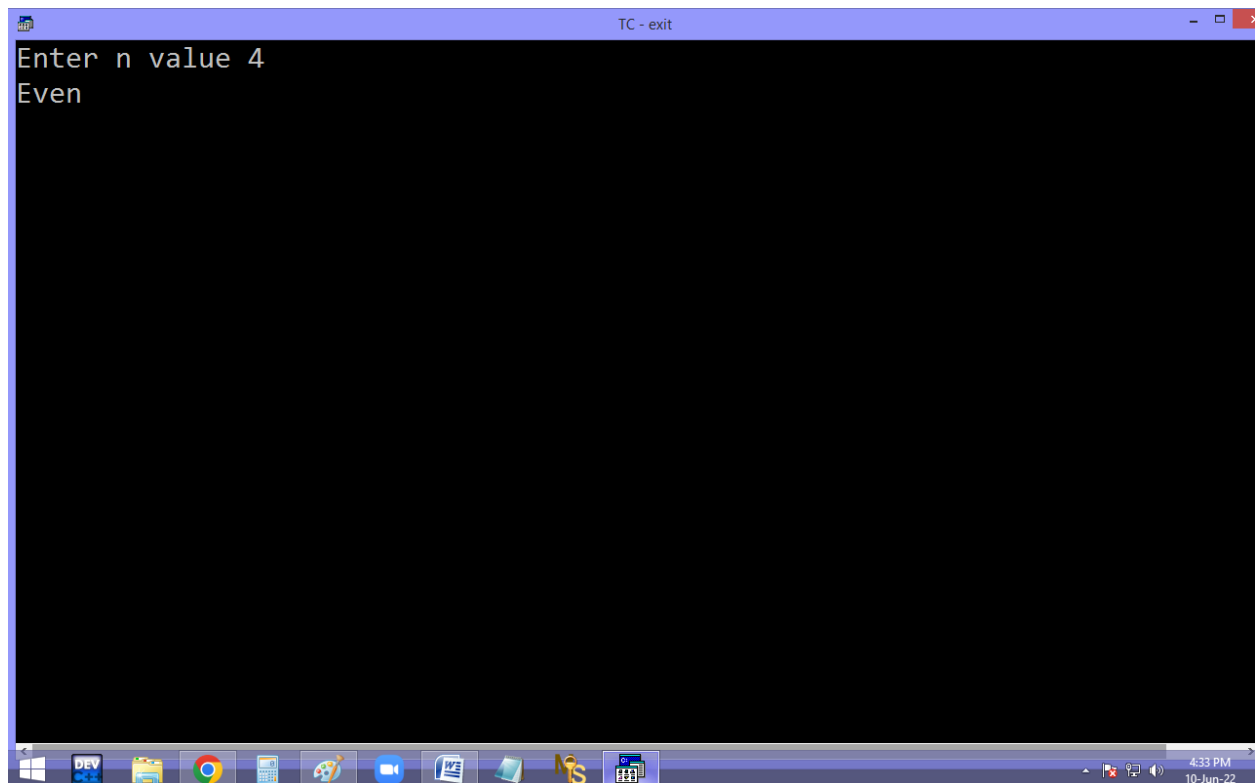
$$\begin{array}{r} 11 \\ 01 \\ \hline 01 = 1 \end{array}$$



The screenshot shows the Turbo C++ IDE with the following code in the editor:

```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 12 Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n;
clrscr();
printf("Enter n value ");
scanf("%d",&n);
if((n&1)==0)puts("Even"); else puts("Odd");
getch();
}
```

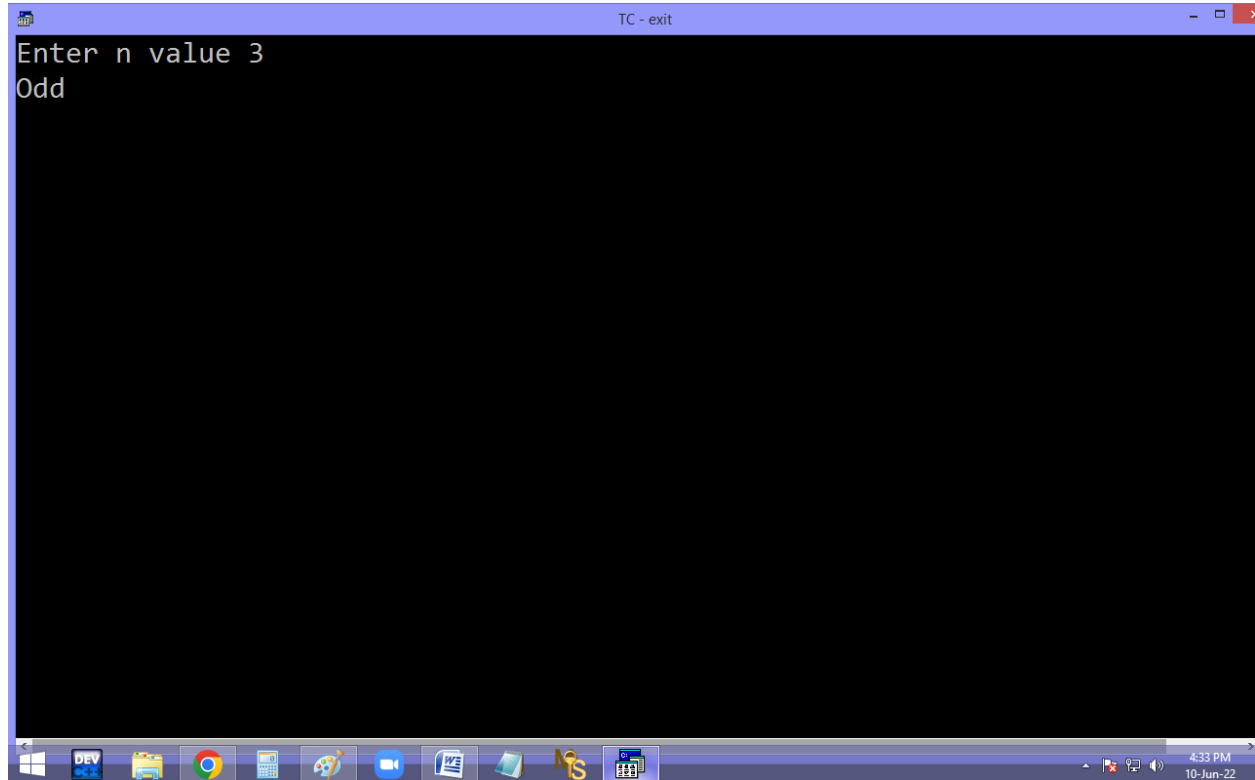
The taskbar at the bottom shows various application icons and the system clock indicating 4:33 PM on 10-Jun-22.



