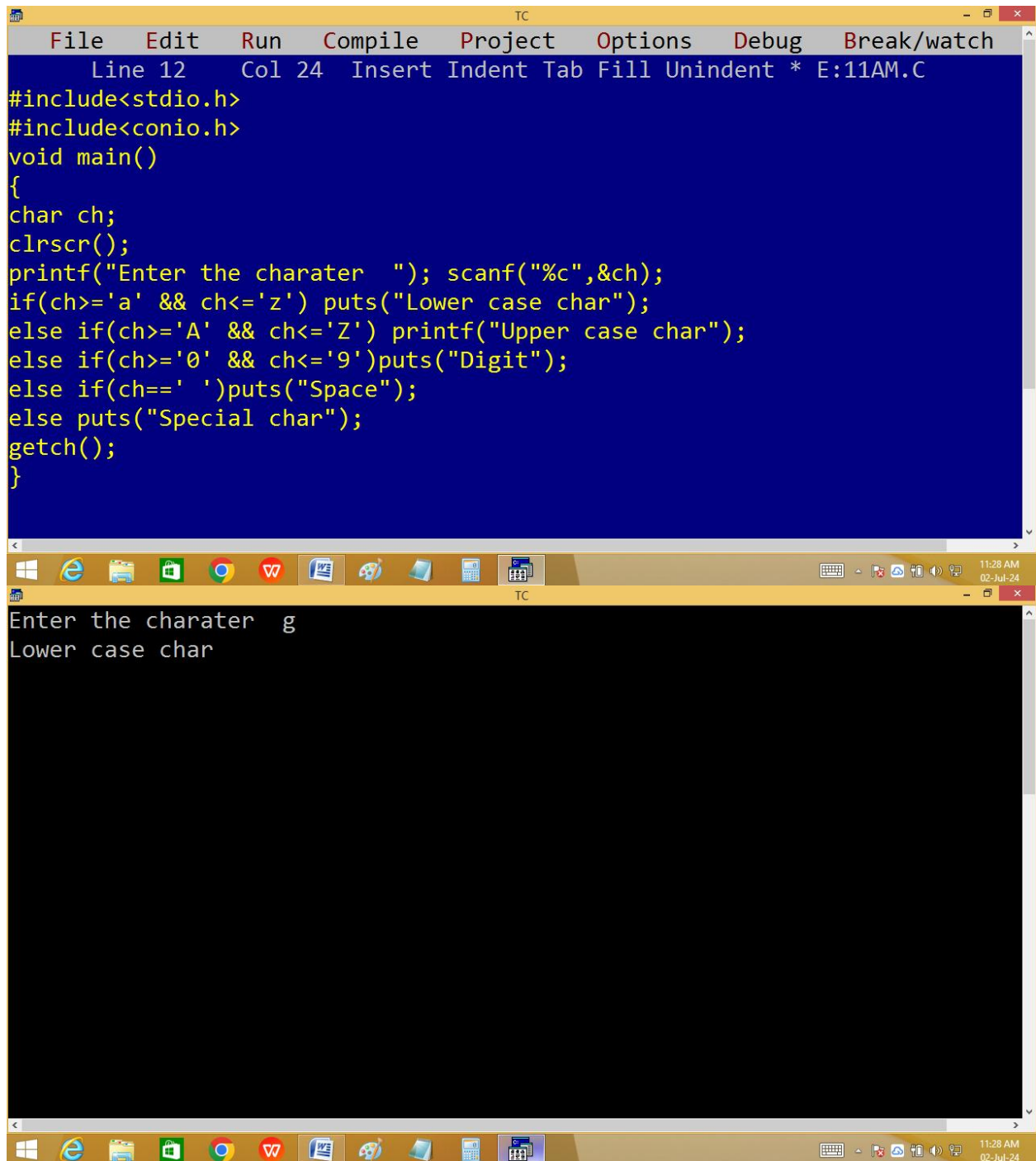


Finding lower / upper / digit / space / special char.



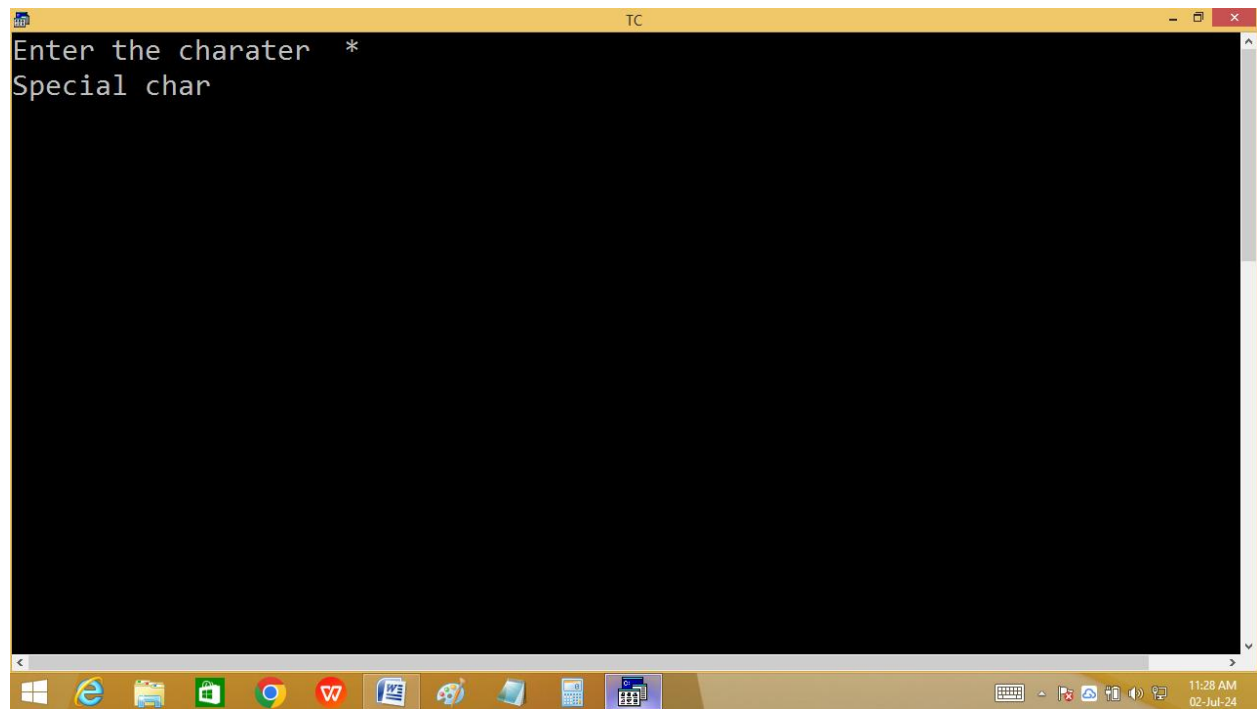
The screenshot displays the Turbo C++ (TC) IDE. The top window shows the source code for a C program. The code includes `<stdio.h>` and `<conio.h>`, and defines a `main` function. Inside `main`, a character `ch` is declared, the screen is cleared with `clrscr()`, and the user is prompted to enter a character. The program then uses a series of `if` statements to check if the character is a lowercase letter, uppercase letter, digit, space, or special character, printing the result for each case. The bottom window shows the program's execution: the prompt "Enter the charater" is followed by the input 'g', and the output "Lower case char" is displayed.

