scanf()

It is the major input function available in stdio.h

It is used to read the values at run time from user.

Syntax:

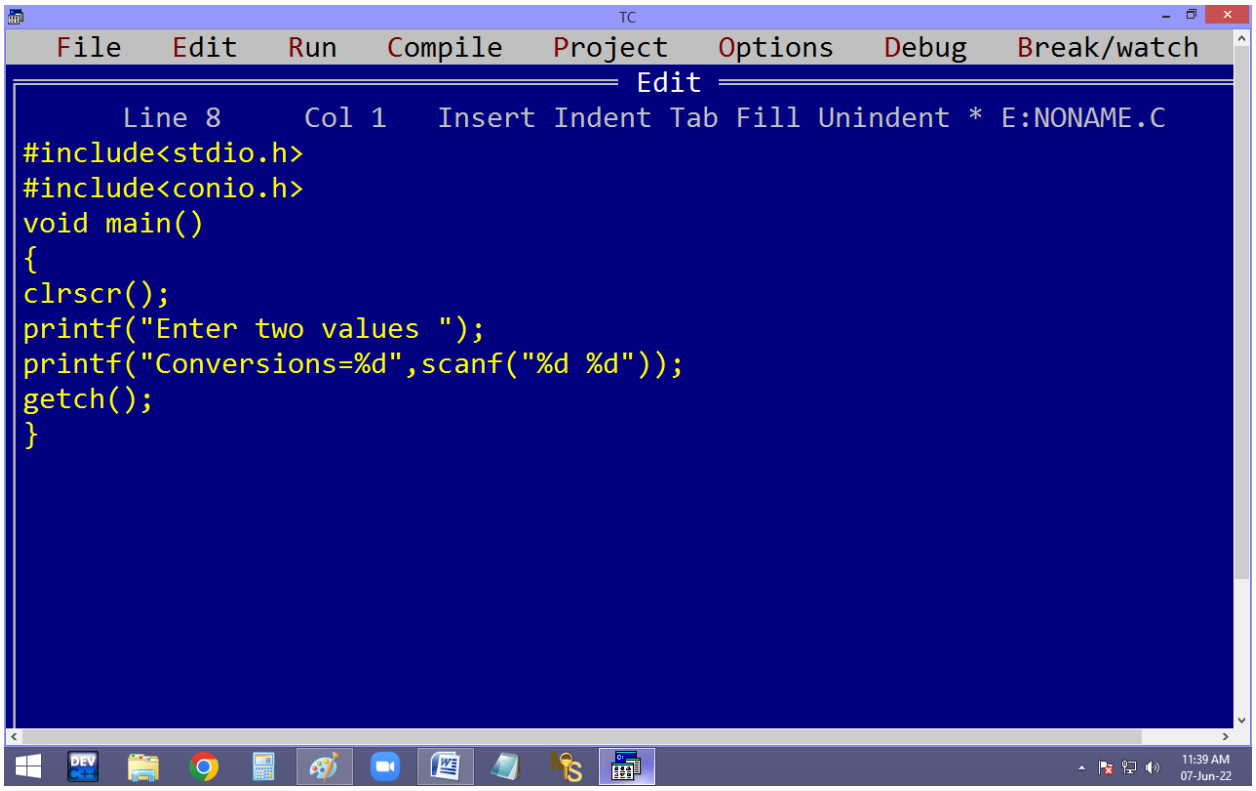
int scanf("conversion characters" , &variable, &variable,……);

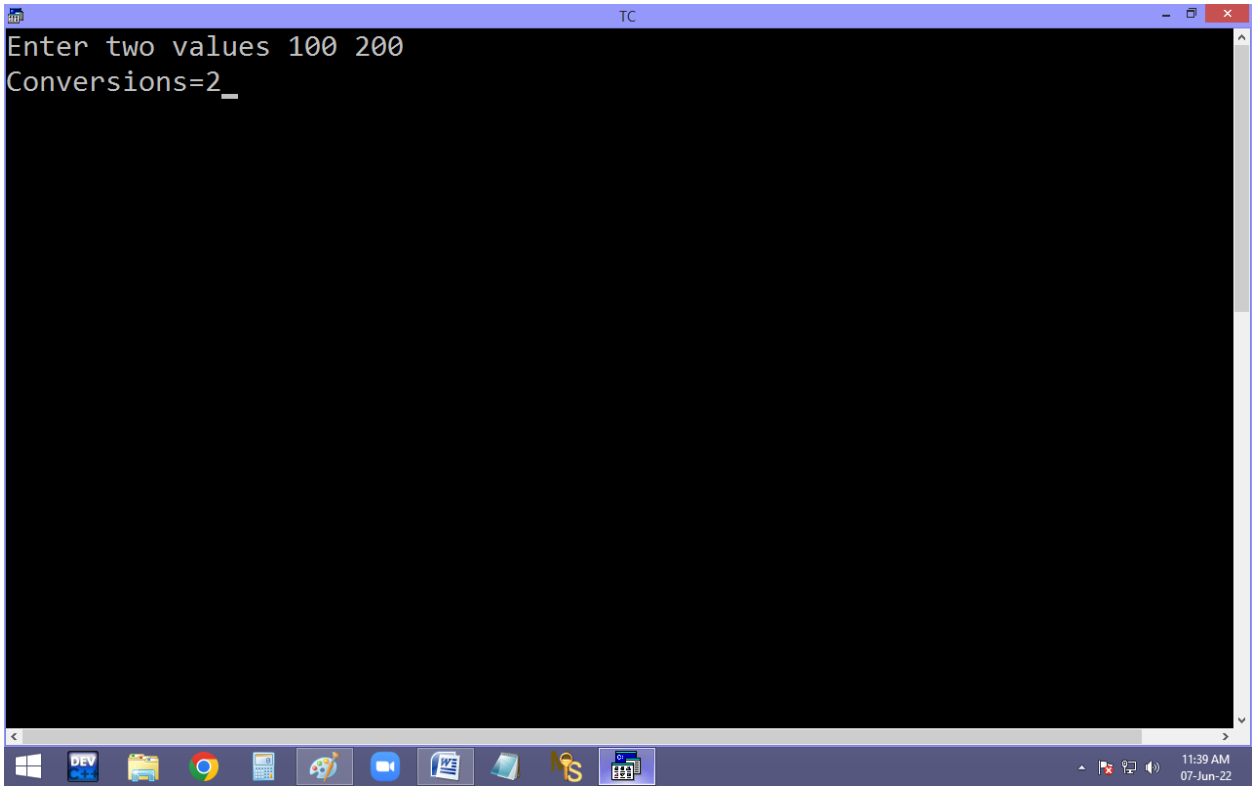
- Here scanf() returns an integer which indicates the no of conversion characters we have used in scanf().
- Generally conversion characters are the first arguments and they should be placed in " ".
- Space is optional in between the conversion characters. When comma /

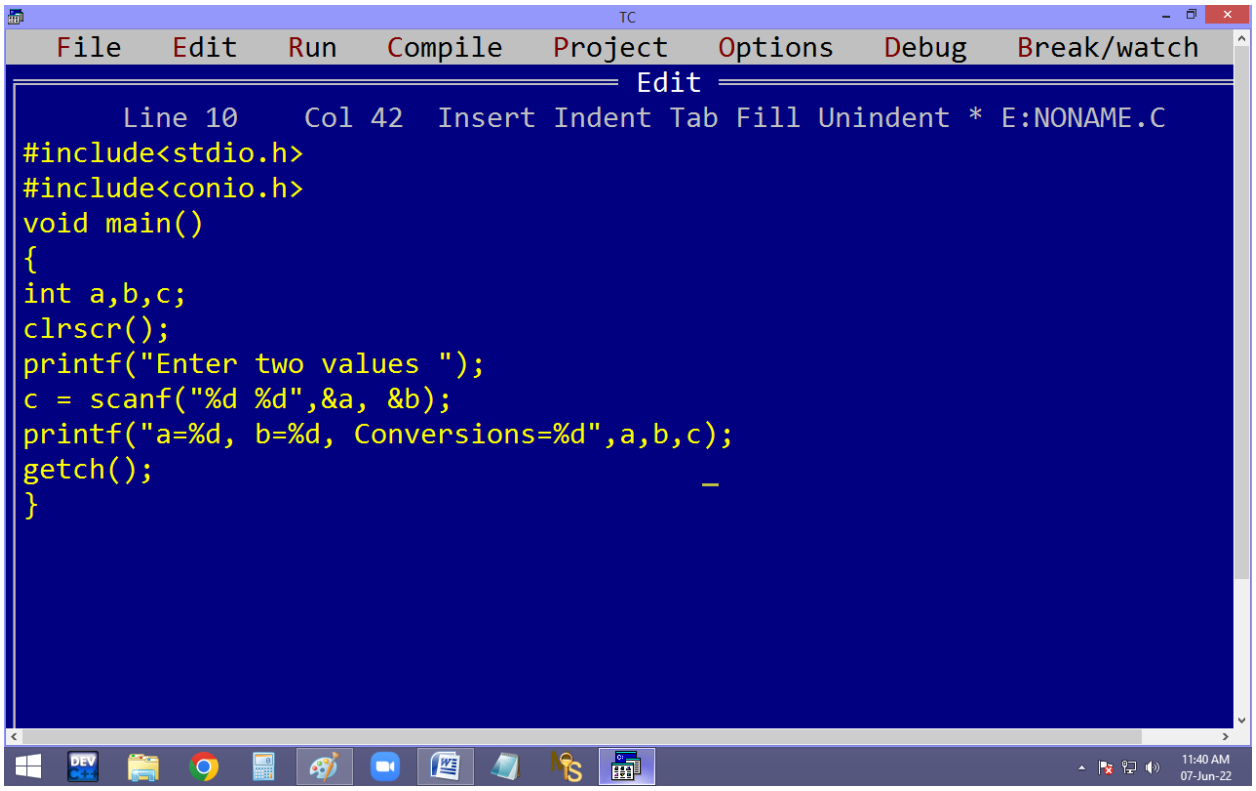
any character is entered in between conversion characters, at run time also we have to enter the same letter in between the values.

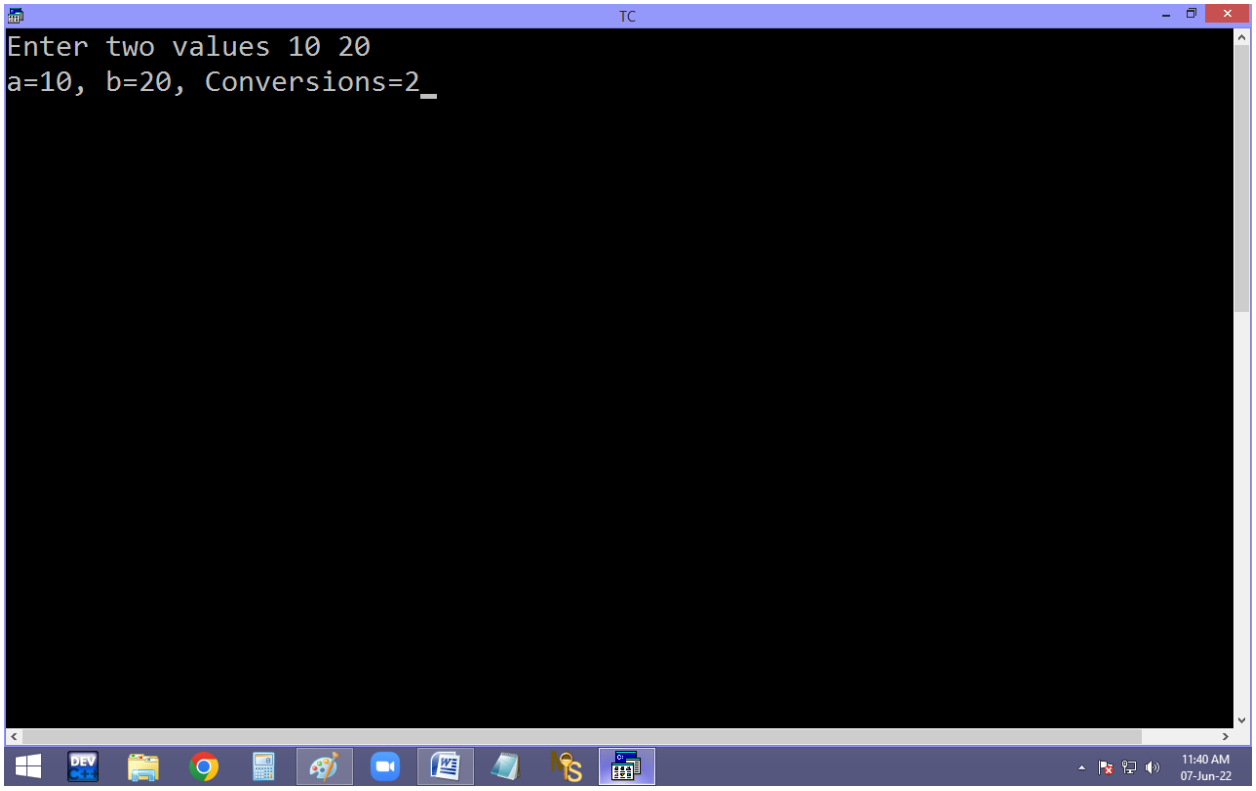
- **&** indicates address of variable. **&** is mandatory for all data types **except string** type variables.

eg. Write a program to find the no of conversion characters in scanf().