The screenshot shows the Turbo C++ IDE with the following output in the console:

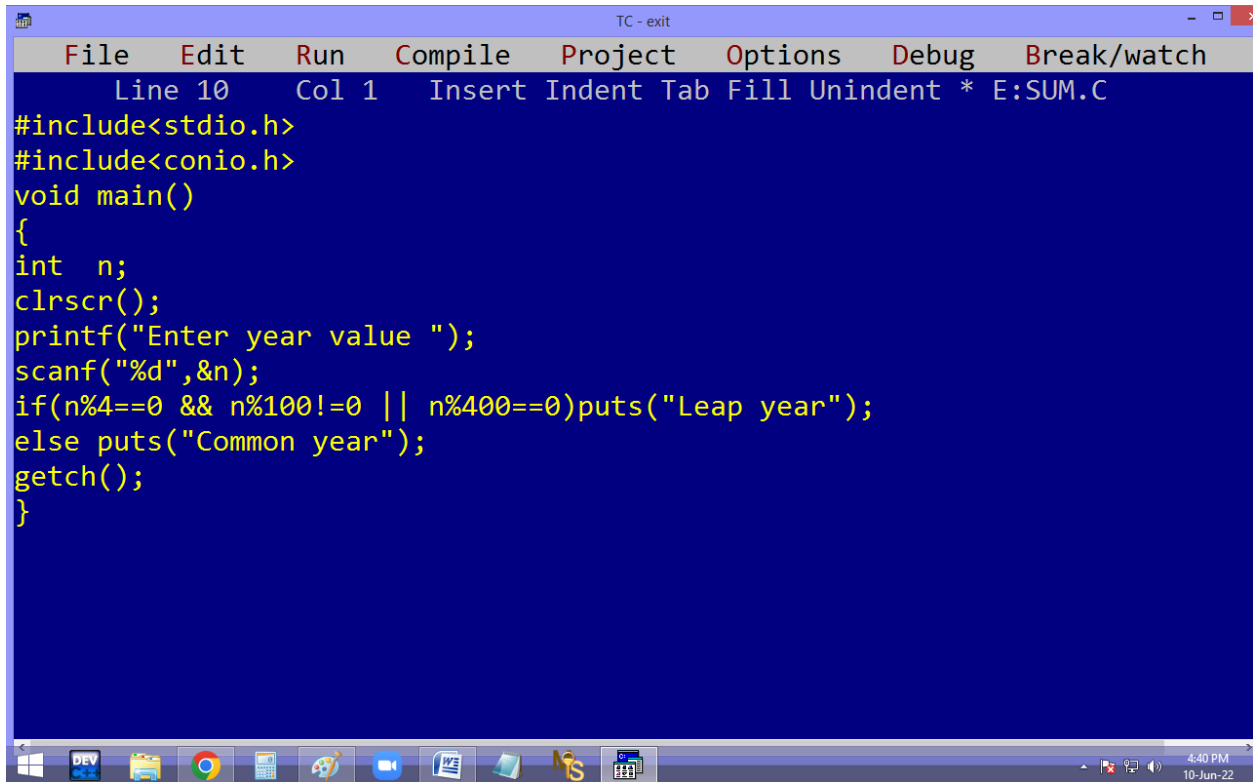
```
Enter n value 4
Even
```

The taskbar at the bottom shows various application icons and the system clock indicating 4:33 PM on 10-Jun-22.



```
TC - exit
Enter n value 3
Odd
```