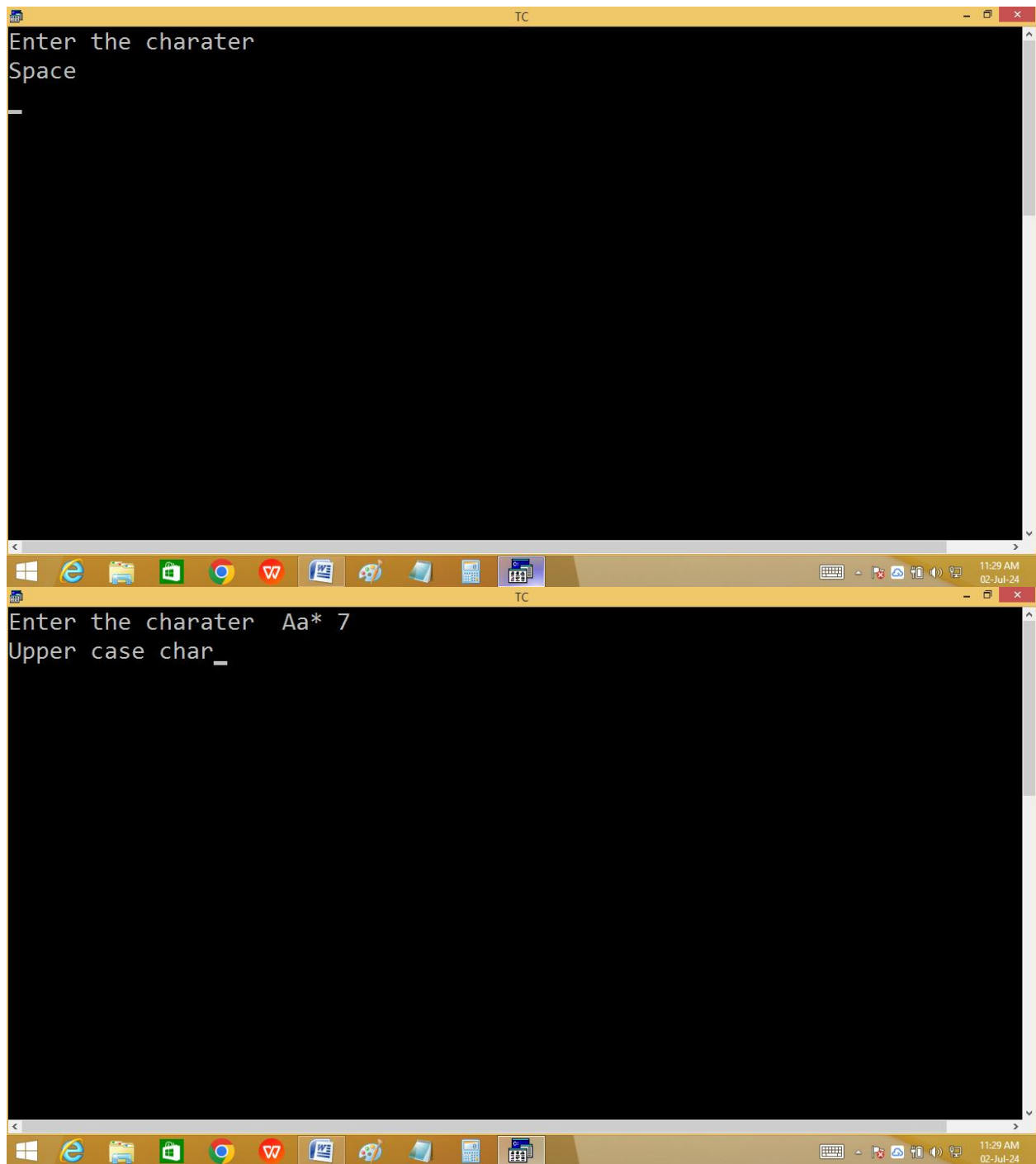
```
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 24 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater "); scanf("%c",&ch);
if(ch>='a' && ch<='z') puts("Lower case char");
else if(ch>='A' && ch<='Z') printf("Upper case char");
else if(ch>='0' && ch<='9')puts("Digit");
else if(ch==' ')puts("Space");
else puts("Special char");
getch();
}
```

Enter the charater g
Lower case char

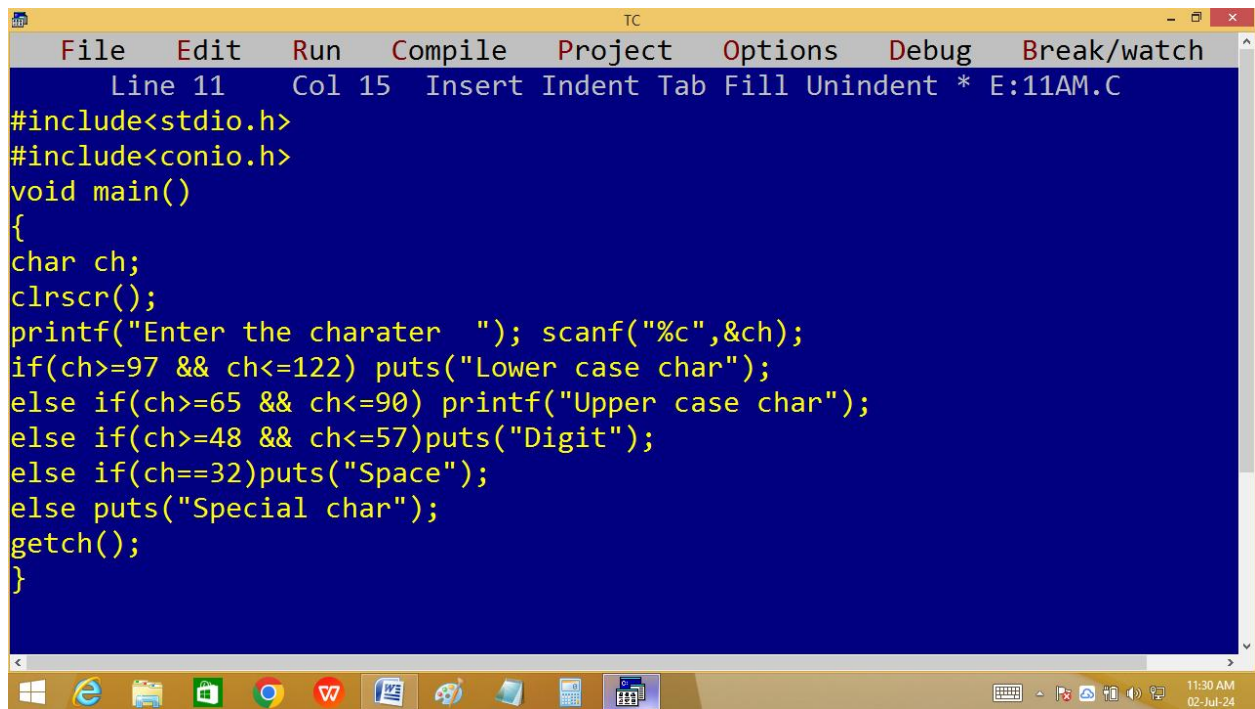
```
TC
Enter the charater  H
Upper case char_
```

```
TC
Enter the charater  7
Digit
```