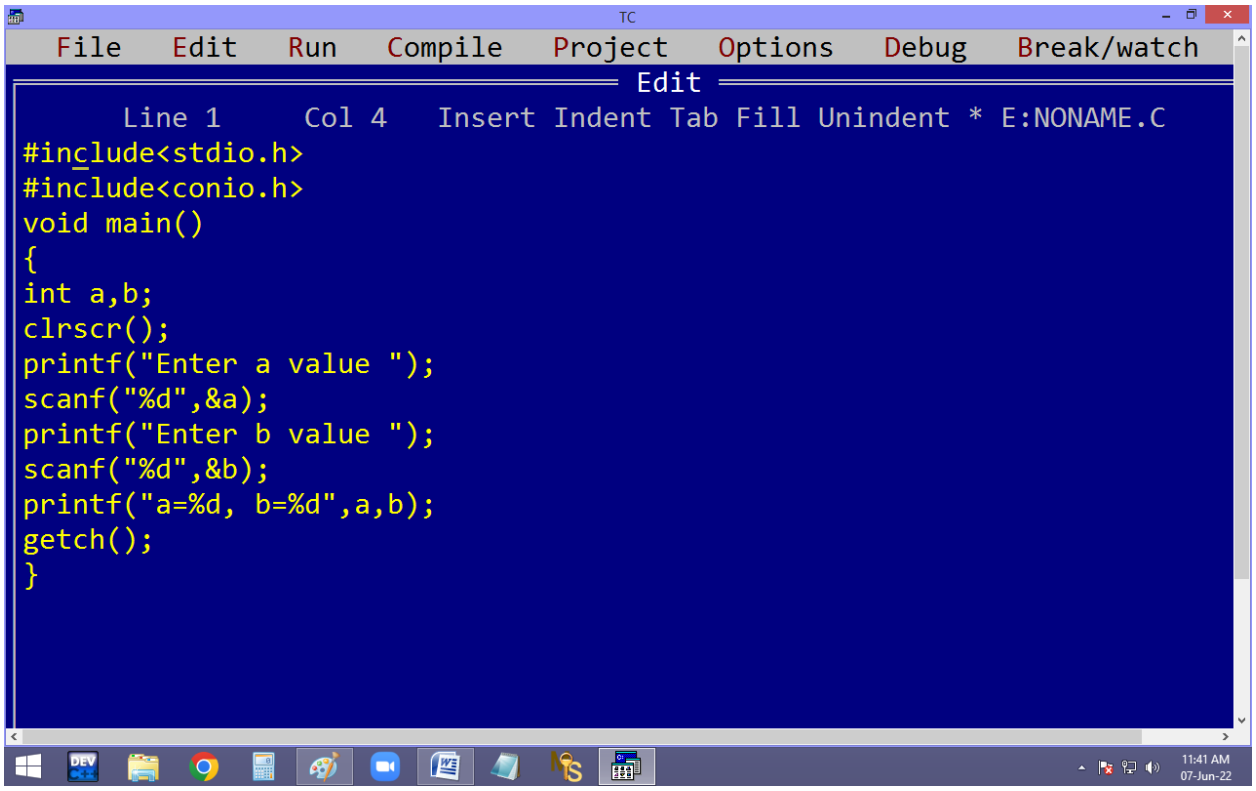

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 8 Col 1 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("Enter two values ");
printf("Conversions=%d",scanf("%d %d"));
getch();
}
11:39 AM
07-Jun-22

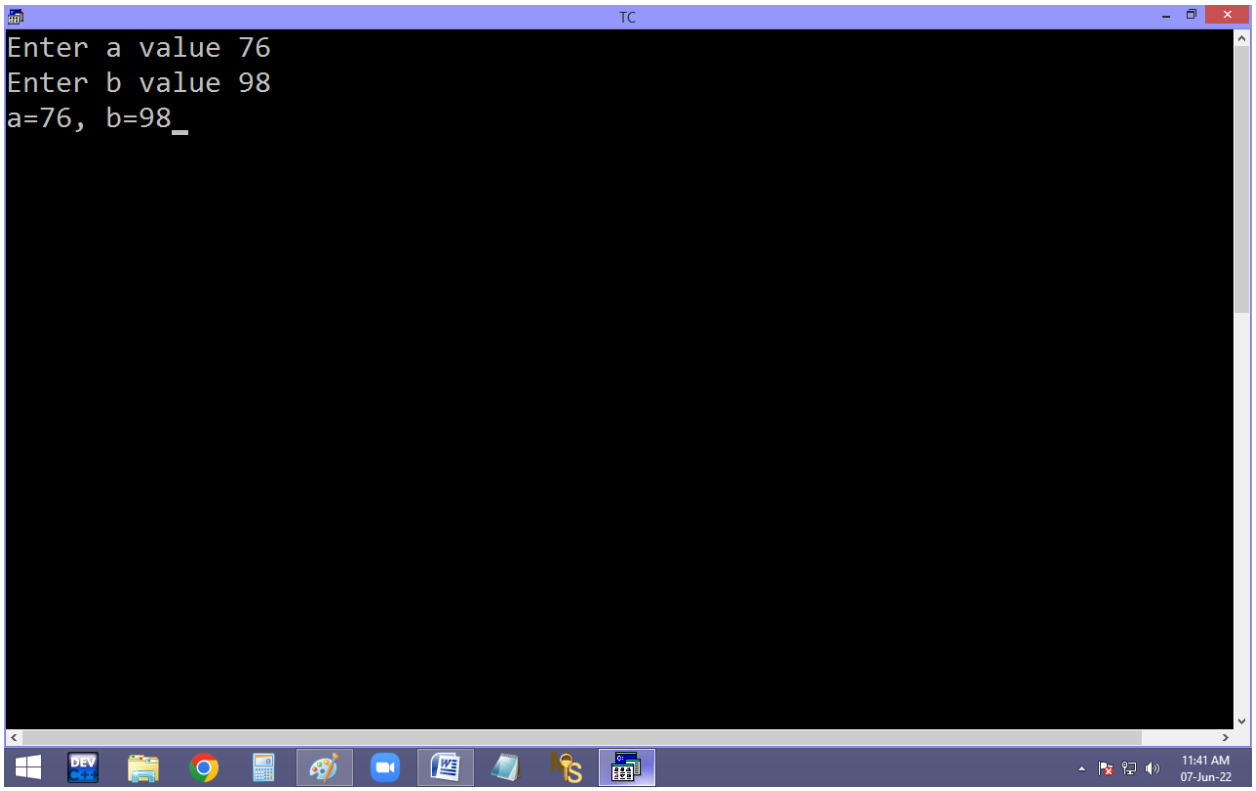

TC
Enter two values 100 200
Conversions=2
11:39 AM
07-Jun-22

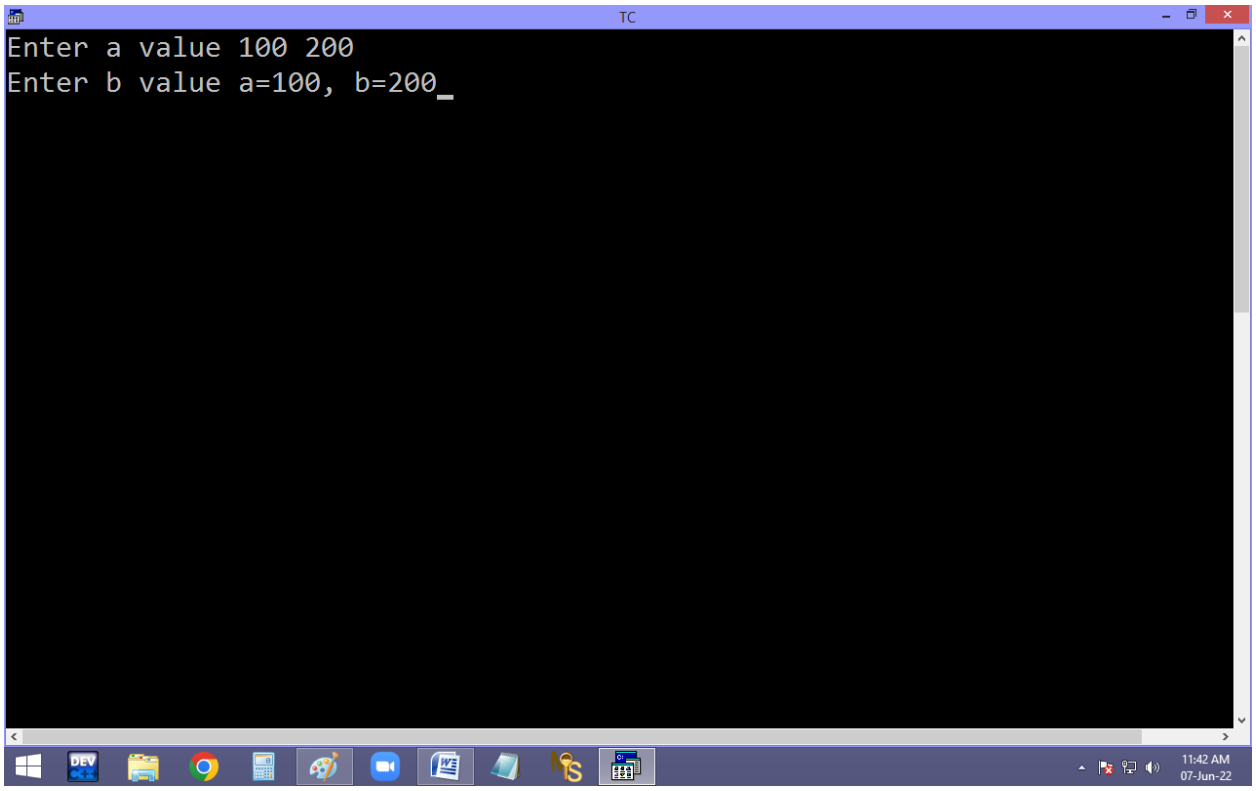

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 10 Col 42 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("Enter two values ");
c = scanf("%d %d",&a, &b);
printf("a=%d, b=%d, Conversions=%d",a,b,c);
getch();
}
11:40 AM
07-Jun-22