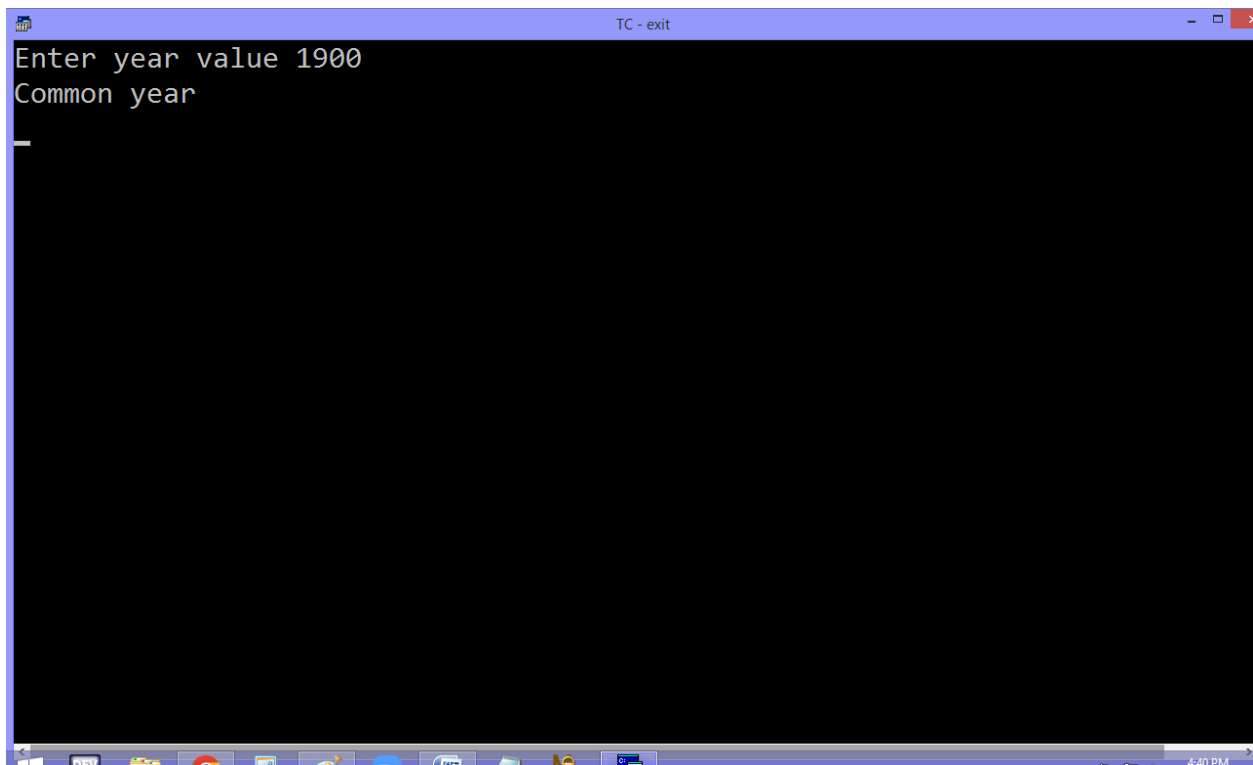
**Eg. Finding leap / common year.**



The screenshot shows the Turbo C++ IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a status bar (Line 10, Col 1, Insert, Indent, Tab, Fill, Unindent, \* E:SUM.C). The main window has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int n;
    clrscr();
    printf("Enter year value ");
    scanf("%d",&n);
    if(n%4==0 && n%100!=0 || n%400==0)puts("Leap year");
    else puts("Common year");
    getch();
}
```

The Windows taskbar at the bottom shows icons for DEV, File Explorer, Chrome, Calculator, Paint, and other applications. The system clock indicates 4:40 PM on 10-Jun-22.

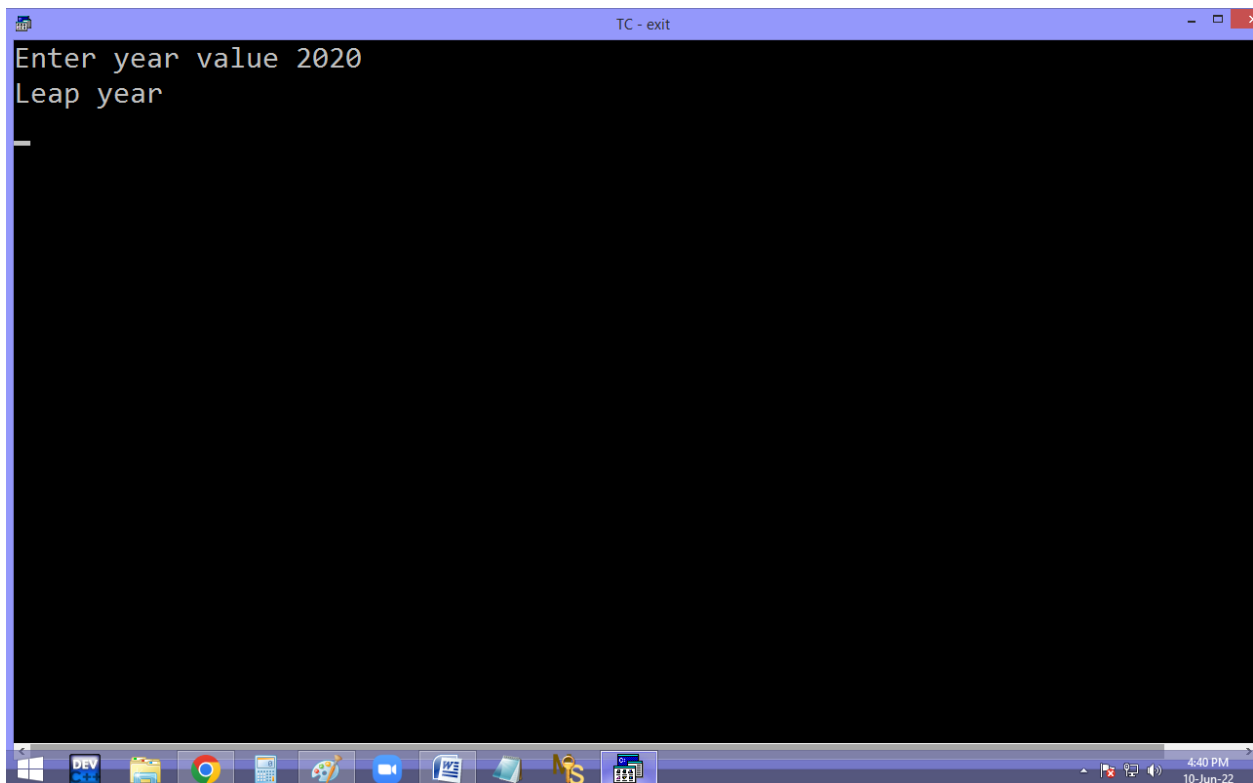
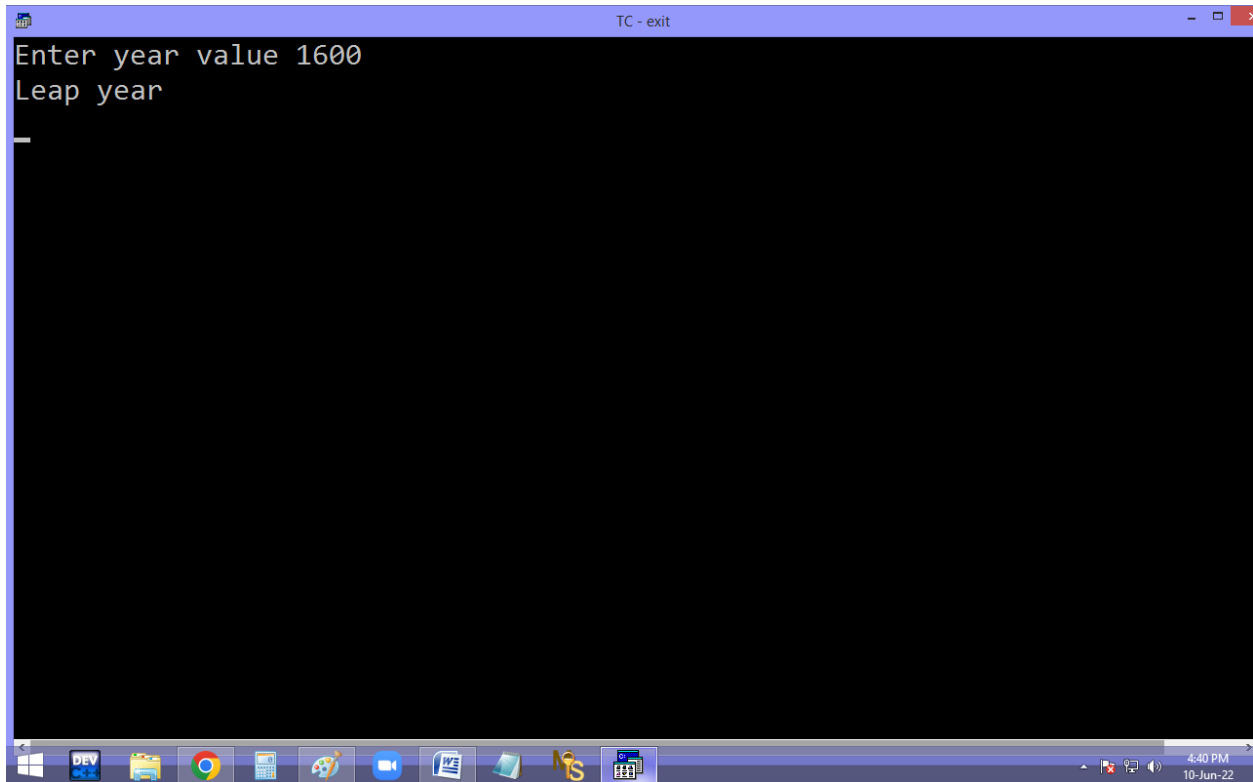


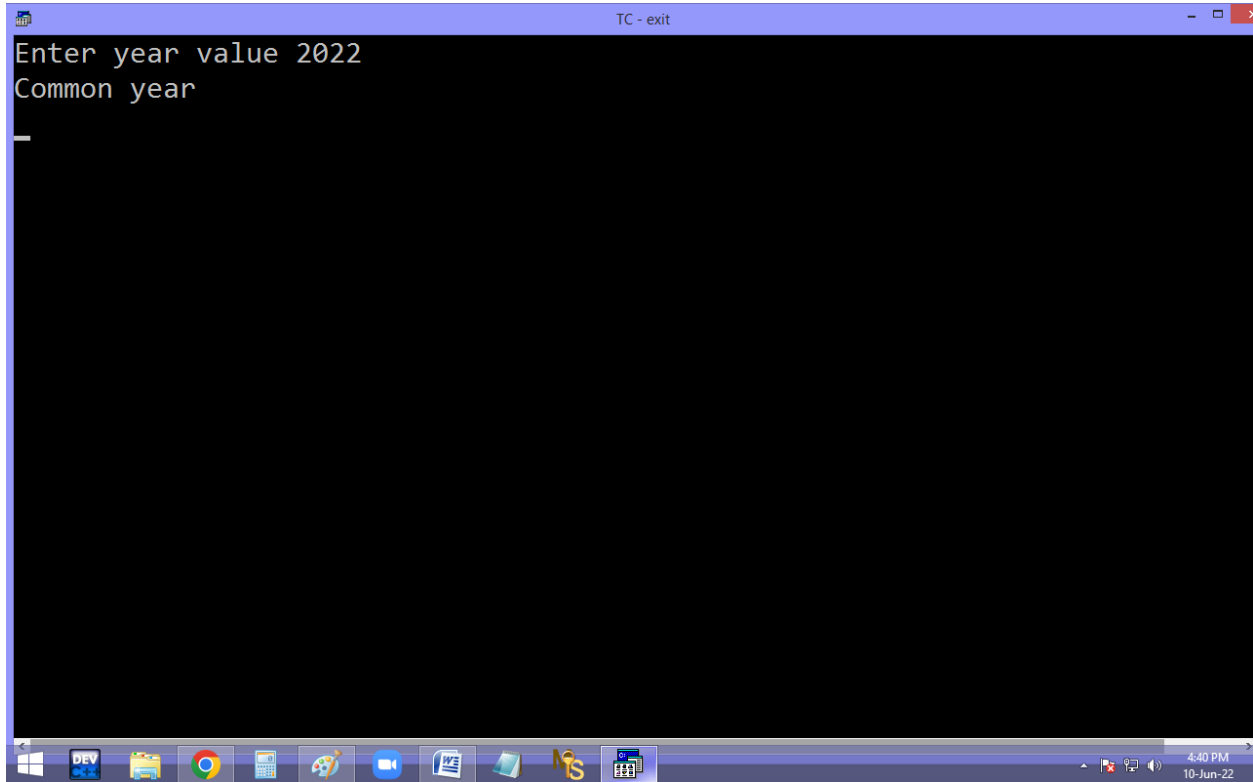
The screenshot shows the Turbo C++ IDE with the same menu bar and status bar as the first image. The main window has a black background and displays the output of the program:

```
Enter year value 1900
Common year
```

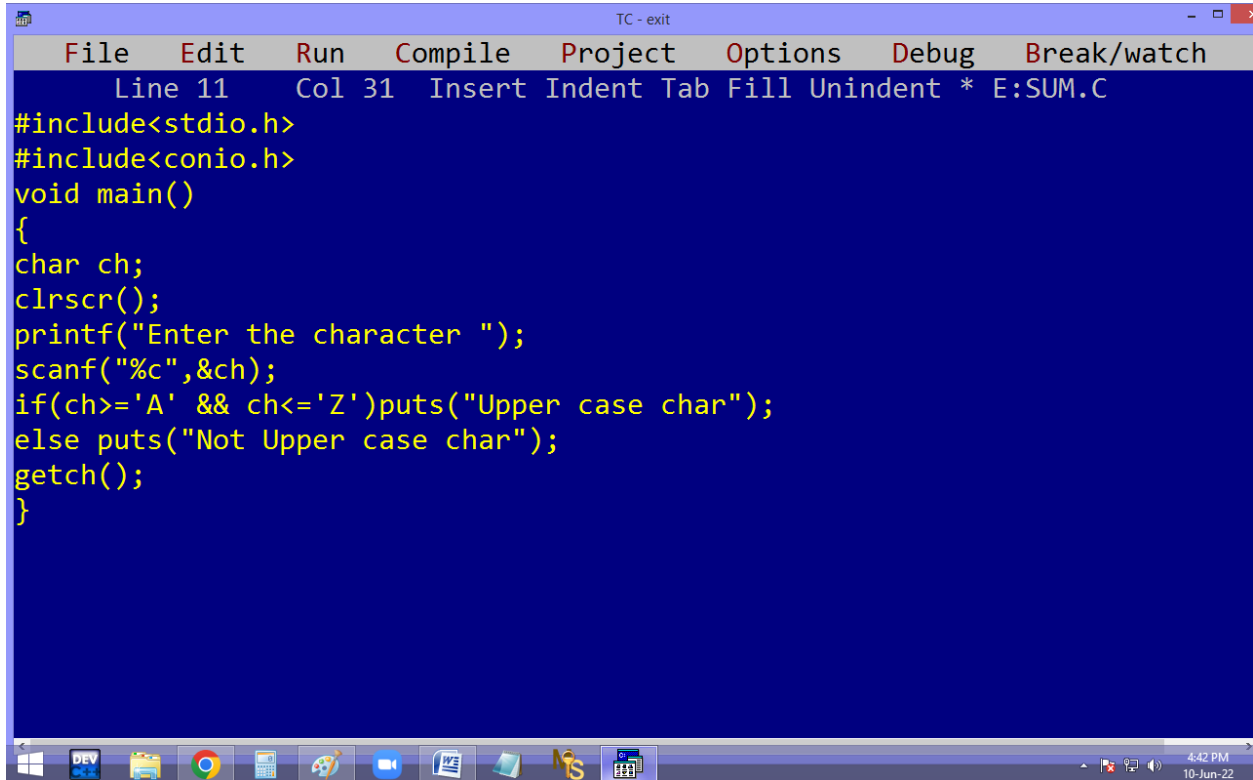
The Windows taskbar at the bottom is identical to the first image, showing the same set of application icons and system clock.



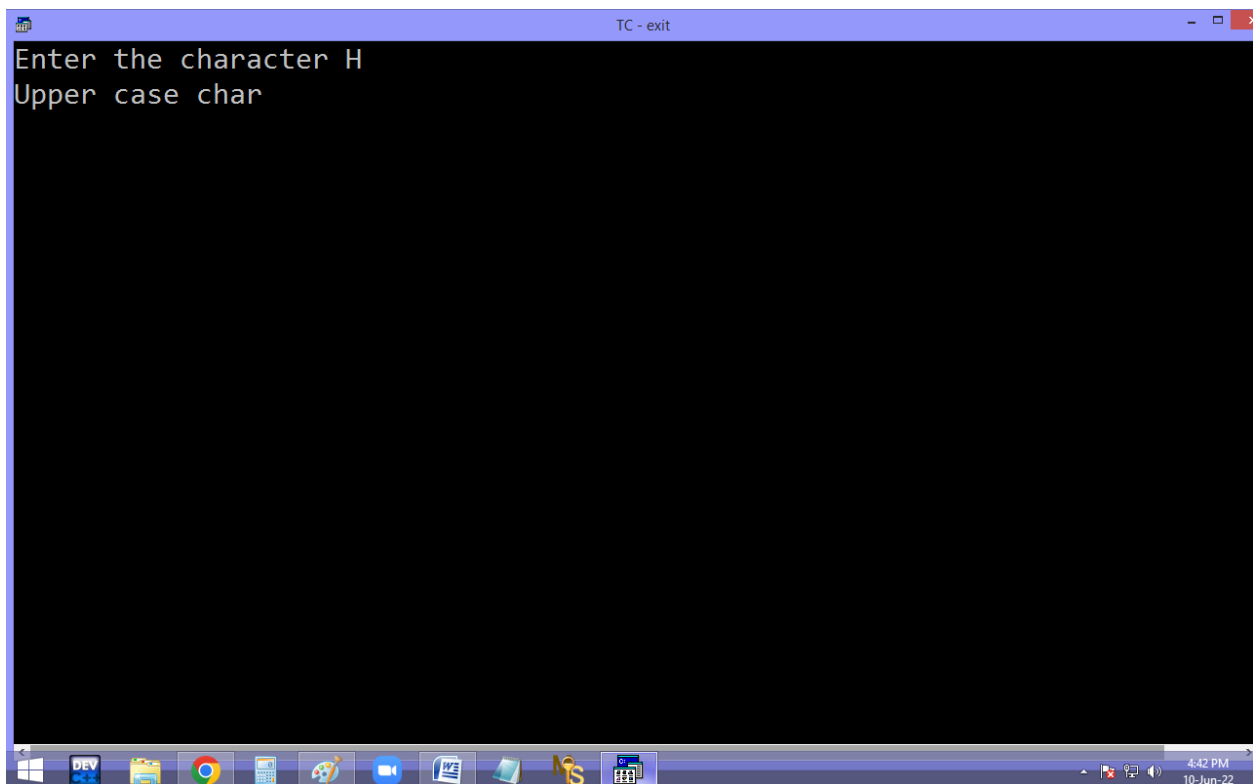




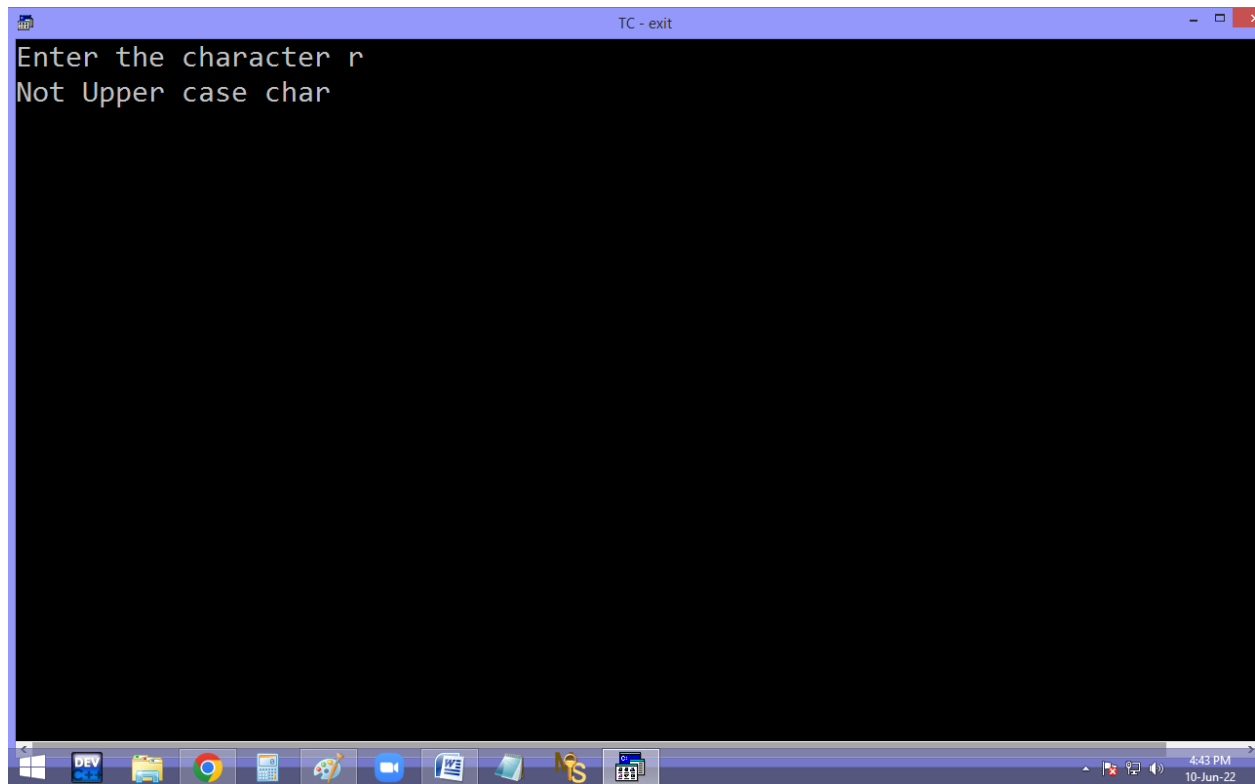
## Eg. finding upper case char or not.



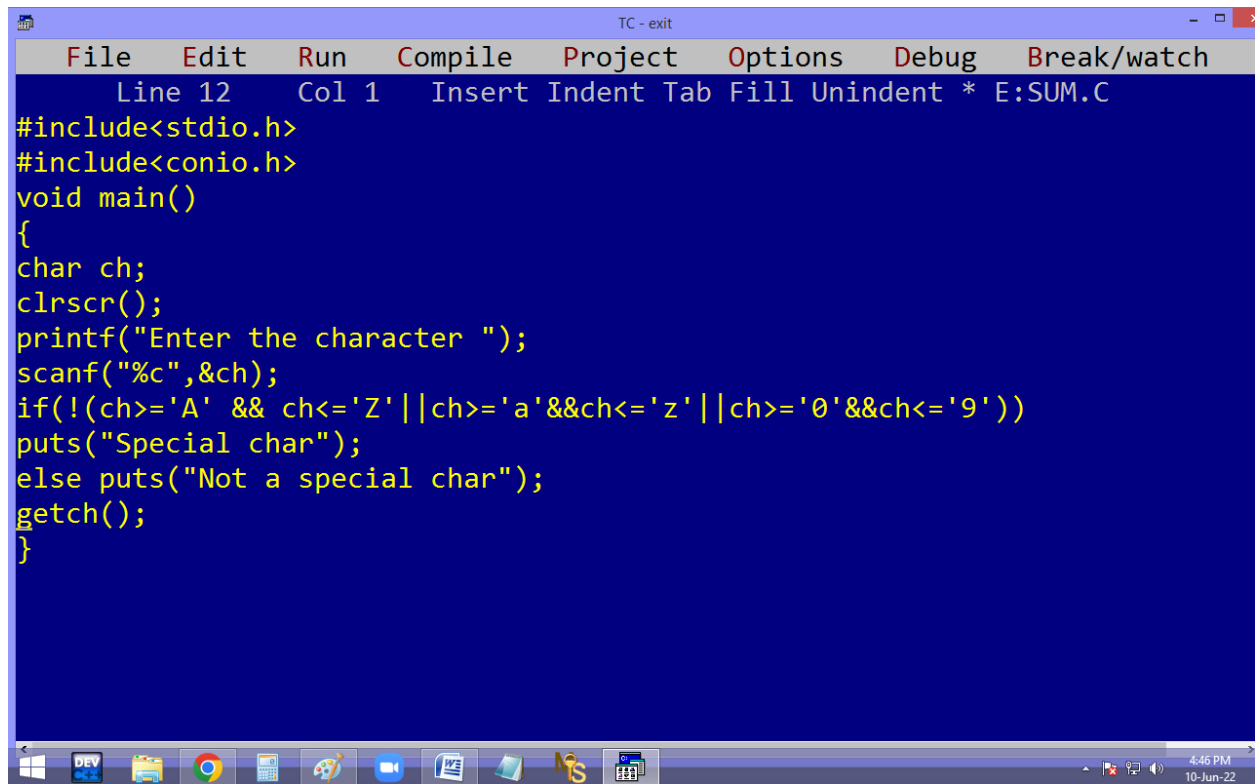
```
TC - exit
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 31 Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
clrscr();
printf("Enter the character ");
scanf("%c",&ch);
if(ch>='A' && ch<='Z')puts("Upper case char");
else puts("Not Upper case char");
getch();
}
```