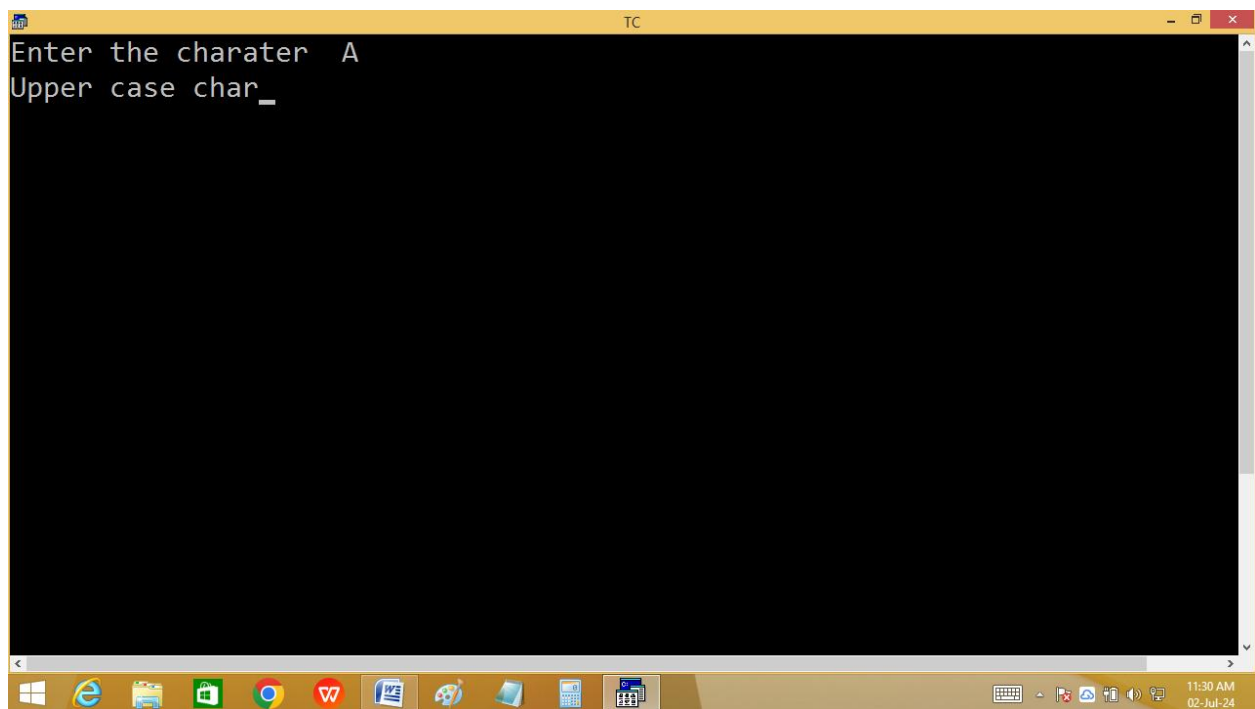




Using ascii values:



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 15 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater "); scanf("%c",&ch);
if(ch>=97 && ch<=122) puts("Lower case char");
else if(ch>=65 && ch<=90) printf("Upper case char");
else if(ch>=48 && ch<=57)puts("Digit");
else if(ch==32)puts("Space");
else puts("Special char");
getch();
}
```



```
TC
Enter the charater A
Upper case char_
_
```

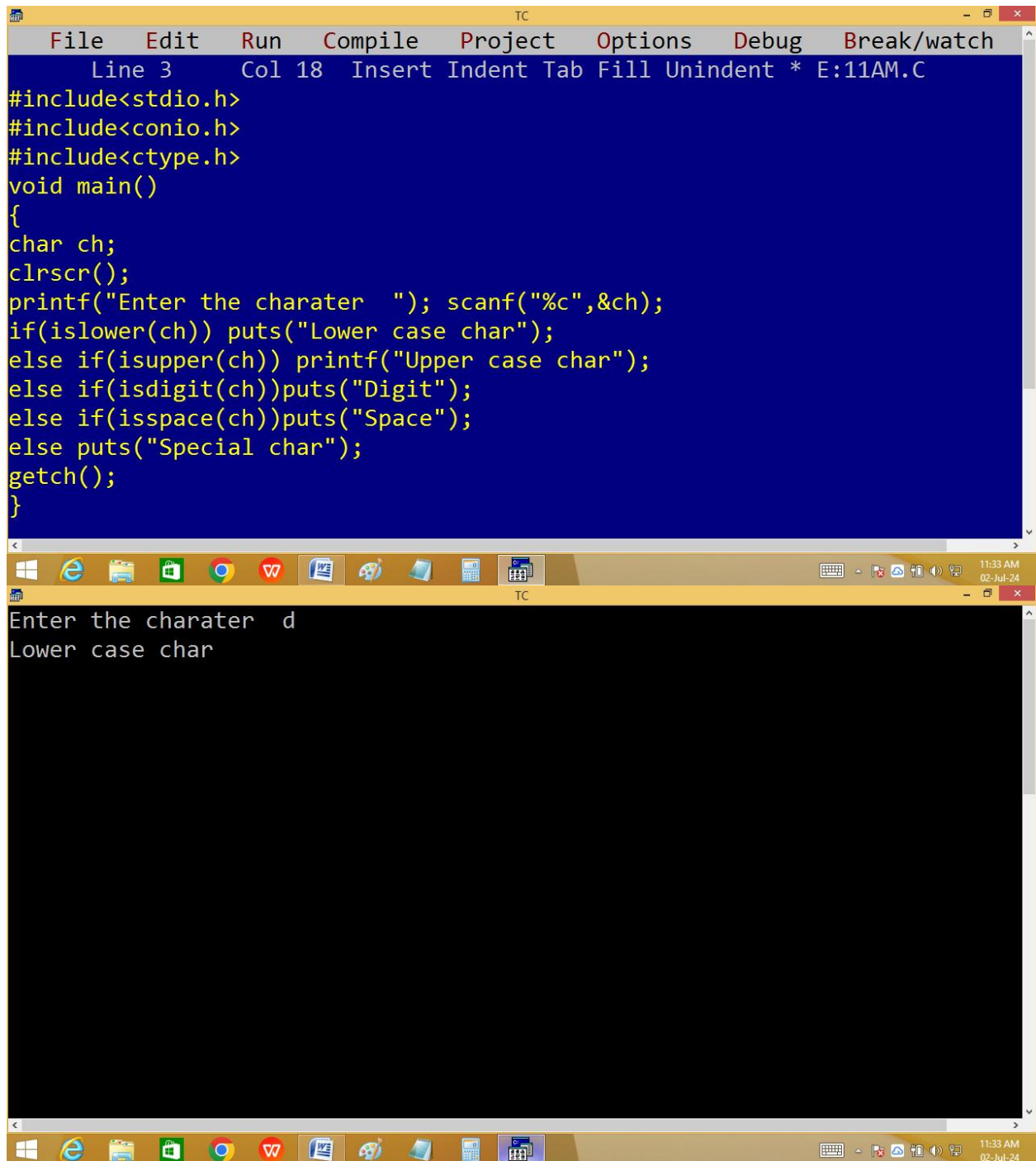
```
TC
Enter the charater  b
Lower case char
```