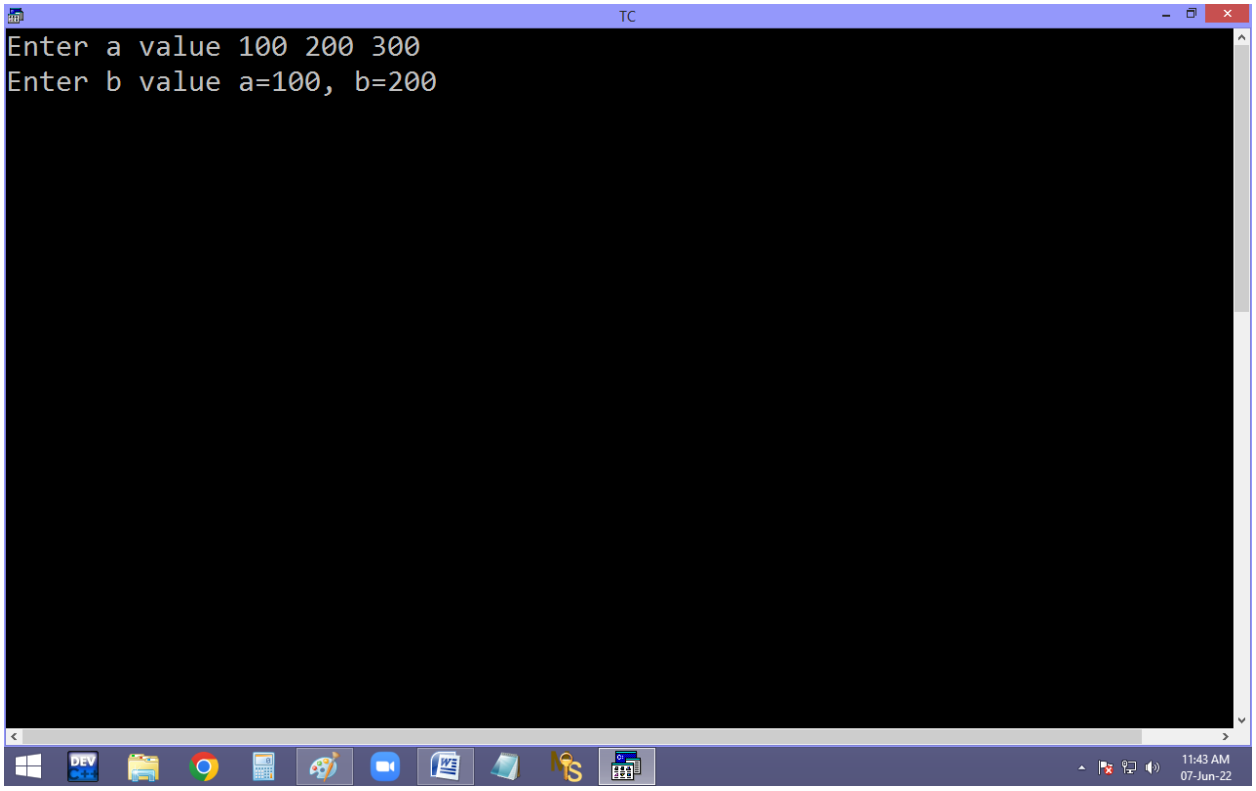

TC
Enter two values 10 20
a=10, b=20, Conversions=2
11:40 AM
07-Jun-22

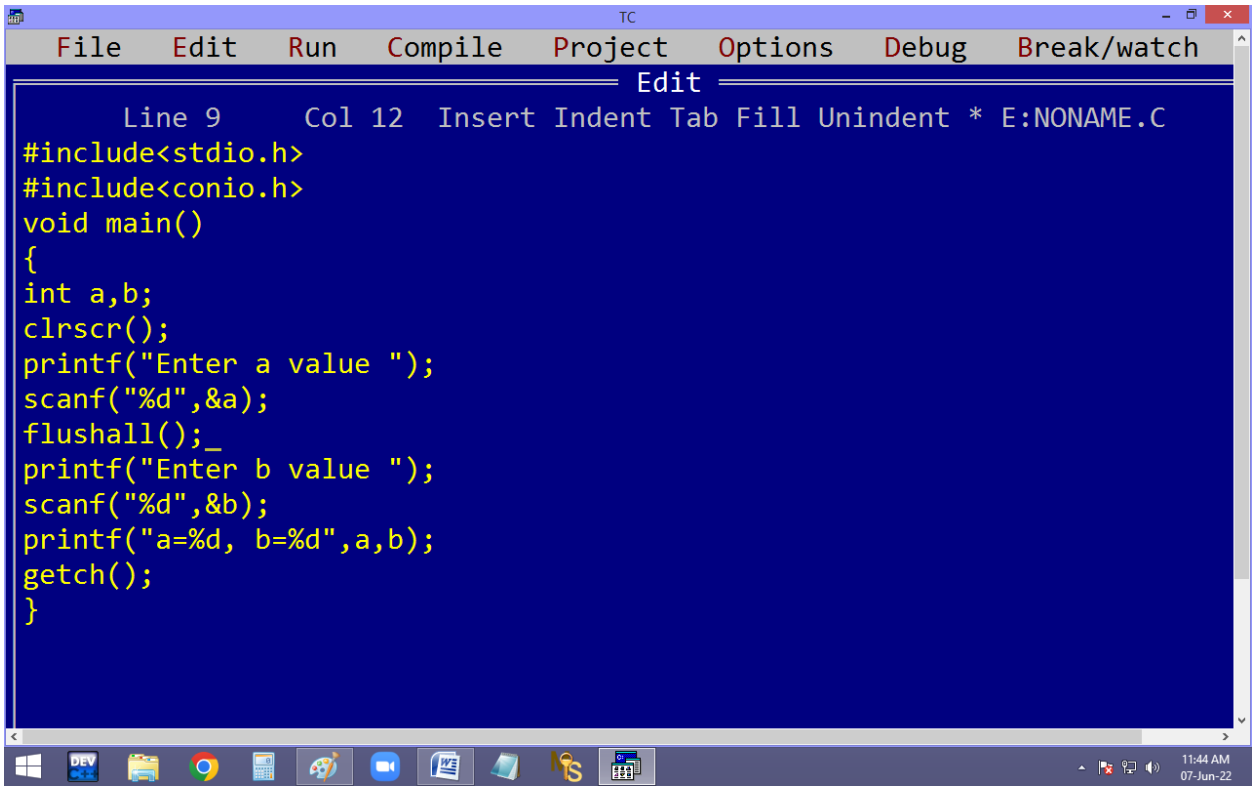
Controlling inputs in scanf():

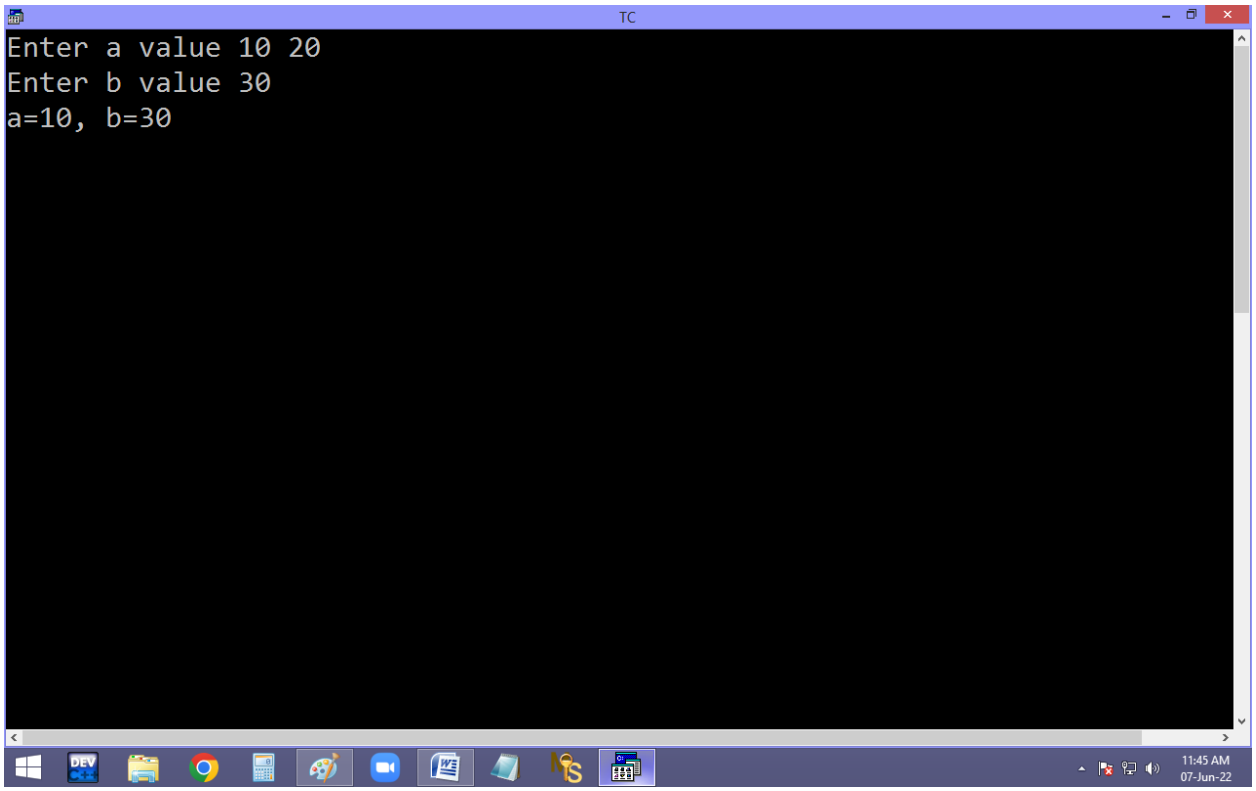

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 1 Col 4 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a value ");
scanf("%d",&a);
printf("Enter b value ");
scanf("%d",&b);
printf("a=%d, b=%d",a,b);
getch();
}
11:41 AM
07-Jun-22