```
TC - exit
Enter the character H
Upper case char
```



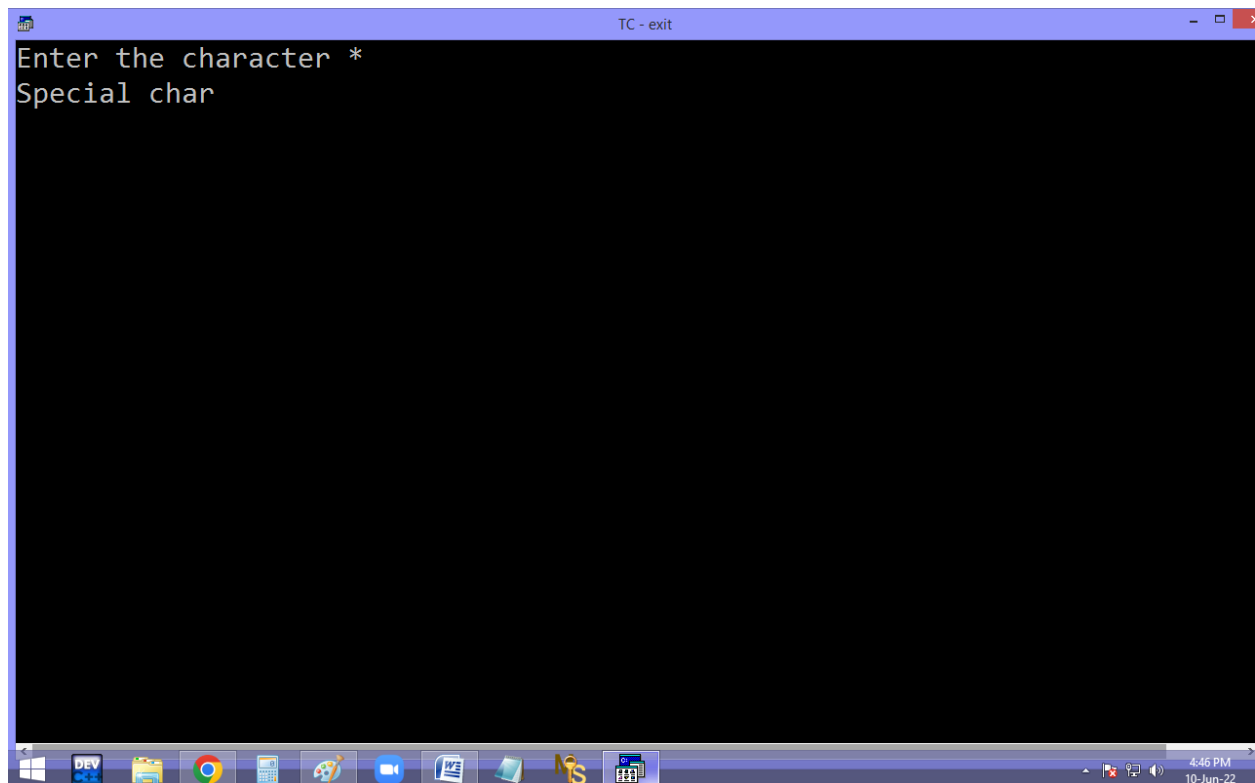
**Eg. finding special char**



The screenshot shows the Turbo C++ IDE with the following code in the editor:

```
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 1 Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
clrscr();
printf("Enter the character ");
scanf("%c",&ch);
if(!(ch>='A' && ch<='Z' || ch>='a'&&ch<='z' || ch>='0'&&ch<='9'))
puts("Special char");
else puts("Not a special char");
getch();
}
```

The taskbar at the bottom shows various application icons and the system clock indicating 4:46 PM on 10-Jun-22.



The screenshot shows the Turbo C++ IDE with the following output in the console:

```
Enter the character *
Special char
```

The taskbar at the bottom shows various application icons and the system clock indicating 4:46 PM on 10-Jun-22.

```
TC - exit
Enter the character d
Not a special char
```

Eg. Read sales man name and sales. Find the sales man allowances based on below table.

Basic = 10000, da=65.66% of basic

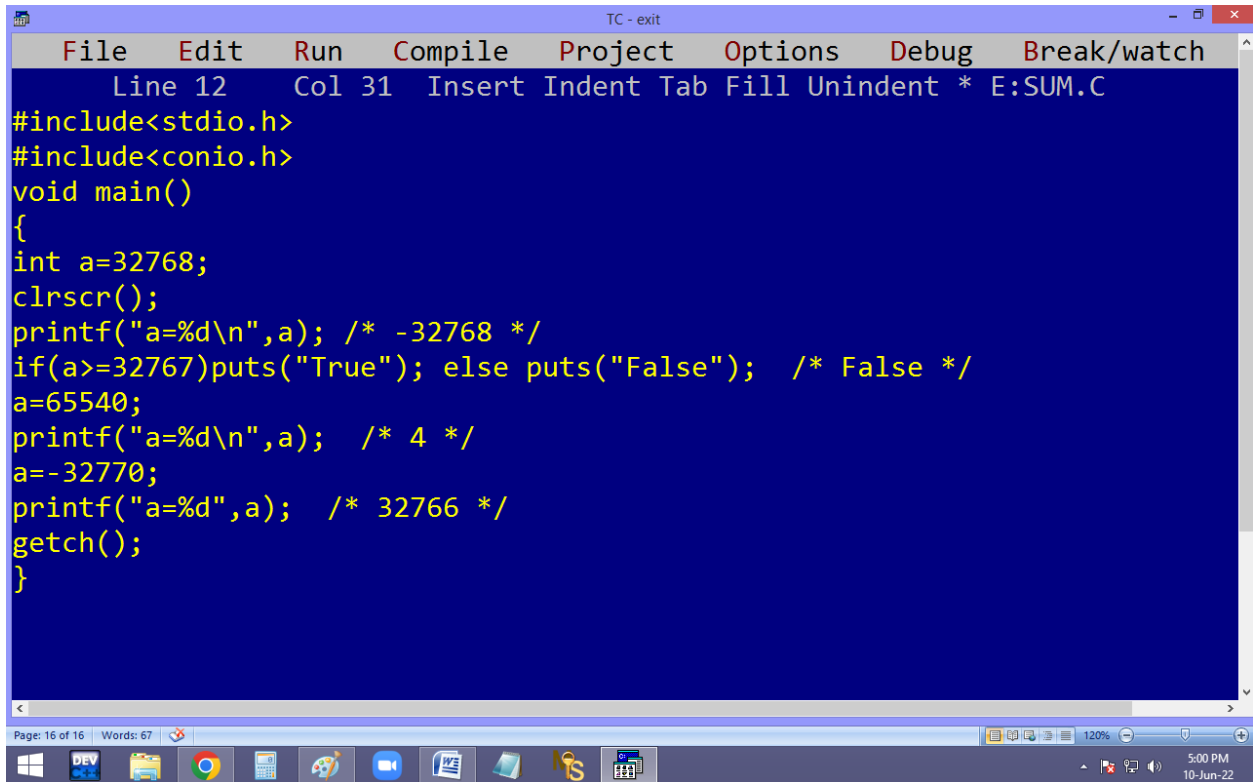
Sales>=100000	Sales<100000
Bonus=10000	Bonus=2000
Commission=10% of sales	Commission=5% of sales
Gross = basic + da + bonus + commission	

```
TC - exit
Line 19   Col 2   Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char name[20];
float sales, basic=10000,da=basic * 65.66/100, bonus, comm, gross;
clrscr();
printf("Enter emp name, sales amount ");
scanf("%s %f",name, &sales);
if(sales>=100000) { bonus=10000; comm=sales*0.1;}
else { bonus=2000; comm=sales*0.05;}
gross = basic + da + bonus + comm;
printf("Basic=%.2f\n",basic);
printf("Da=%.2f\n",da);
printf("Bonus=%.2f\n",bonus);
printf("Commission=%.2f\n",comm);
printf("Gross=%.2f",gross);
getch();
}
```

```
TC - exit
Basic=10000.00
Da=6566.00
Bonus=10000.00
Commission=10000.00
Gross=36566.00_
```