```
TC
Enter the charater  9
Digit
```

```
TC
Enter the charater $
Special char
```

```
TC
Enter the charater
Space
```

Using predefined functions:

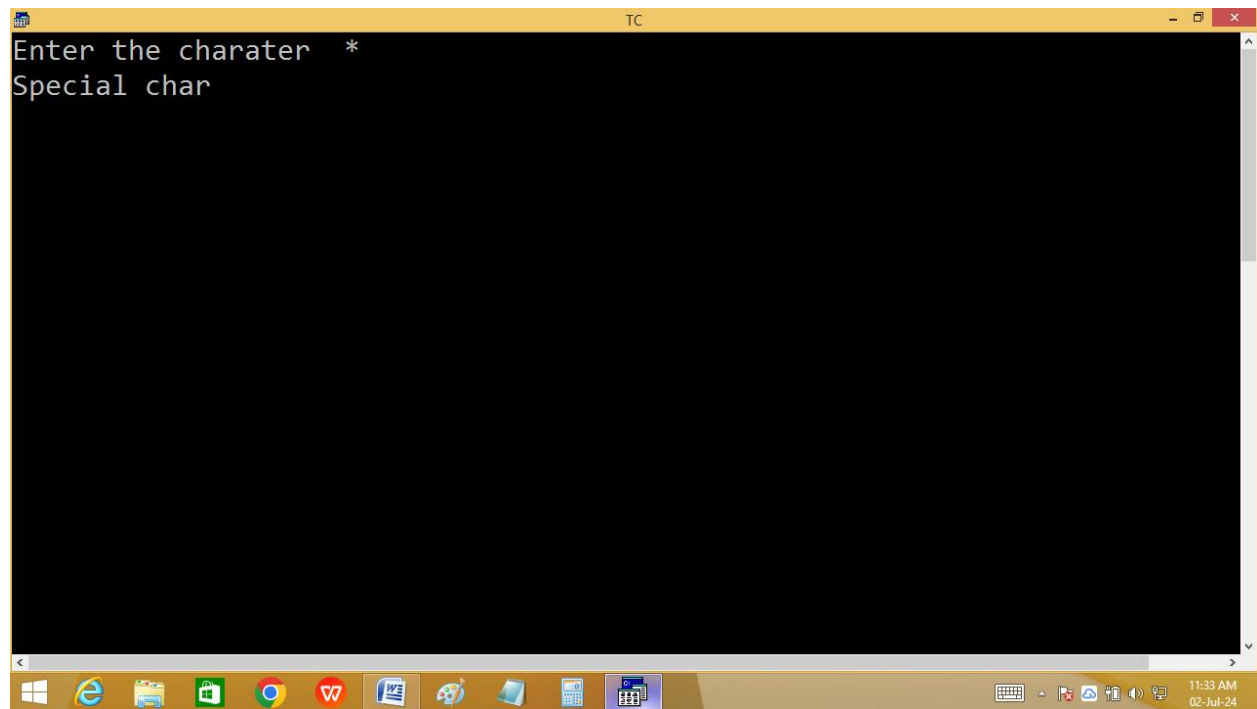


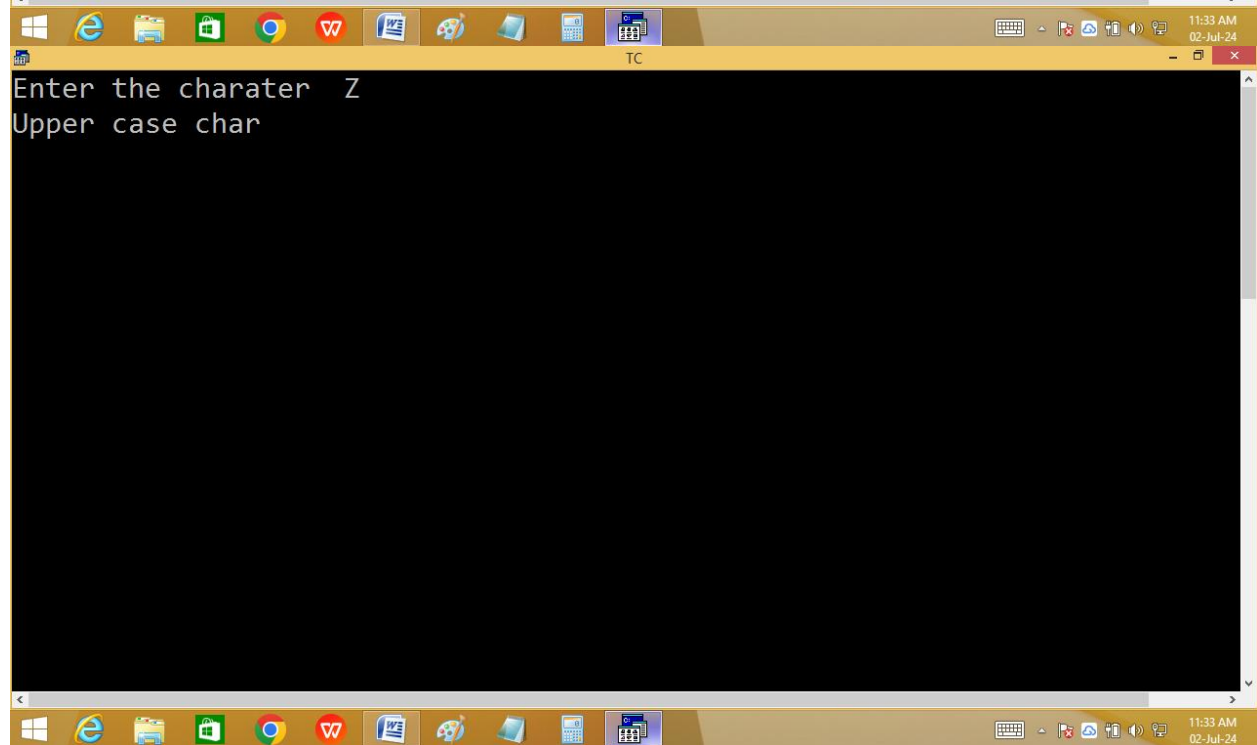
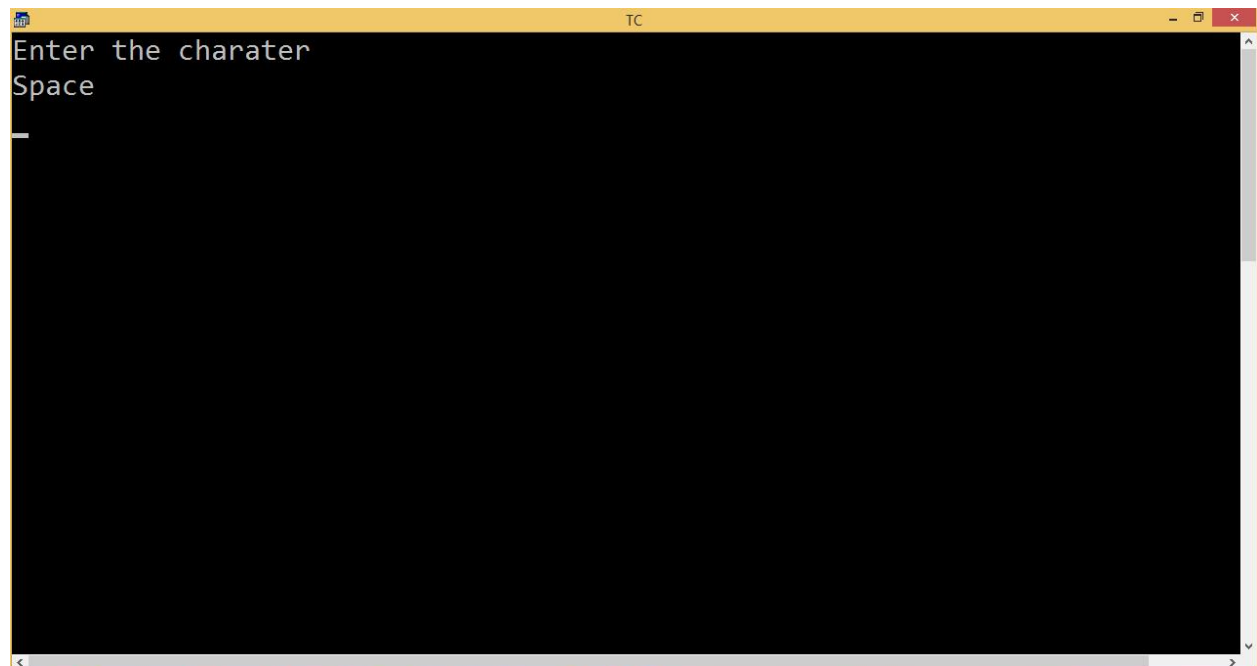
The screenshot displays the Turbo C++ (TC) IDE. The top window shows the source code of a C program. The code includes headers for `stdio.h`, `conio.h`, and `ctype.h`. The `main` function declares a `char ch`, clears the screen with `clrscr()`, and prompts the user to "Enter the charater ". It then uses a series of `if` statements with predefined functions (`islower`, `isupper`, `isdigit`, `isspace`) to check the character and print the appropriate message. The `getch()` function is used to pause the program before exiting.

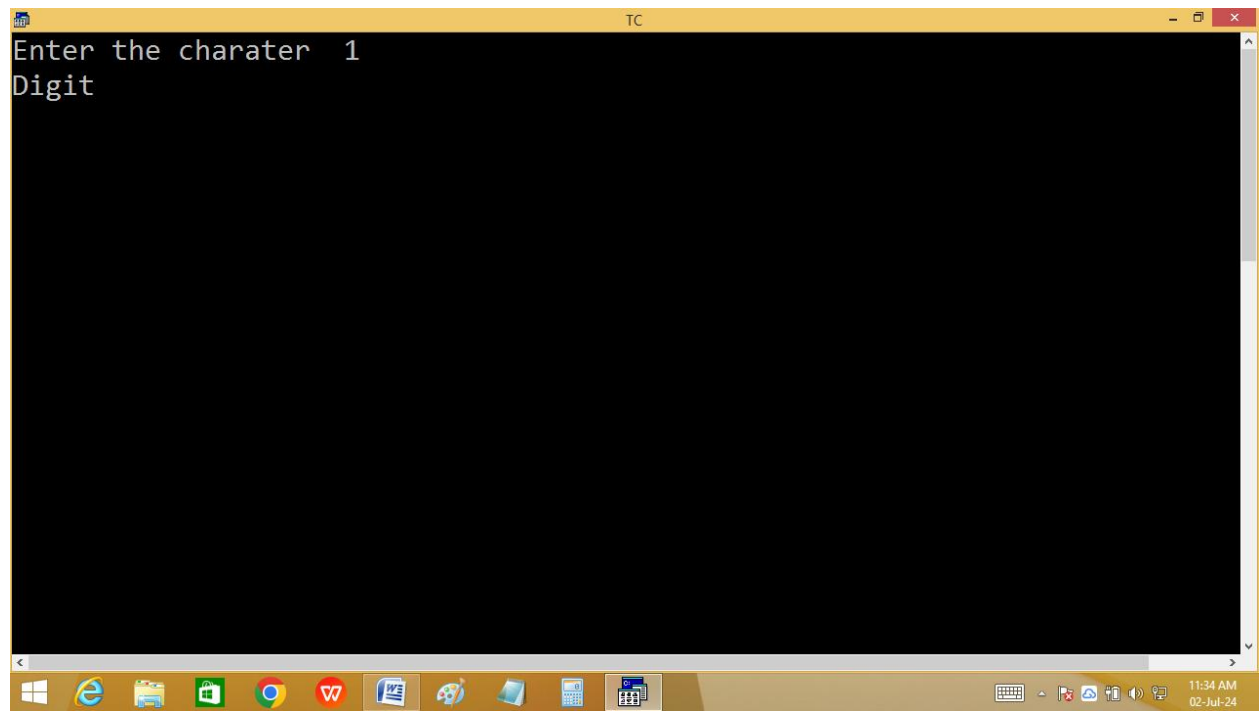
```
Line 3 Col 18 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater "); scanf("%c",&ch);
if(islower(ch)) puts("Lower case char");
else if(isupper(ch)) printf("Upper case char");
else if(isdigit(ch))puts("Digit");
else if(isspace(ch))puts("Space");
else puts("Special char");
getch();
}
```

The bottom window shows the program's execution. It displays the prompt "Enter the charater " followed by the user input 'd'. The program then outputs "Lower case char".