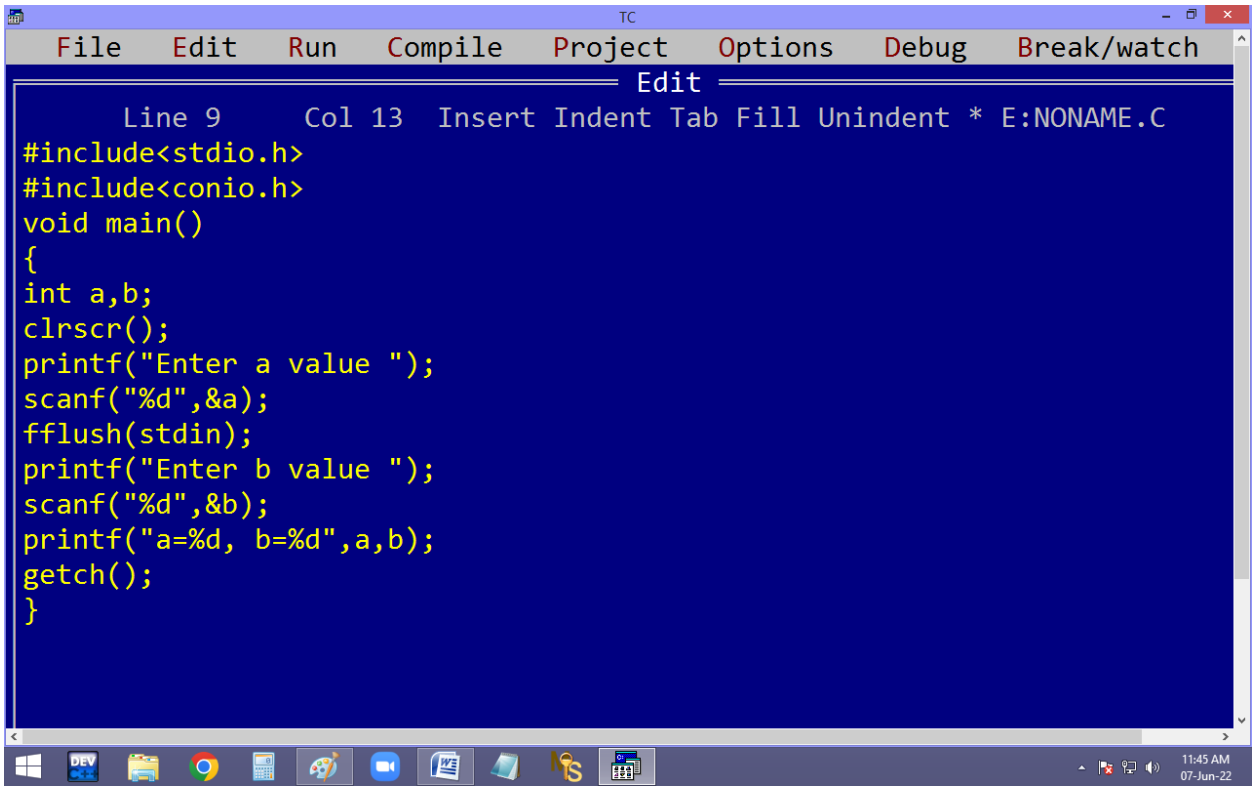

TC
Enter a value 76
Enter b value 98
a=76, b=98
11:41 AM
07-Jun-22

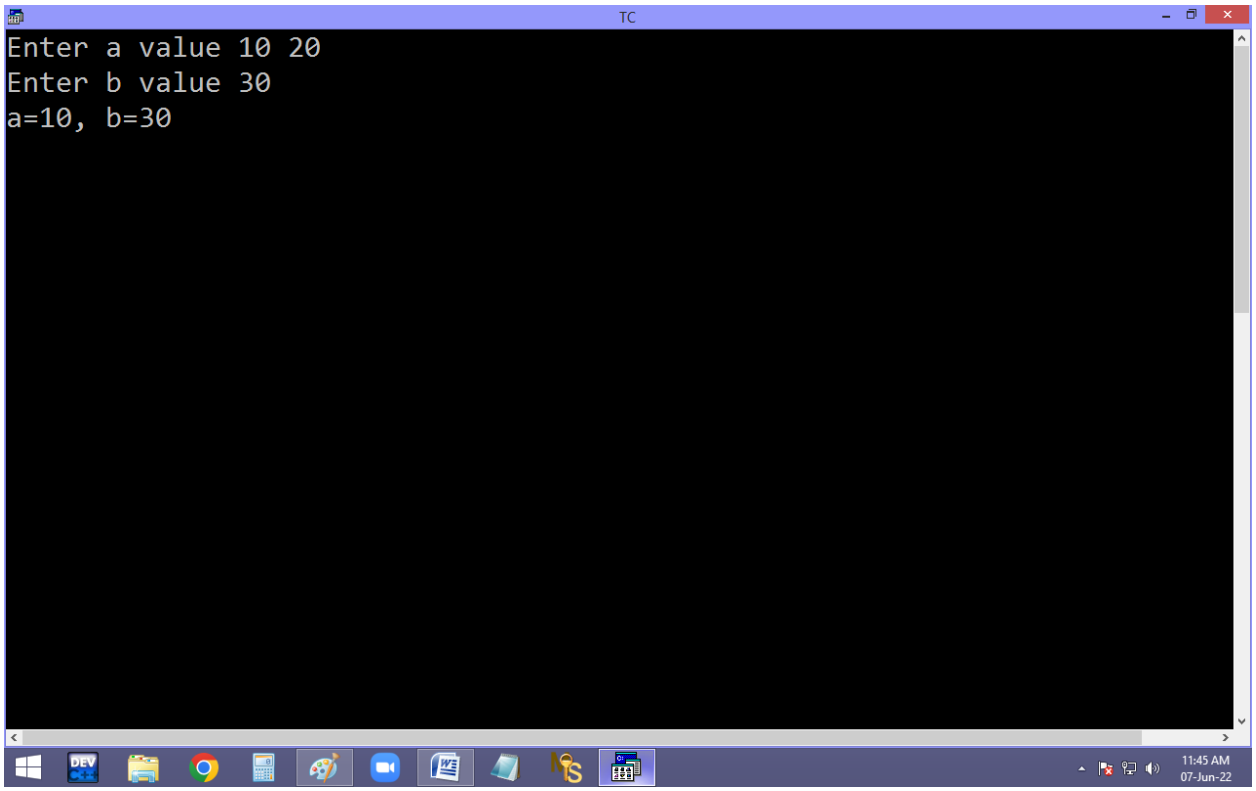

TC
Enter a value 100 200
Enter b value a=100, b=200
11:42 AM
07-Jun-22

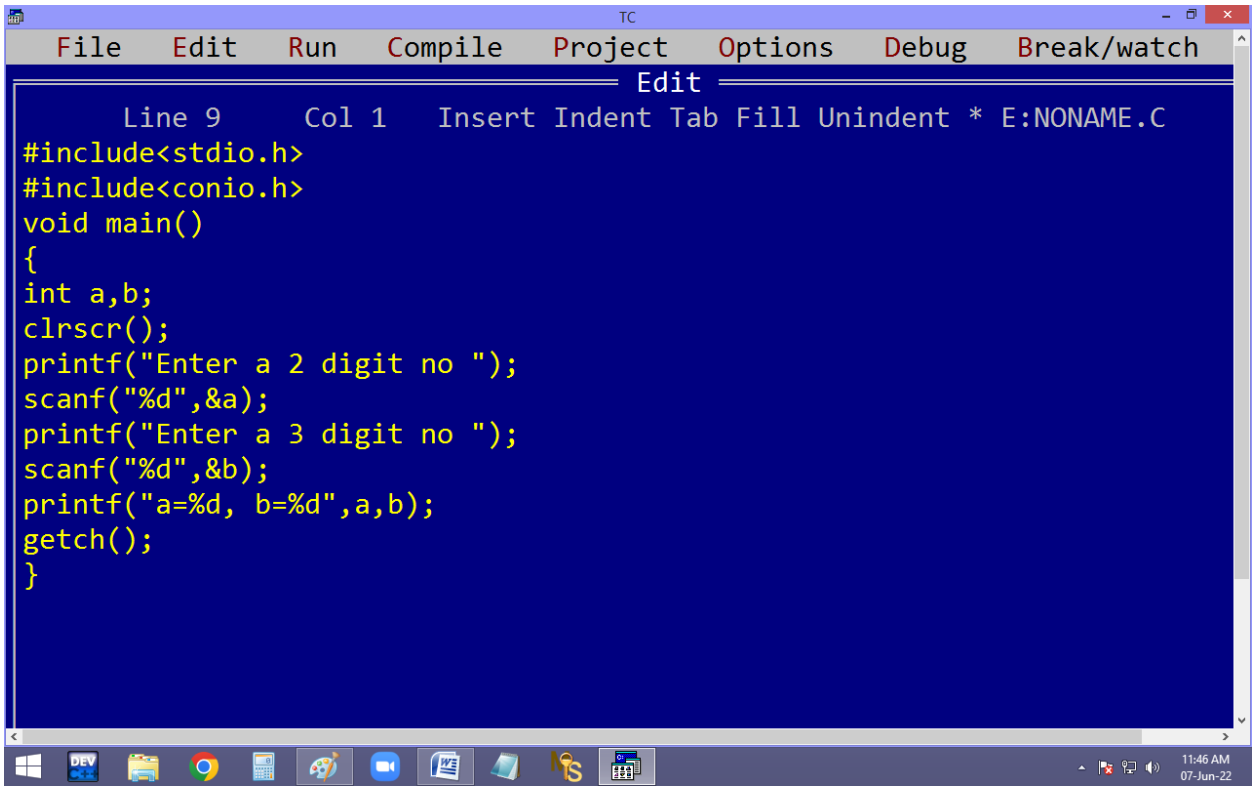

TC
Enter a value 100 200 300
Enter b value a=100, b=200
11:43 AM
07-Jun-22

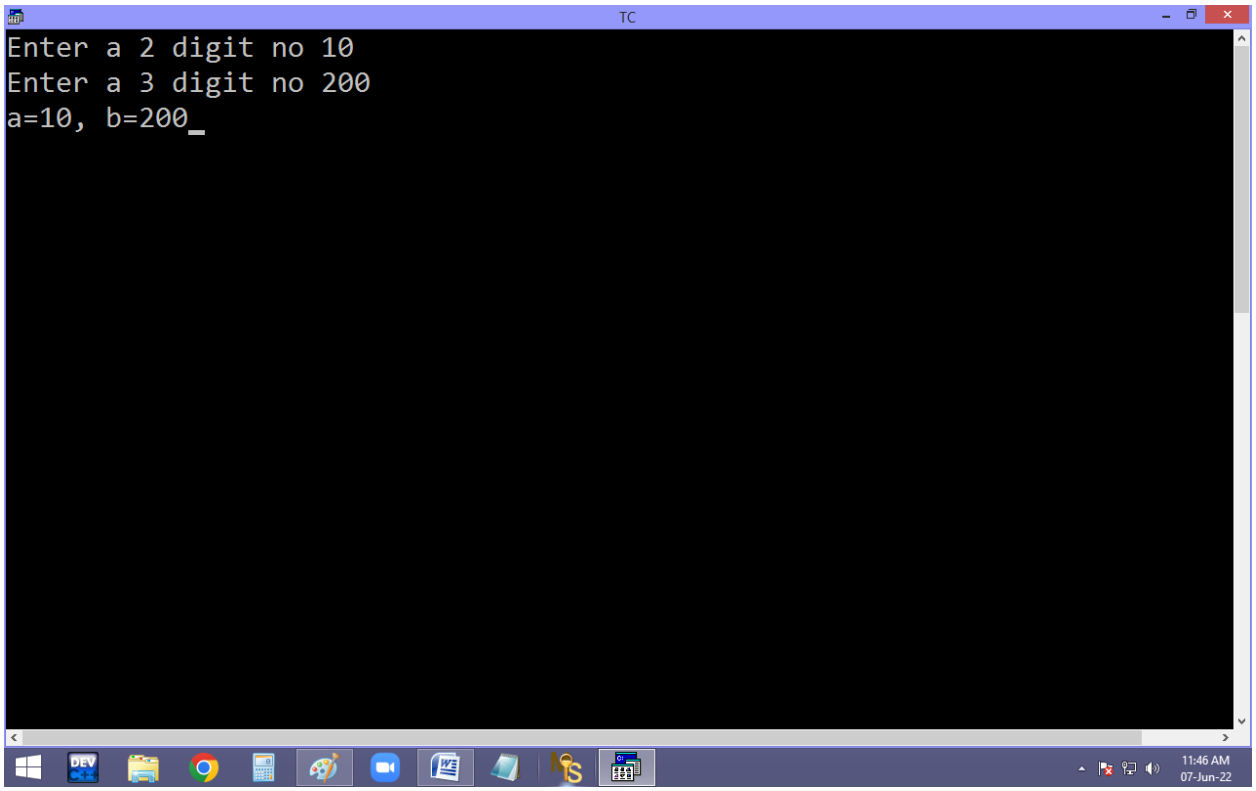

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 9 Col 12 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a value ");
scanf("%d",&a);
flushall();
printf("Enter b value ");
scanf("%d",&b);
printf("a=%d, b=%d",a,b);
getch();
}
11:44 AM
07-Jun-22