```
TC - exit
Enter emp name, sales amount suresh 99999
Basic=10000.00
Da=6566.00
Bonus=2000.00
Commission=4999.95
Gross=23565.95_
```





TC - exit

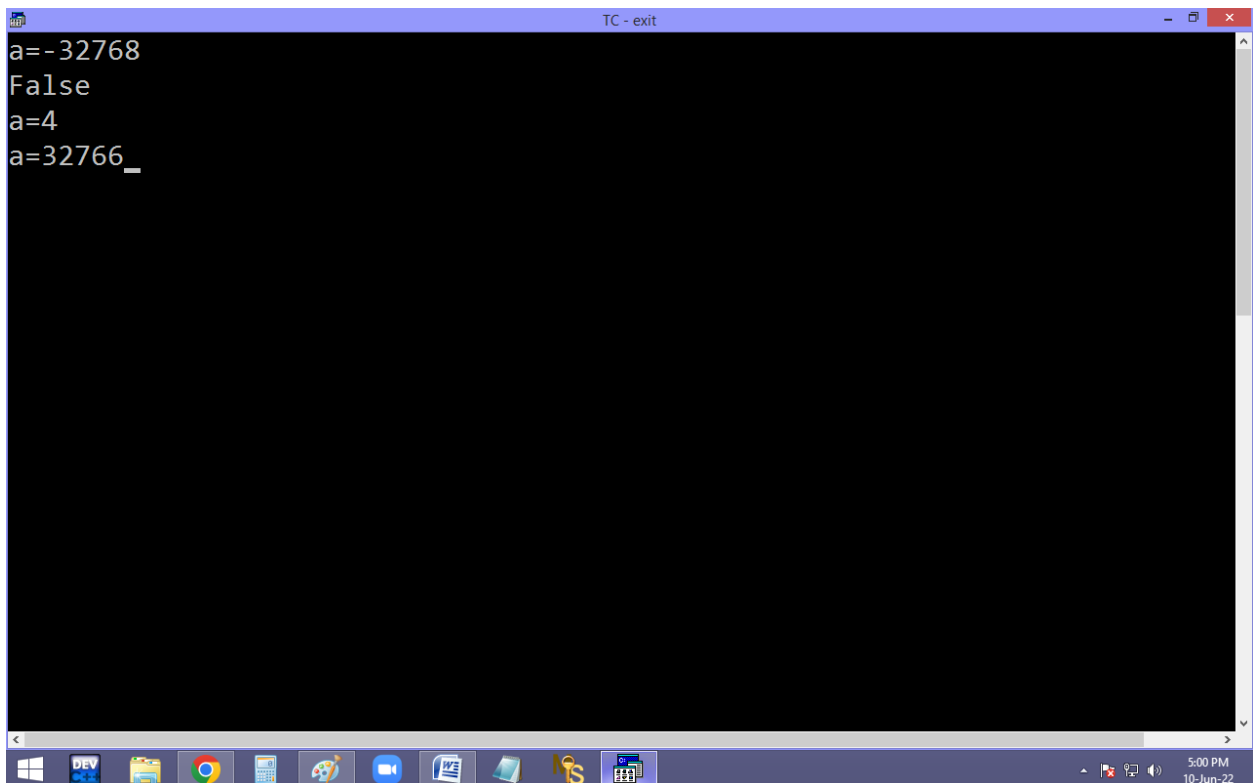
File Edit Run Compile Project Options Debug Break/watch

Line 12 Col 31 Insert Indent Tab Fill Unindent \* E:SUM.C

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=32768;
clrscr();
printf("a=%d\n",a); /* -32768 */
if(a>=32767)puts("True"); else puts("False"); /* False */
a=65540;
printf("a=%d\n",a); /* 4 */
a=-32770;
printf("a=%d",a); /* 32766 */
getch();
}
```