```
Enter the charater d
Lower case char
```





The screenshot displays the Turbo C++ (TC) IDE. The top window shows the source code for a C program that classifies a character entered by the user. The code includes headers for `stdio.h`, `conio.h`, and `ctype.h`. The `main` function prompts the user to enter a character and then checks if it is a lowercase letter, uppercase letter, digit, space, or special character using the `islower`, `isupper`, `isdigit`, `isspace`, and `isalpha` functions. The bottom window shows the program's execution: the prompt "Enter the charater U" is displayed, and the output "Upper case char" is shown.

```
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 43 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater "); ch=getchar();
if(islower(ch)) puts("Lower case char");
else if(isupper(ch)) printf("Upper case char");
else if(isdigit(ch))puts("Digit");
else if(isspace(ch))puts("Space");
else puts("Special char");
getch();
}
```

Enter the charater U
Upper case char

getch()	getche()	getchar()
Reads single char	Reads single char	Reads single char
Entered char is not visible	char is visible	char is visible

Not waiting for enter key	Not waiting for enter key	Waiting for enter key
Belongs to conio.h	Belongs to conio.h	Belongs to stdio.h
char not changeable	char not changeable	char changeable

Note: All the above functions returns ASCII value(int) of reading character.

isupper(), islower(), isdigit(), isspace():

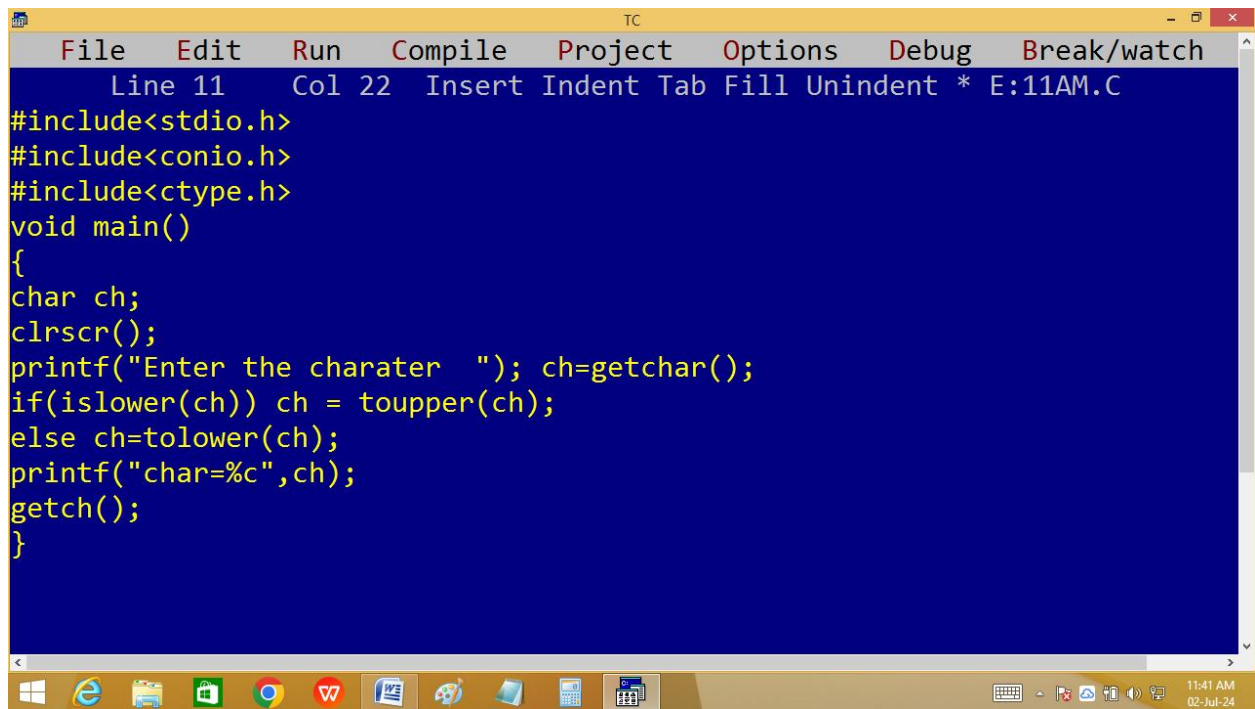
They are used to check the given character is upper / lower / digit / space.

tolower(), toupper(): They are used to convert the character from upper case to lower and lower to upper.

All these functions / **macros** available in **<ctype.h>**

Lower to upper / upper to lower:

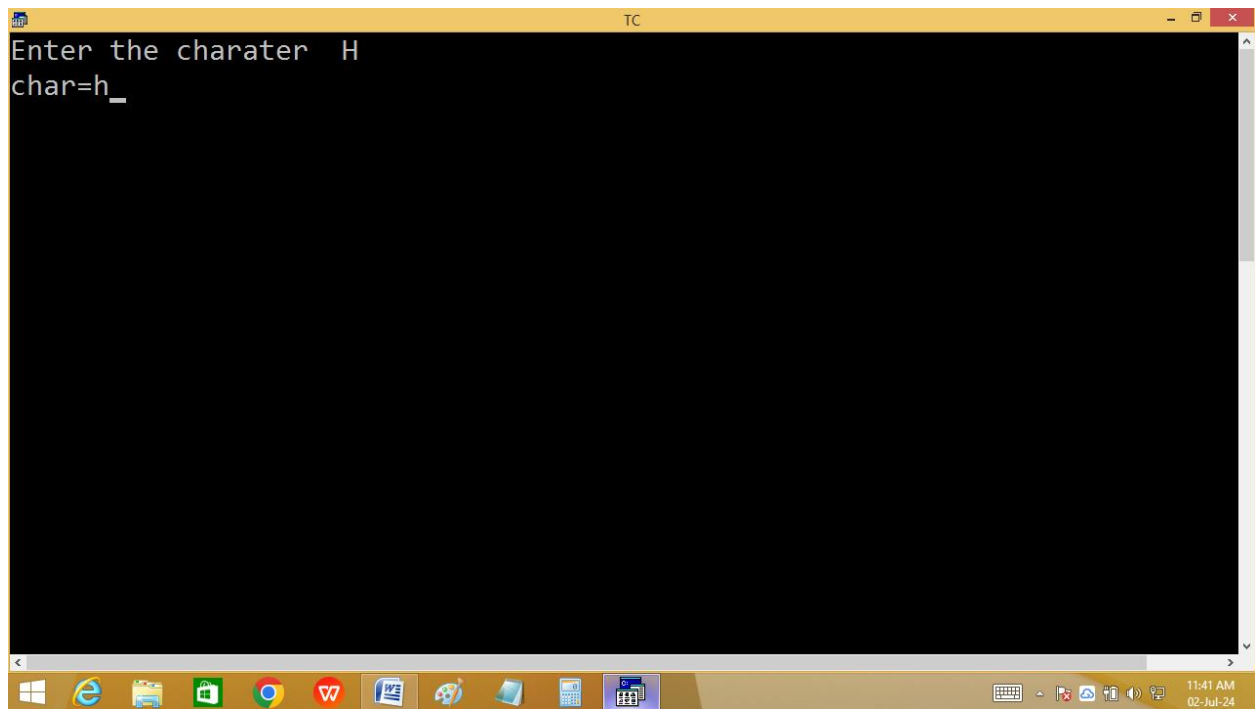
Using predefined functions:



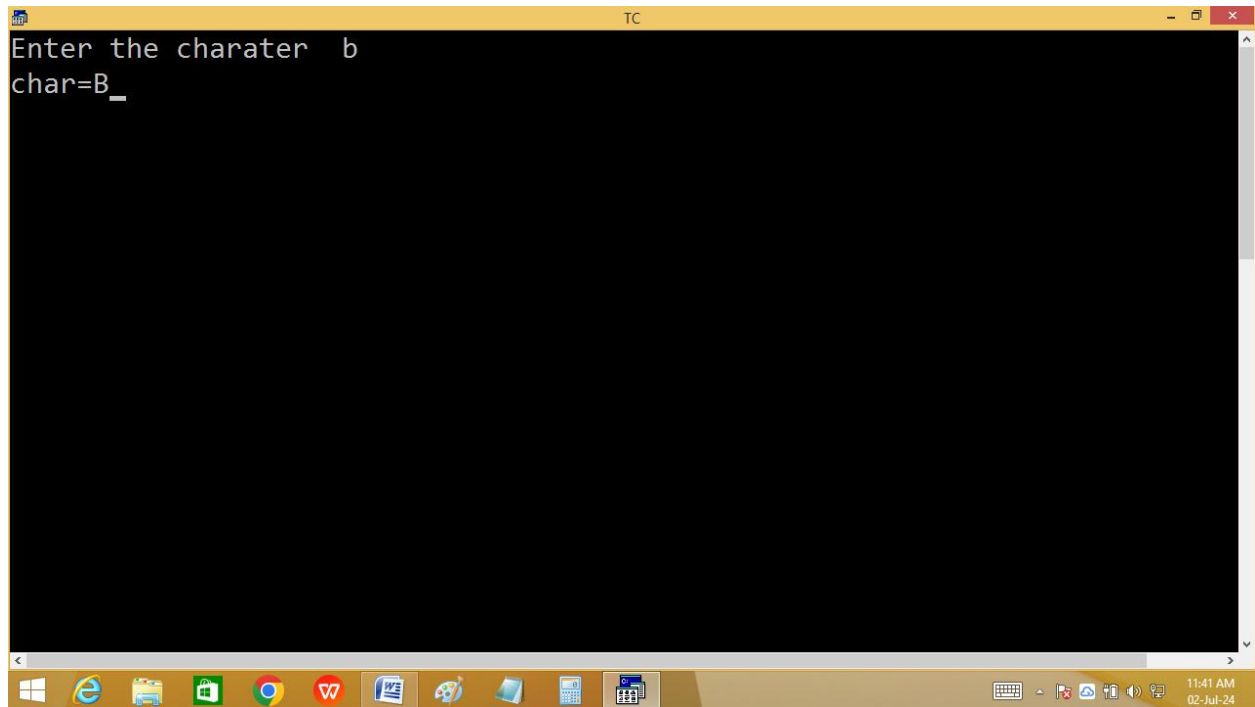
The screenshot shows the Turbo C++ (TC) IDE with a menu bar (File, Edit, Run, Compile, Project, Options, Debug, Break/watch) and a status bar (Line 11, Col 22, Insert Indent Tab Fill Unindent * E:11AM.C). The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater "); ch=getchar();
if(islower(ch)) ch = toupper(ch);
else ch=tolower(ch);
printf("char=%c",ch);
getch();
}
```