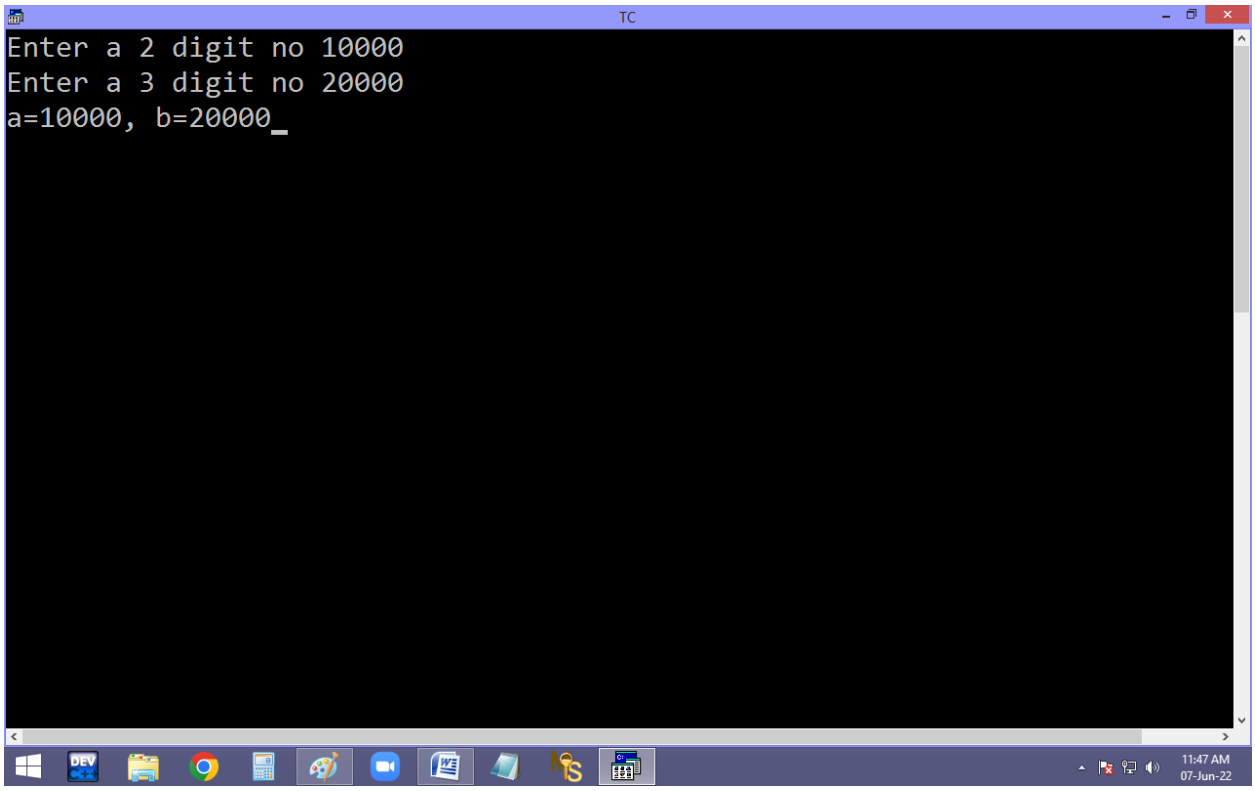

TC
Enter a value 10 20
Enter b value 30
a=10, b=30
11:45 AM
07-Jun-22

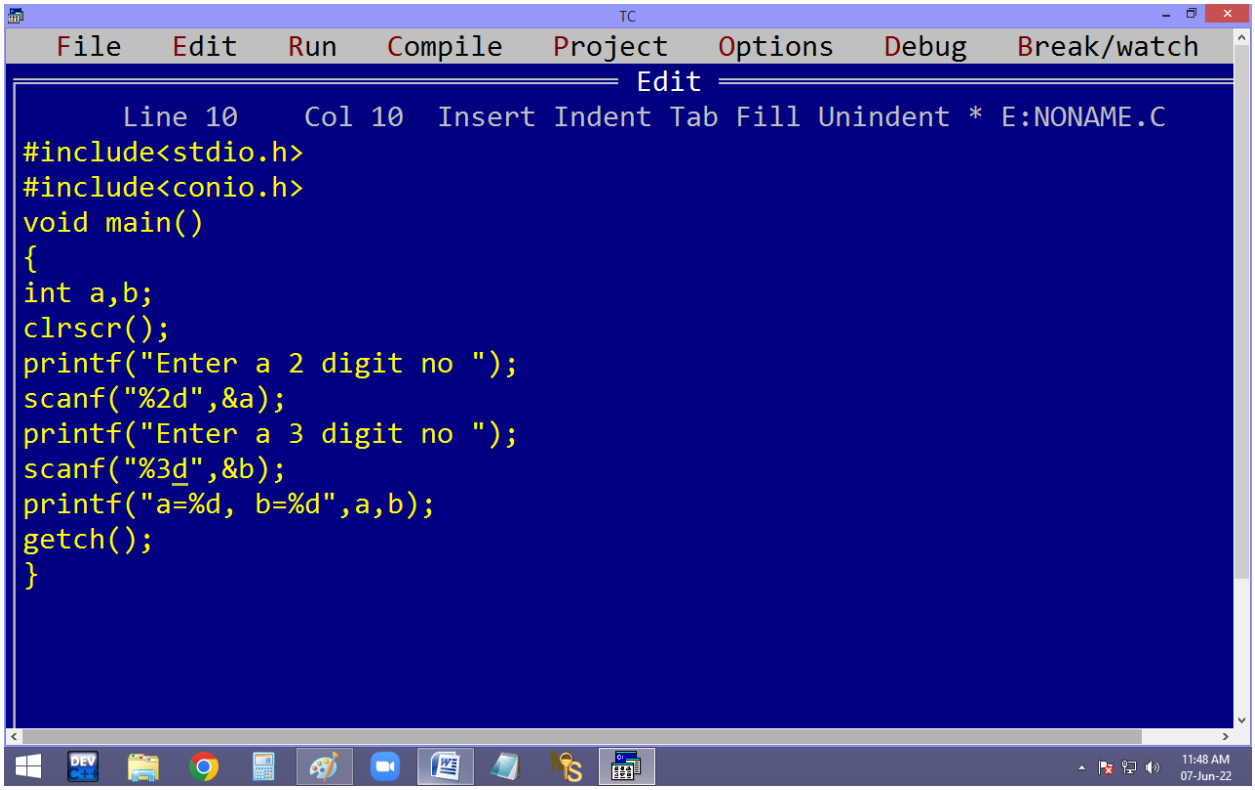

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 9 Col 13 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a value ");
scanf("%d",&a);
fflush(stdin);
printf("Enter b value ");
scanf("%d",&b);
printf("a=%d, b=%d",a,b);
getch();
}

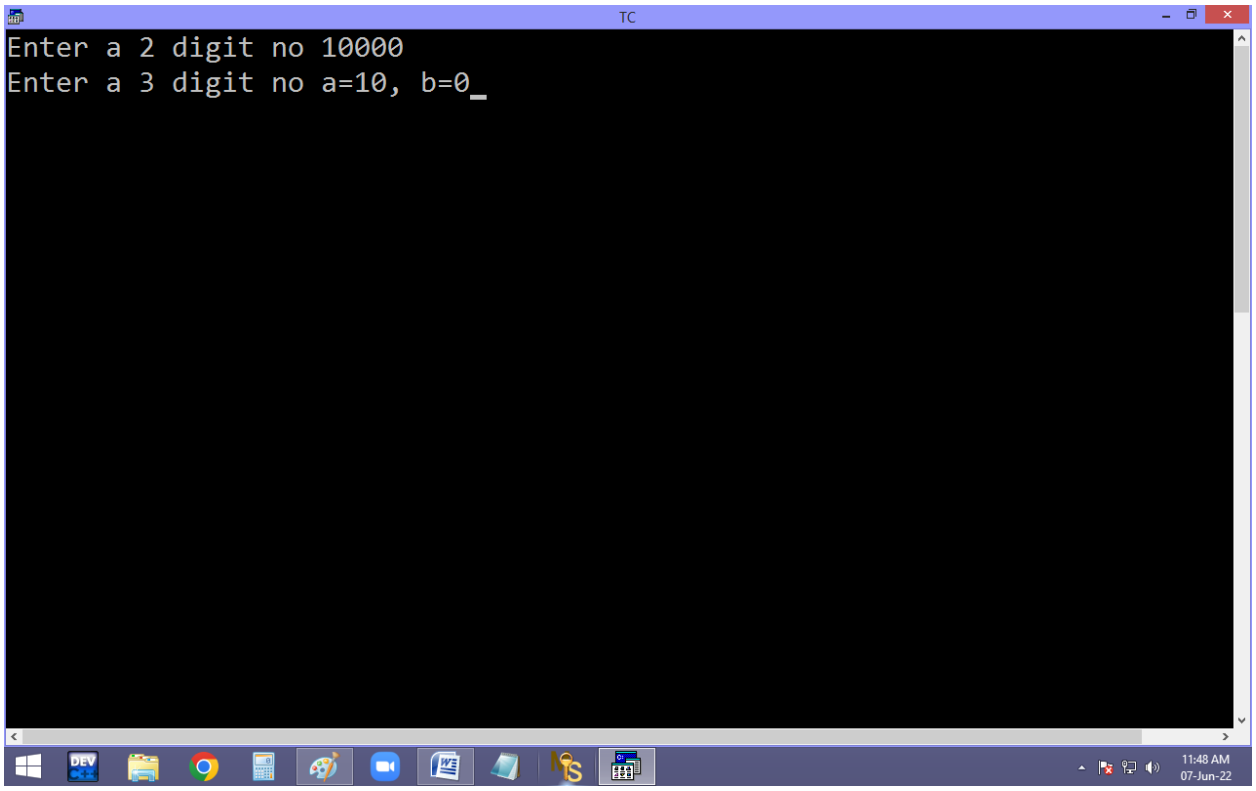

TC
Enter a value 10 20
Enter b value 30
a=10, b=30

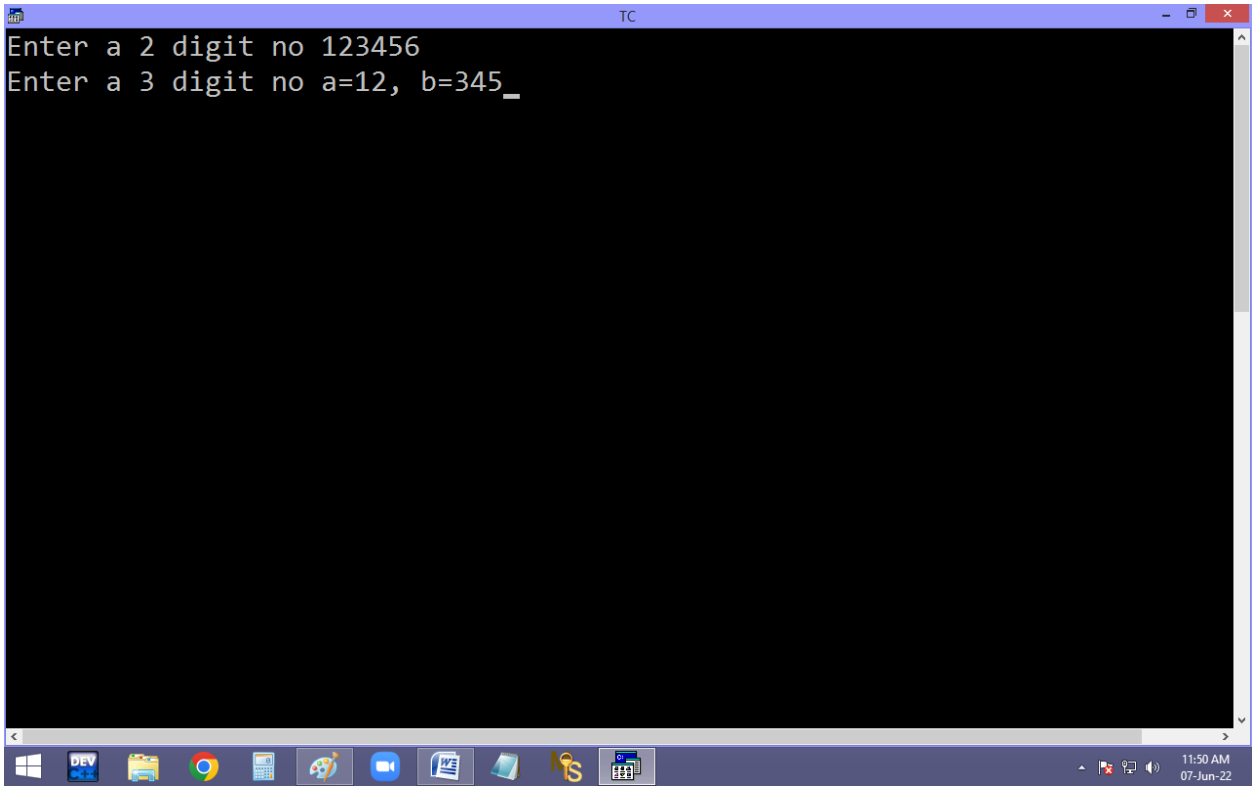

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 9 Col 1 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a 2 digit no ");
scanf("%d",&a);
printf("Enter a 3 digit no ");
scanf("%d",&b);
printf("a=%d, b=%d",a,b);
getch();
}
11:46 AM
07-Jun-22

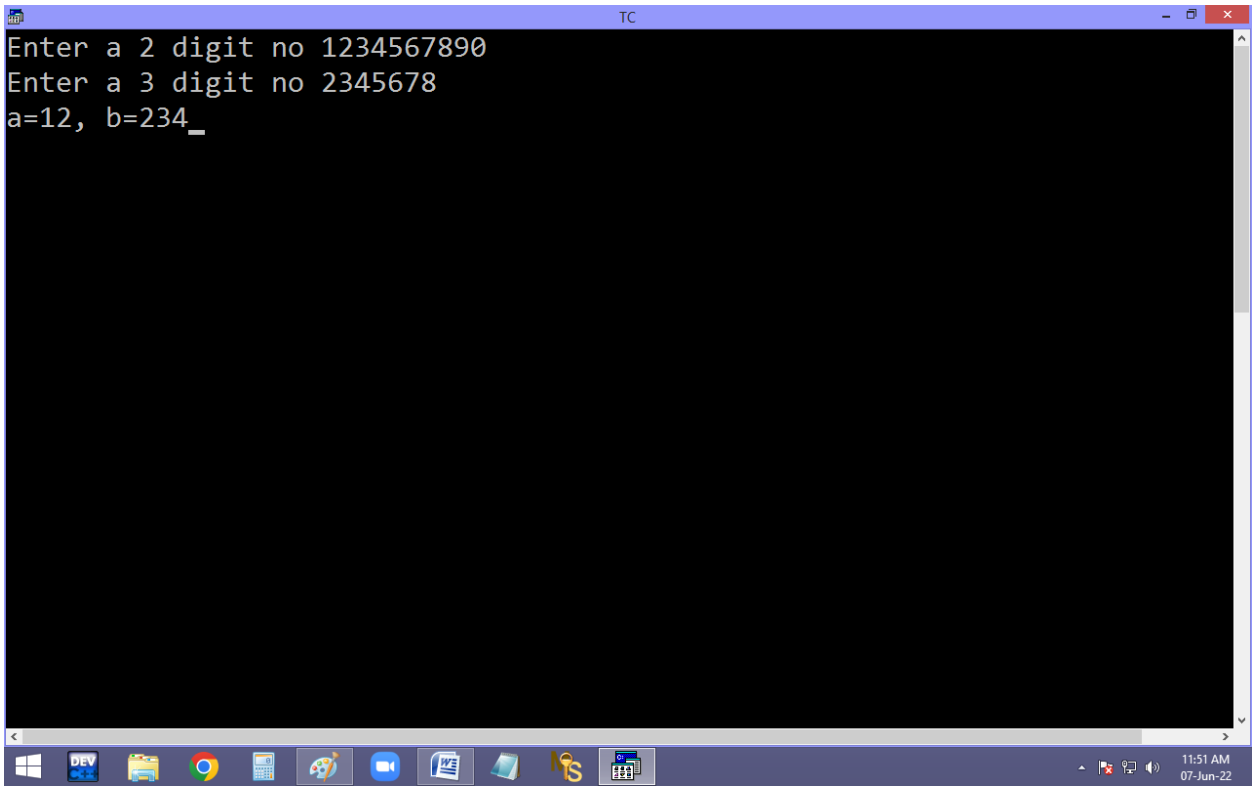

TC
Enter a 2 digit no 10
Enter a 3 digit no 200
a=10, b=200
11:46 AM
07-Jun-22


TC
Enter a 2 digit no 10000
Enter a 3 digit no 20000
a=10000, b=20000
11:47 AM
07-Jun-22