Page: 16 of 16 Words: 67

5:00 PM 10-Jun-22



TC - exit

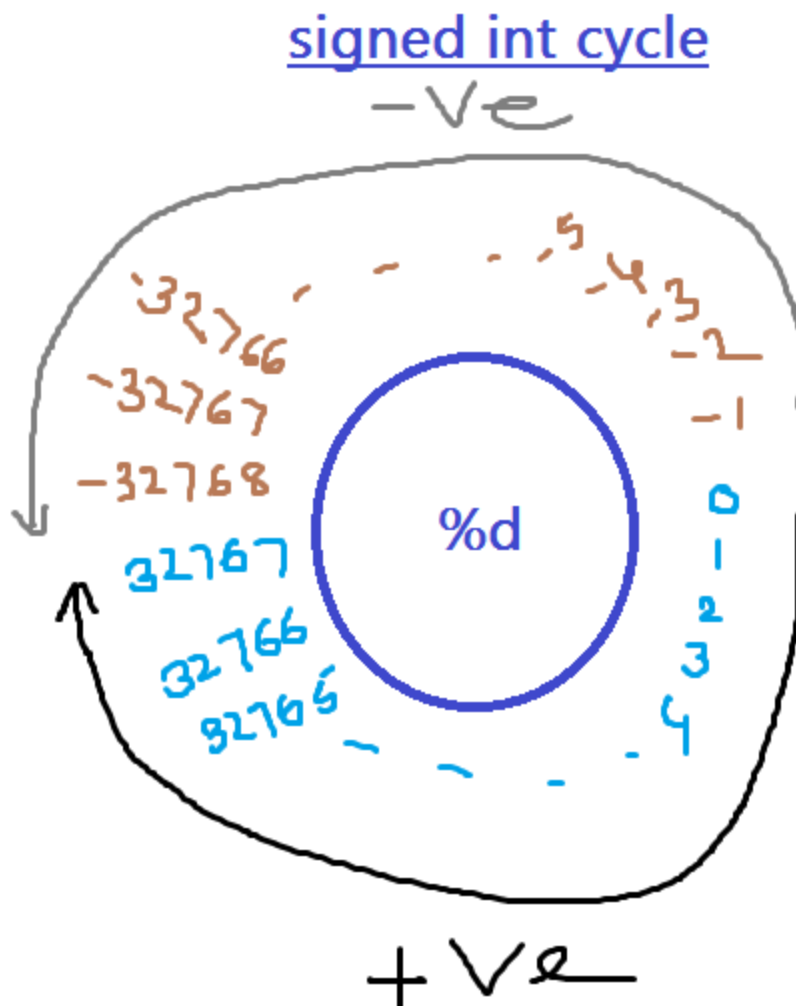
```
a=-32768
False
a=4
a=32766_
```

Page: 16 of 16 Words: 67

5:00 PM 10-Jun-22

C integer ==>  $2^{16}$  <== 65536

- signed int ==> -32768 to +32767  
%d
- unsigned int ==> 0 to 65535  
%u



32768

signed int cycle

$$\underline{-32768} + 0 = -32768$$

0 ↗

32768

32768 -32768

32767

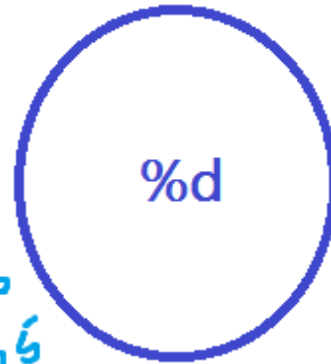
32766

32765

65536

-32768

-32768

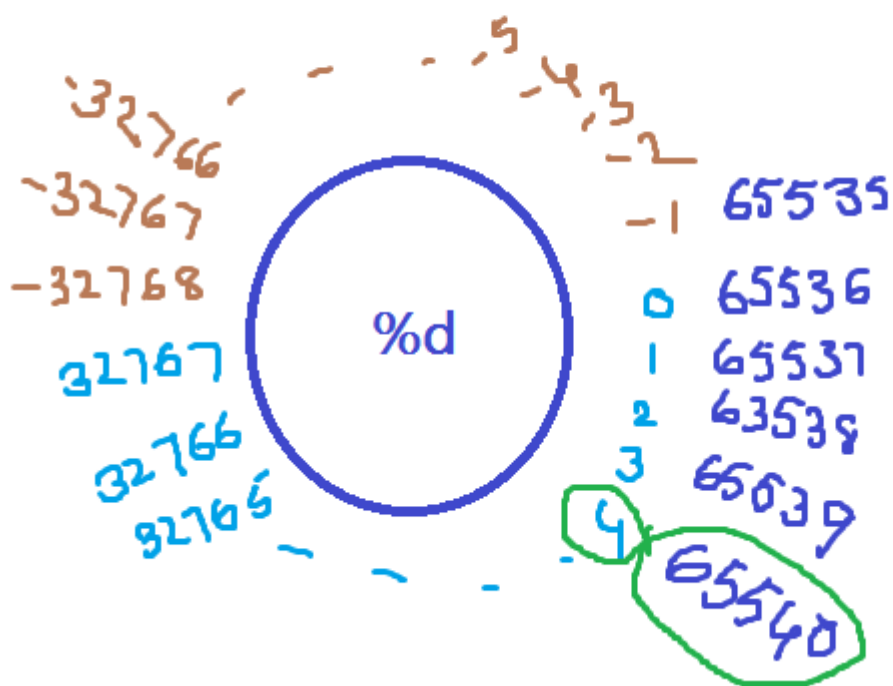


## signed int cycle

a=65540

-65536

4



## signed int cycle

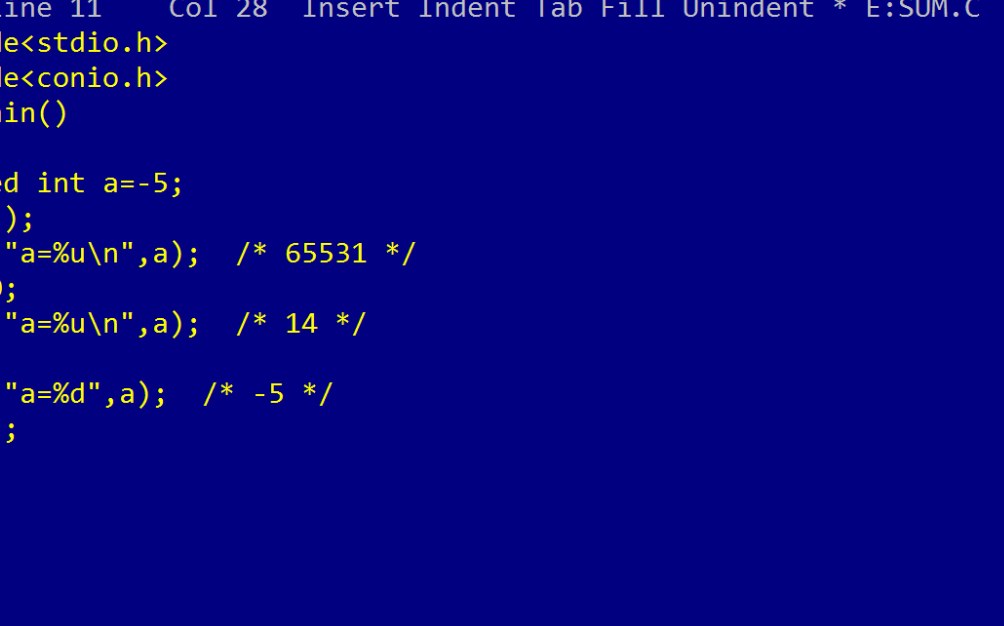
a=-32770

65536

-32770

32766

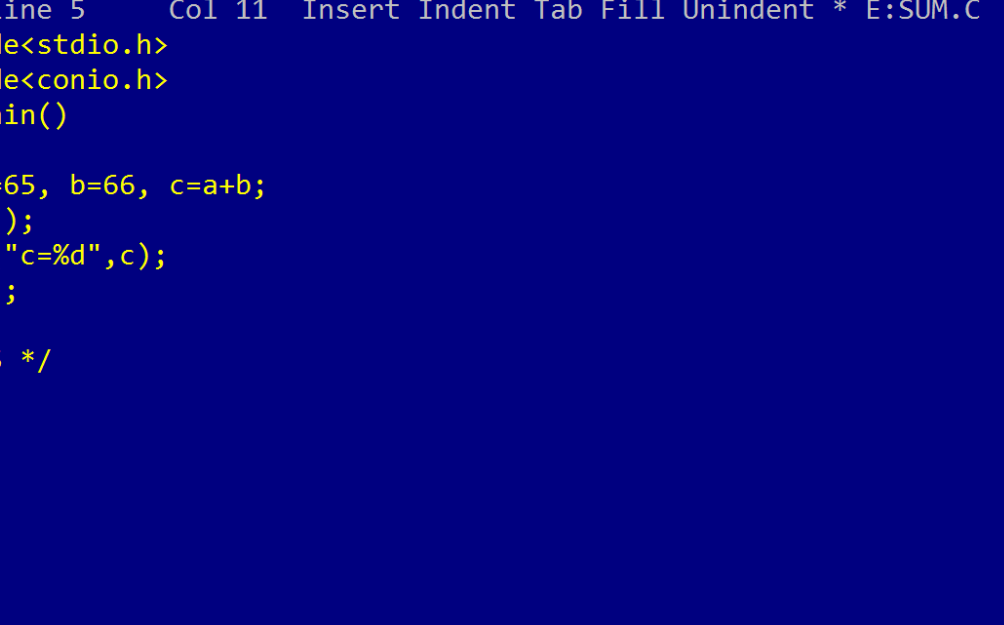




```
TC - exit
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 28 Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
    unsigned int a=-5;
    clrscr();
    printf("a=%u\n",a); /* 65531 */
    a=65550;
    printf("a=%u\n",a); /* 14 */
    a=-5;
    printf("a=%d",a); /* -5 */
    getch();
}
```

## C character set ==> 256 ASCII Values

256 { signed char ==> -128 to +127  
unsigned char ==> 0 to 255

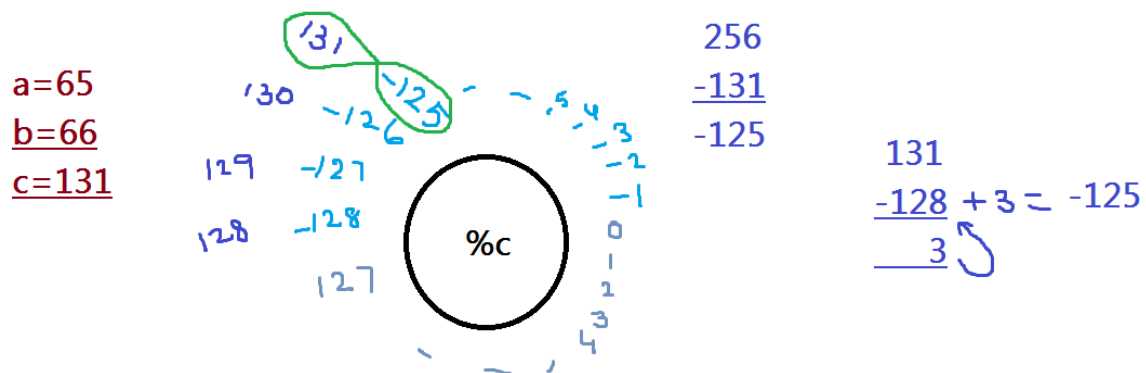


The screenshot shows the Turbo C++ IDE with the following menu bar: File, Edit, Run, Compile, Project, Options, Debug, Break/watch. The status bar at the top indicates "Line 5", "Col 11", and "Insert Indent Tab Fill Unindent \* E:SUM.C". The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
char a=65, b=66, c=a+b;
clrscr();
printf("c=%d",c);
getch();
}
/* -125 */
```

The Windows taskbar at the bottom shows the Start button and several application icons, including DEV, a folder, Google Chrome, a calculator, a paint application, a video chat application, a document application, a folder, and a folder with a key icon. The system clock in the bottom right corner displays "5:39 PM" and "10-Jun-22".

signed char cycle



The image shows a screenshot of the Turbo C++ (TC) IDE. The top window, titled "TC - exit", displays a C program in a blue editor. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 16 Col 1 Insert Indent Tab Fill Unindent * E:SUM.C
#include<stdio.h>
#include<conio.h>
void main()
{
    unsigned char a=65, b=66, c=a+b;
    clrscr();
    printf("c=%d\n",c); /* 131 */
    c = 260;
    printf("c=%d\n",c); /* 4 */
    c = -10;
    printf("c=%d\n",c); /* 246 */
    c=3;
    printf("%c",c); /* Love */
    getch();
}
```

The bottom window, also titled "TC - exit", shows the output of the program on a black background. The output is:

```
c=131
c=4
c=246
♥
_
```

The Windows taskbar at the bottom of the screen shows the time as 5:43 PM and 5:44 PM on 10-Jun-22. Various application icons are visible in the taskbar.