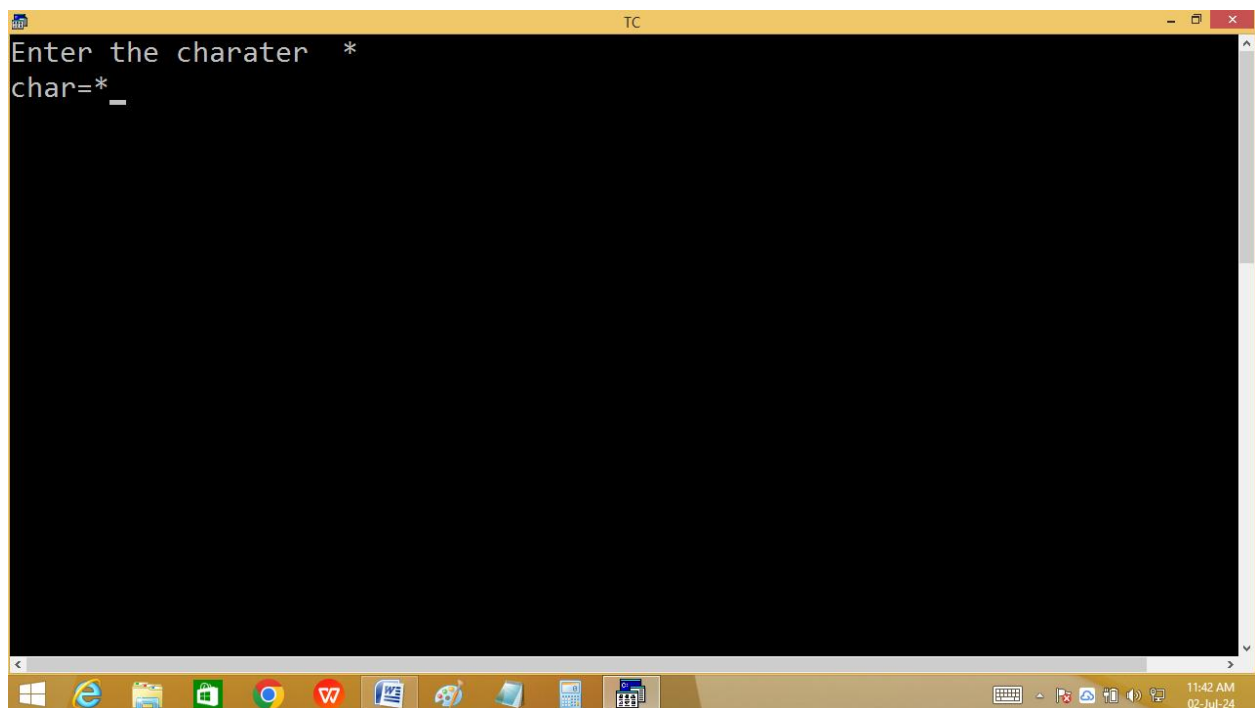
The Windows taskbar at the bottom shows the Start button and several application icons, including Internet Explorer, File Explorer, and various office applications. The system clock in the bottom right corner displays 11:41 AM on 02-Jul-24.



The screenshot shows the Turbo C++ (TC) IDE during program execution. The output window displays the text "Enter the charater H" followed by "char=h_". The cursor is positioned at the end of the second line of output. The IDE's menu bar and status bar are visible at the top, and the Windows taskbar is at the bottom, showing the same system clock as the first screenshot (11:41 AM on 02-Jul-24).

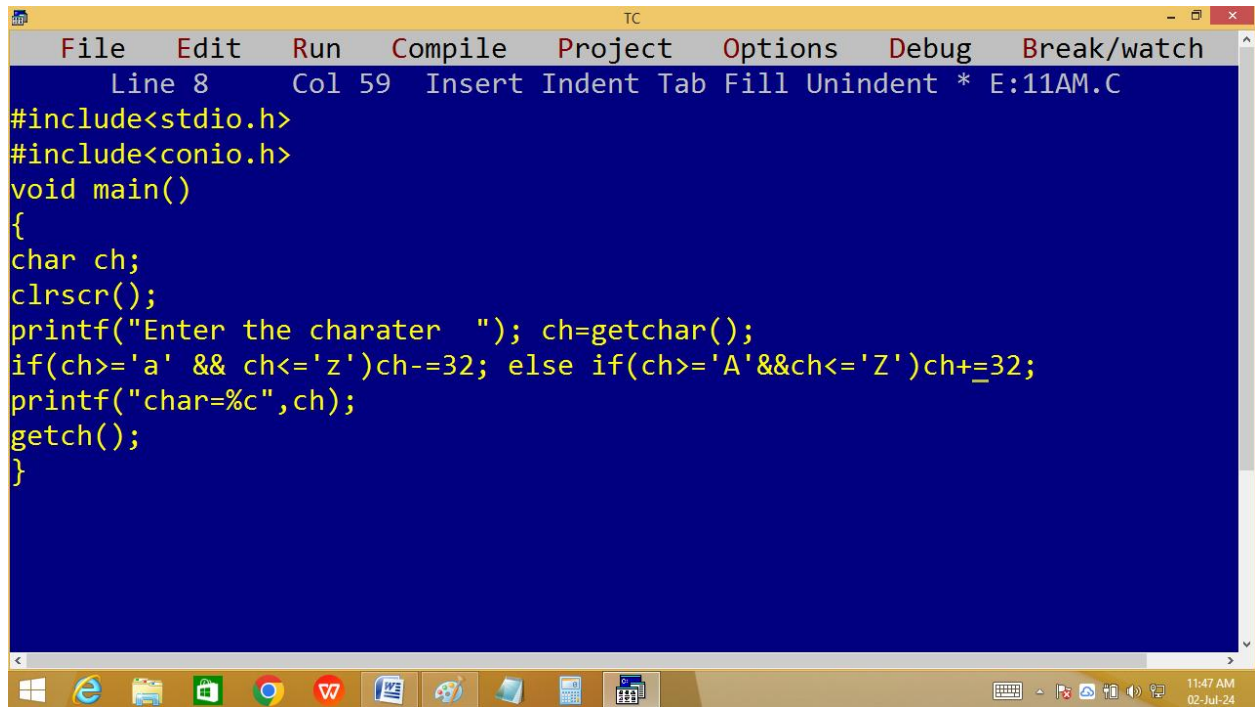


```
Enter the charater b
char=B_
```



```
Enter the charater *
char=*_
```


Without using predefined functions:



The screenshot shows the Turbo C++ (TC) IDE with a blue background. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the top indicates 'Line 8 Col 59 Insert Indent Tab Fill Unindent * E:11AM.C'. The code is as follows:

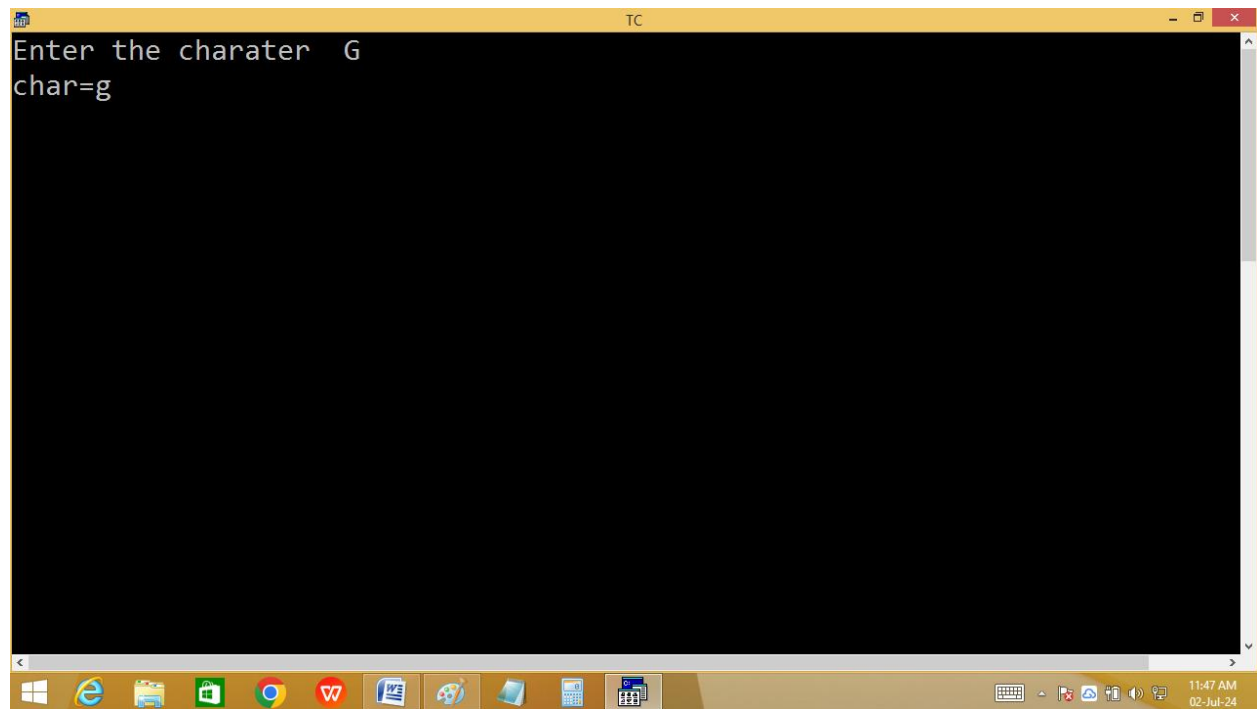
```
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
clrscr();
printf("Enter the charater  "); ch=getchar();
if(ch>='a' && ch<='z')ch-=32; else if(ch>='A'&&ch<='Z')ch+=_32;
printf("char=%c",ch);
getch();
}
```

The Windows taskbar at the bottom shows various application icons and the system clock displaying 11:47 AM on 02-Jul-24.

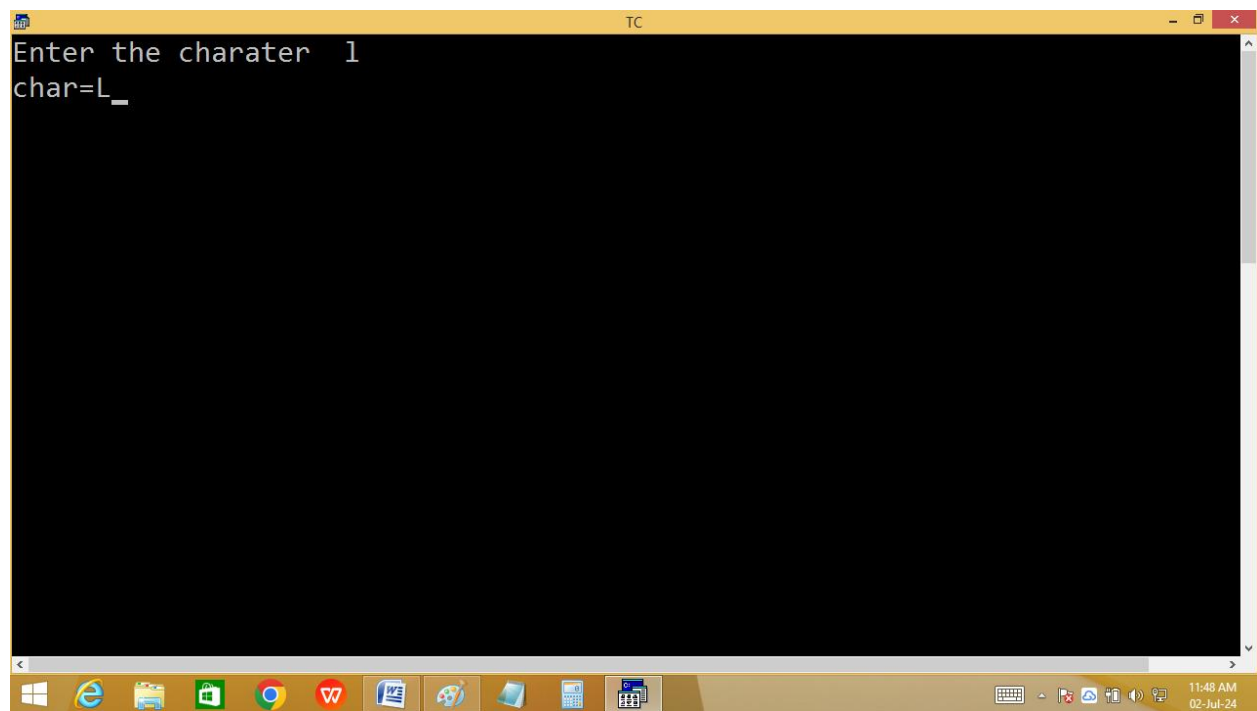


The screenshot shows the Turbo C++ (TC) IDE with a black background, displaying the output of the program. The text 'Enter the charater 5' and 'char=5' is visible on the first two lines. The rest of the IDE window is empty.


```
TC
Enter the charater  G
char=g
```

A screenshot of a Turbo C++ (TC) IDE window. The window has a yellow title bar with the text "TC" and standard Windows window controls. The main editing area is black with white text. It shows two lines of code: "Enter the charater G" and "char=g". The taskbar at the bottom shows various application icons and the system clock indicating 11:47 AM on 02-Jul-24.

```
TC
Enter the charater  l
char=L_
```

A screenshot of a Turbo C++ (TC) IDE window, similar to the one above. The window title is "TC". The main editing area shows two lines of code: "Enter the charater l" and "char=L_". The taskbar at the bottom shows the same application icons and system clock indicating 11:48 AM on 02-Jul-24.

ELECTRICITY BILL GENERATION

DOMESTIC SLAB SYSTEM

UNITS	UNIT PRICE
1-50	1.45
51-100	2.8
101-200	3.05
201-300	4.75
301-500	6.00
>500	6.25

$$30 * 1.45 = 43.5$$

$$80 = 50 * 1.45 + 30 * 2.8 = 156.5$$

$$180 = 50 * 1.45 + 50 * 2.8 + 80 * 3.05 = 456.5$$

$$380 = 50 * 1.45 + 50 * 2.8 + 100 * 3.05 + 100 * 4.75 + 80 * 6 = 1472.5$$

$$580 = 50 * 1.45 + 50 * 2.8 + 100 * 3.05 + 100 * 4.75 + 200 * 6 + 80 * 6.25 = 2692.5$$

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

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

```
void main()
{
long serno, pre, cur, units;

char name[30];

float amt;

clrscr();

printf("Enter service no "); scanf("%ld",&serno);

fflush(stdin);

printf("Enter consumer name "); gets(name);

printf("Enter previous month reading ");
scanf("%ld",&pre);

current:

printf("Enter current month reading ");
scanf("%ld",&cur);

if(cur<pre){puts("\aCheck current month reading");
goto current;}

units=cur-pre;

if(units<=50)amt=units*1.45;
```

```
else if(units<=100)amt=50*1.45+(units-50)*2.8;

else if(units<=200)amt=50*1.45+50*2.8+(units-
100)*3.05;

else
if(units<=300)amt=50*1.45+50*2.8+100*3.05+(units-
200)*4.75;

else
if(units<=500)amt=50*1.45+50*2.8+100*3.05+100*4.75
+(units-300)*6;

else
amt=50*1.45+50*2.8+100*3.05+100*4.75+200*6+(units
-500)*6.25;

if(amt<65) amt=65;

printf("Billed amount=%.2f",amt);

getch();

}
```