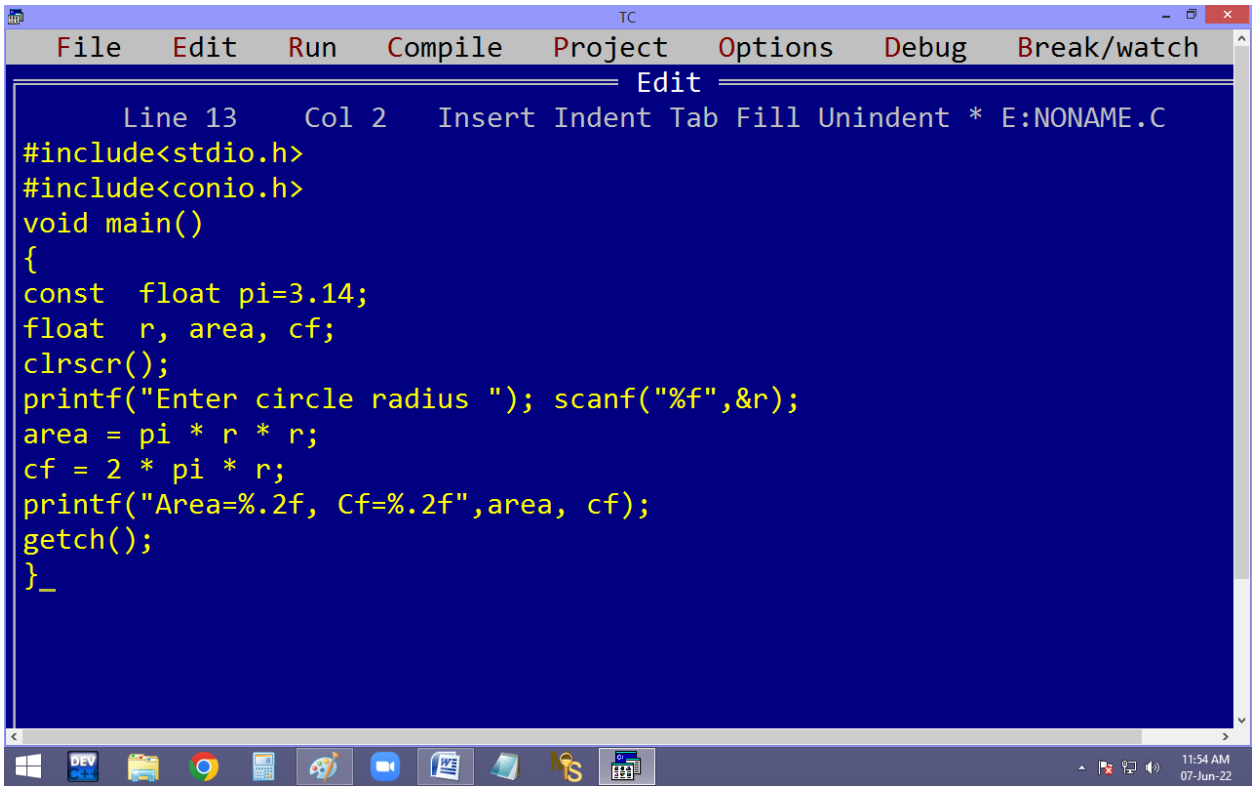

TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 10 Col 10 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a 2 digit no ");
scanf("%2d",&a);
printf("Enter a 3 digit no ");
scanf("%3d",&b);
printf("a=%d, b=%d",a,b);
getch();
}
11:48 AM
07-Jun-22

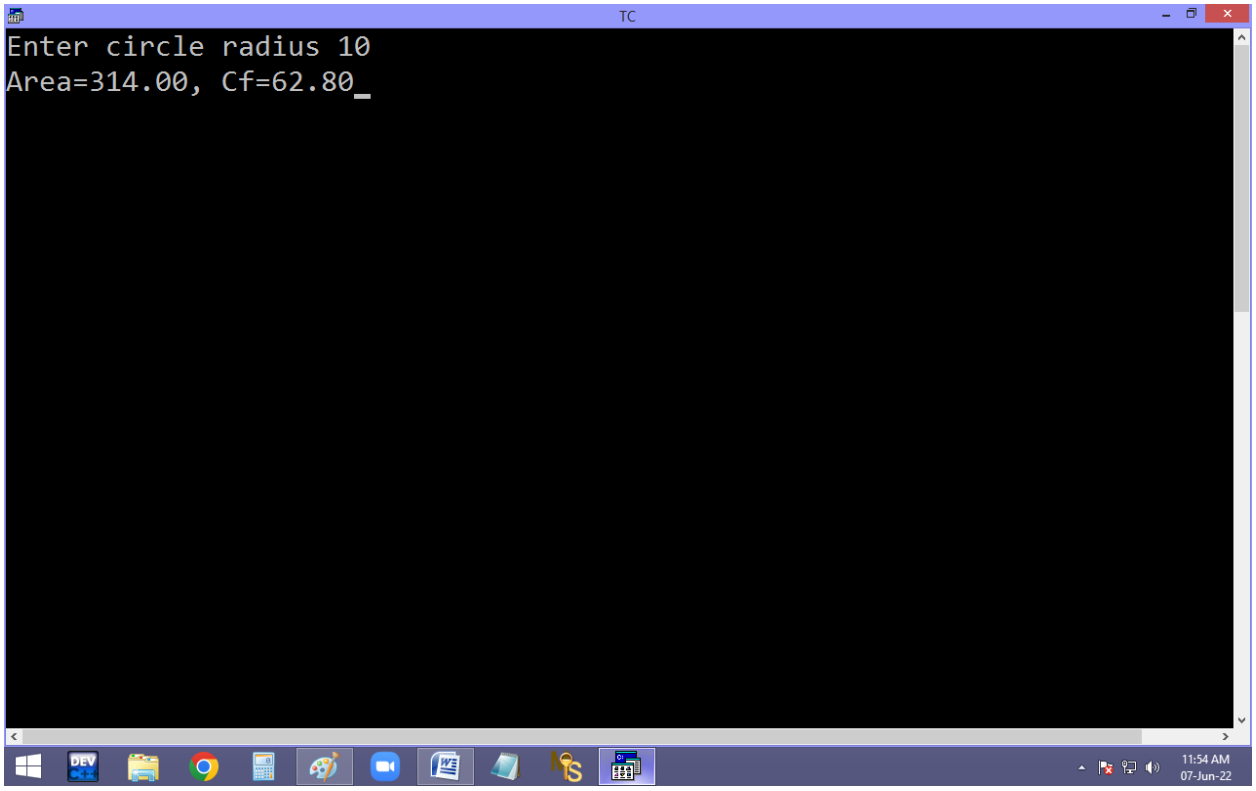

TC
Enter a 2 digit no 10000
Enter a 3 digit no a=10, b=0
11:48 AM
07-Jun-22

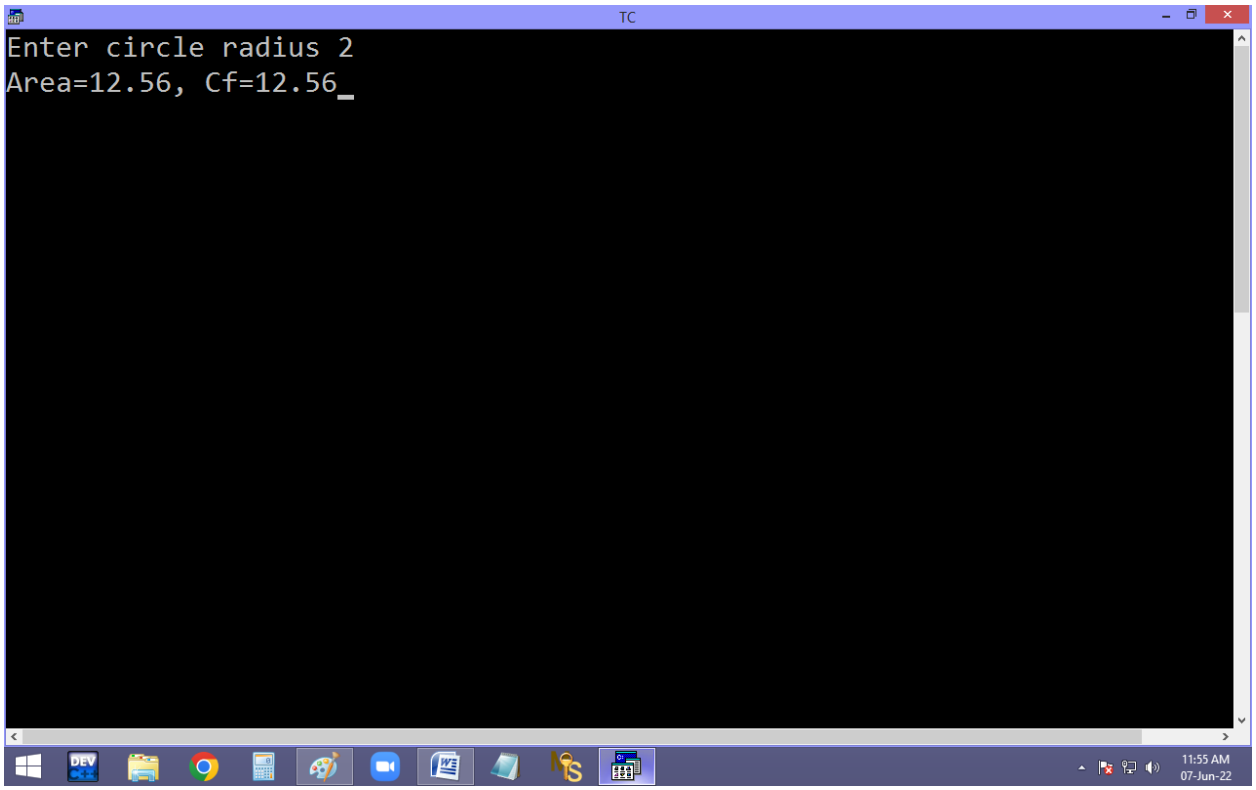

TC
Enter a 2 digit no 123456
Enter a 3 digit no a=12, b=345
11:50 AM
07-Jun-22

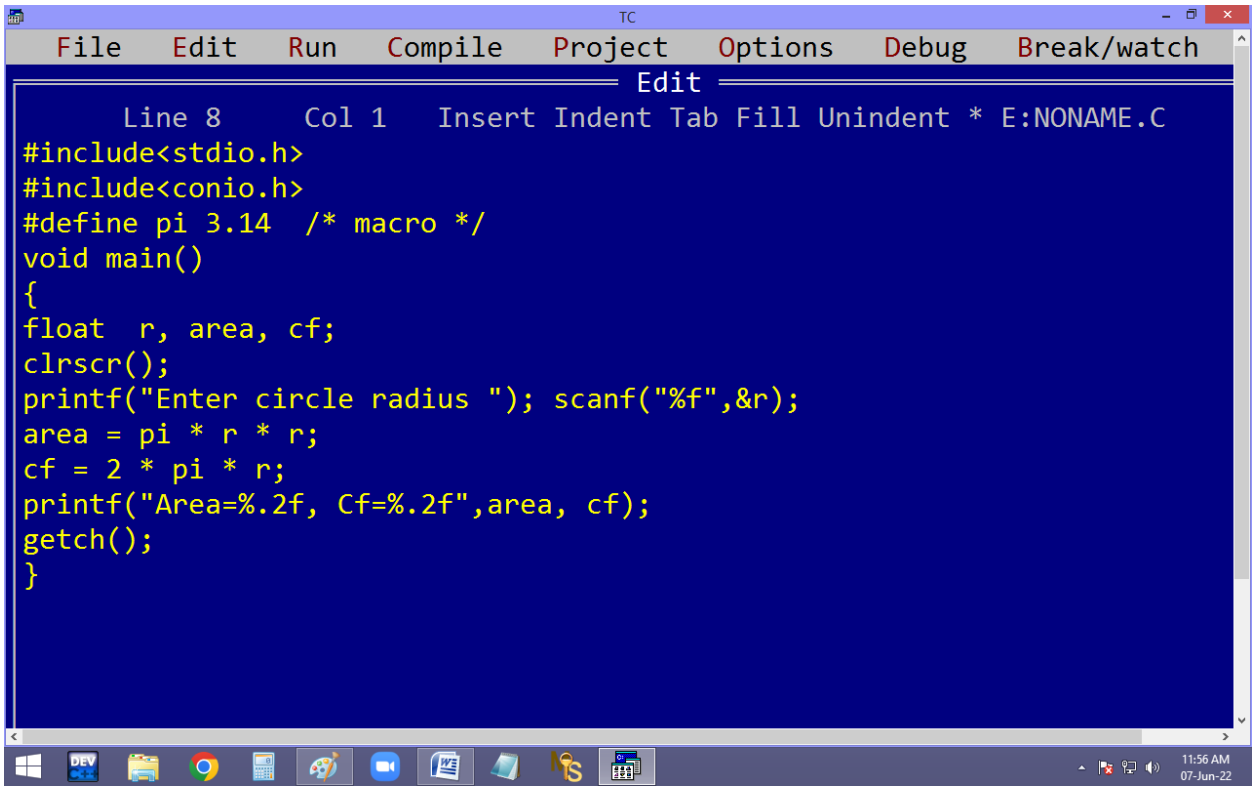


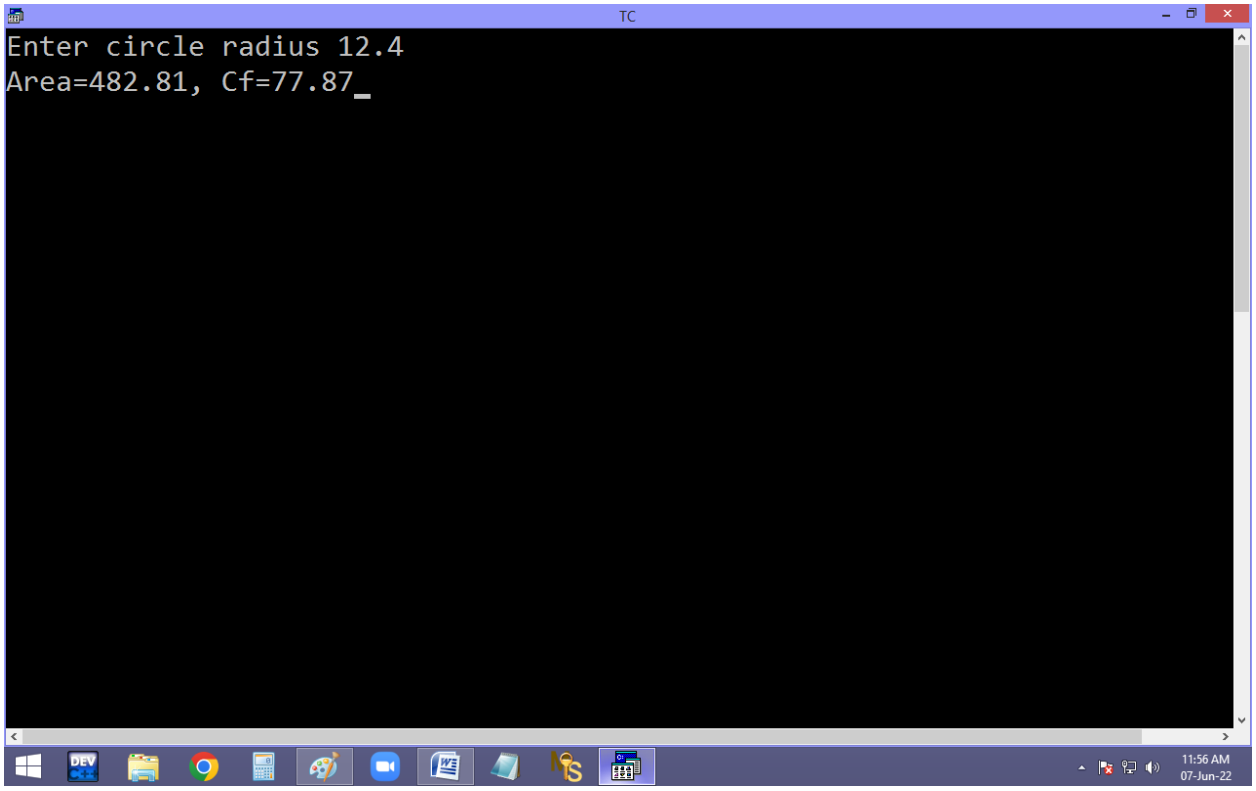
Eg. finding area and circumference of a circle.


TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 13 Col 2 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
const float pi=3.14;
float r, area, cf;
clrscr();
printf("Enter circle radius "); scanf("%f",&r);
area = pi * r * r;
cf = 2 * pi * r;
printf("Area=%.2f, Cf=%.2f",area, cf);
getch();
}_

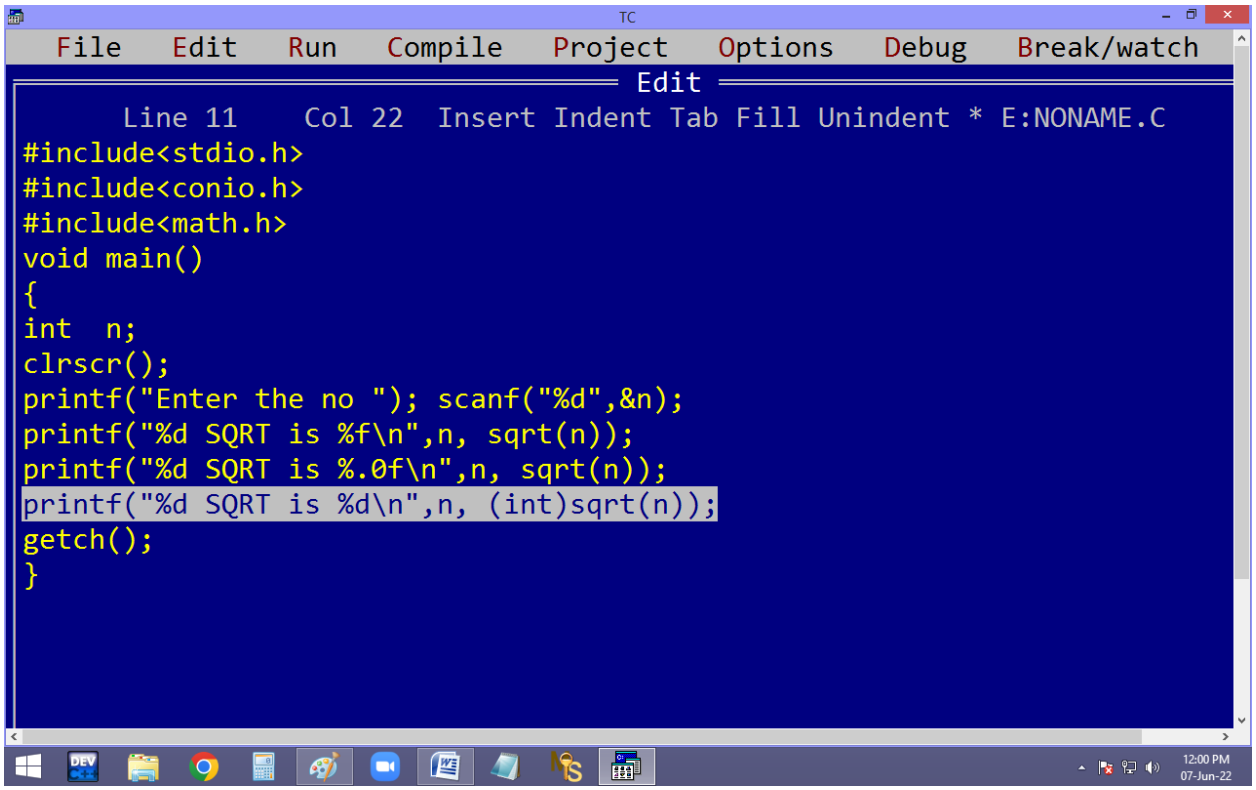

TC
Enter circle radius 10
Area=314.00, Cf=62.80_

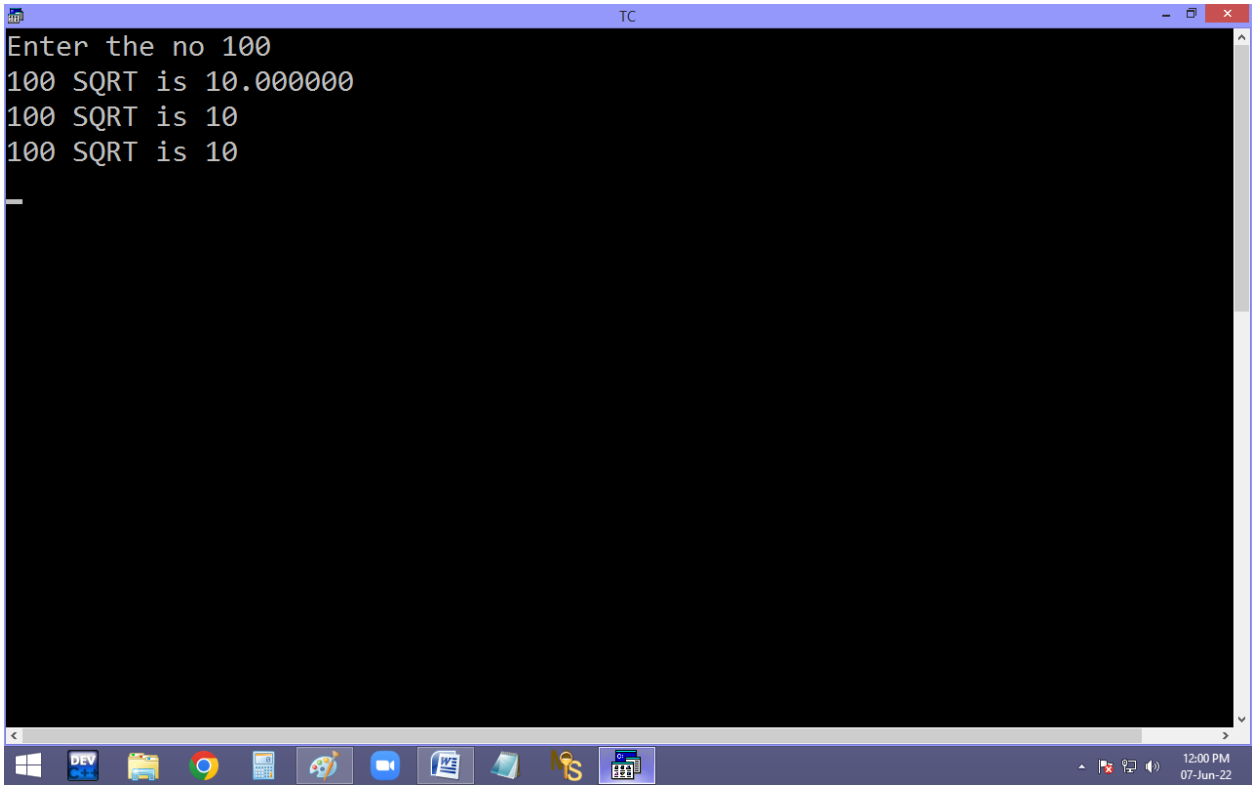

TC
Enter circle radius 2
Area=12.56, Cf=12.56
11:55 AM
07-Jun-22


TC
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 8 Col 1 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
#define pi 3.14 /* macro */
void main()
{
float r, area, cf;
clrscr();
printf("Enter circle radius "); scanf("%f",&r);
area = pi * r * r;
cf = 2 * pi * r;
printf("Area=%.2f, Cf=%.2f",area, cf);
getch();
}
11:56 AM
07-Jun-22

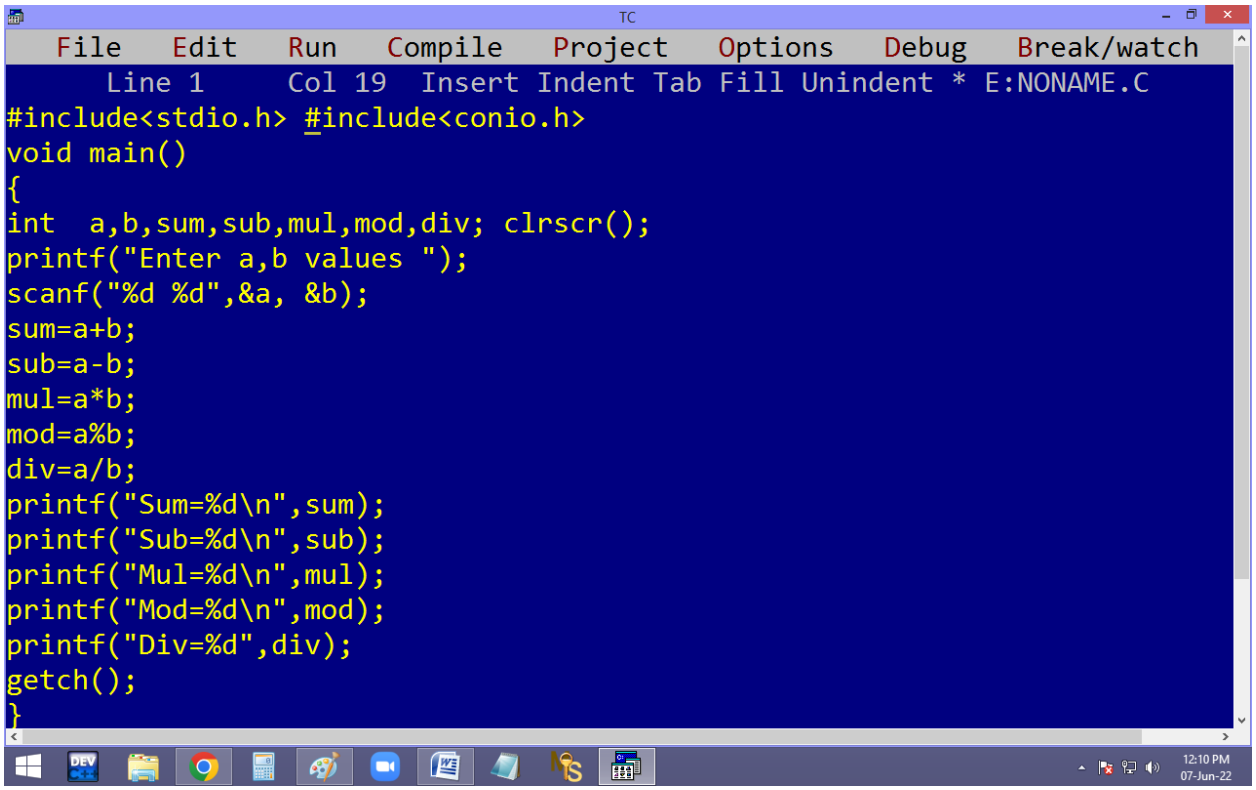

TC
Enter circle radius 12.4
Area=482.81, Cf=77.87
11:56 AM
07-Jun-22

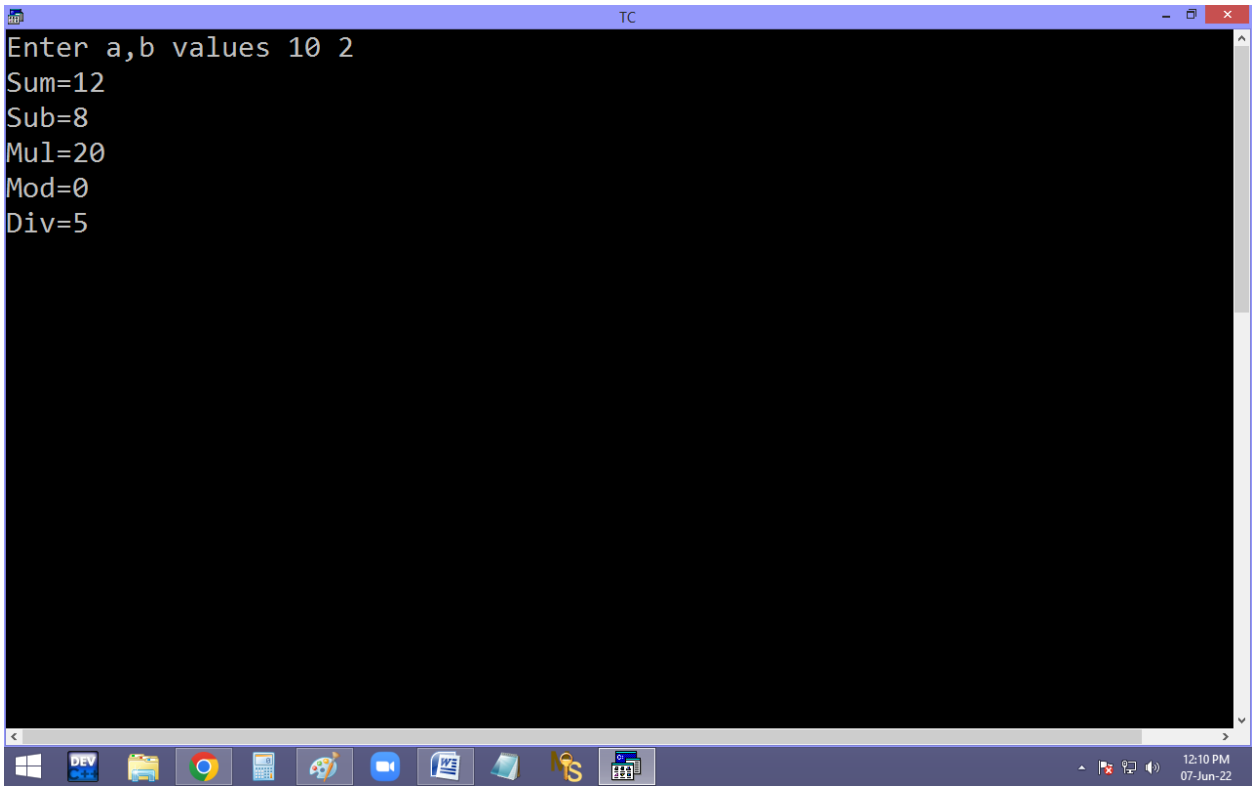
Eg. Finding sqrt of given no.

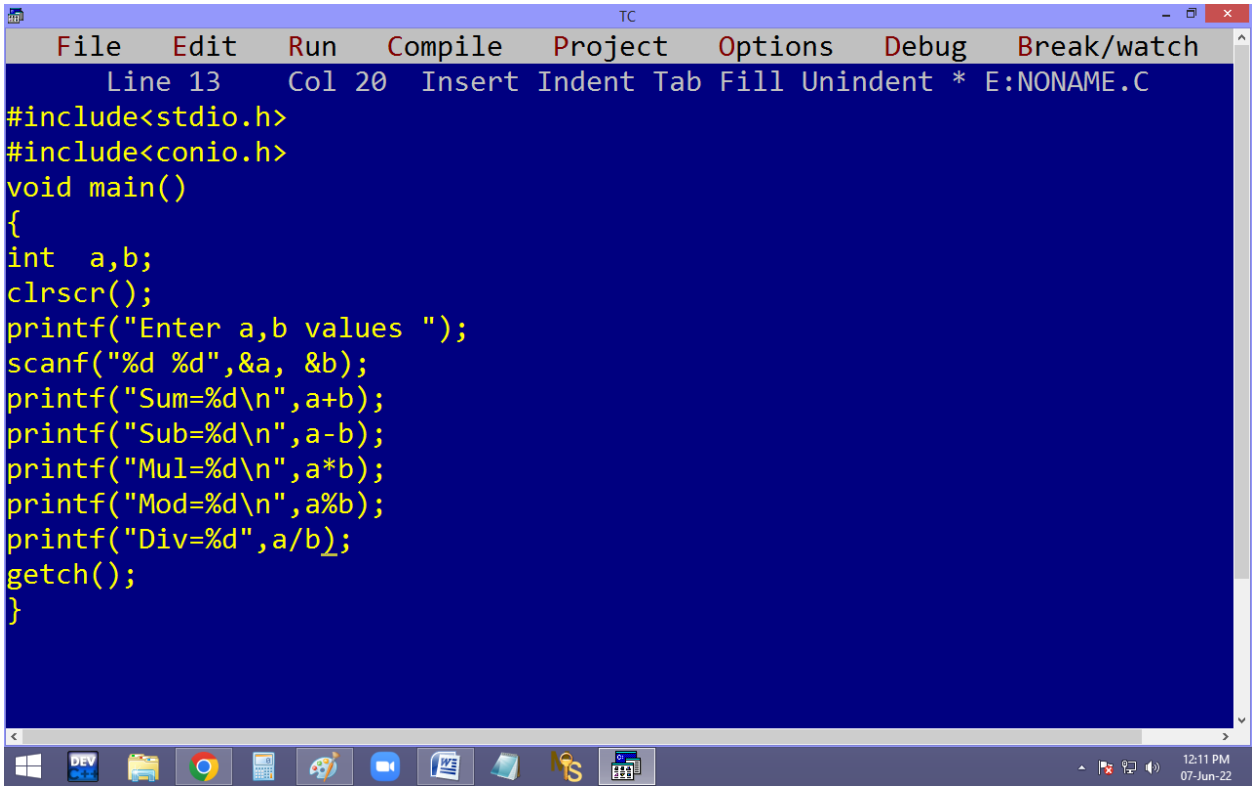


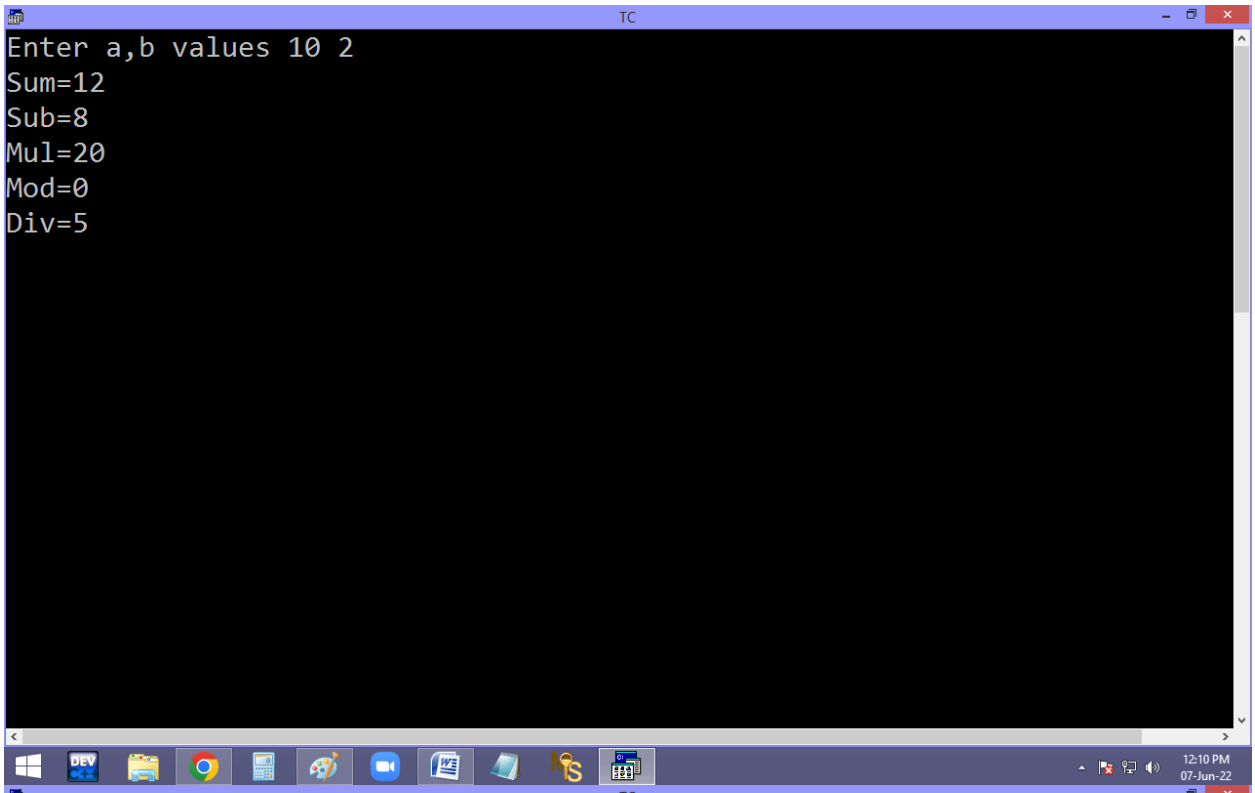


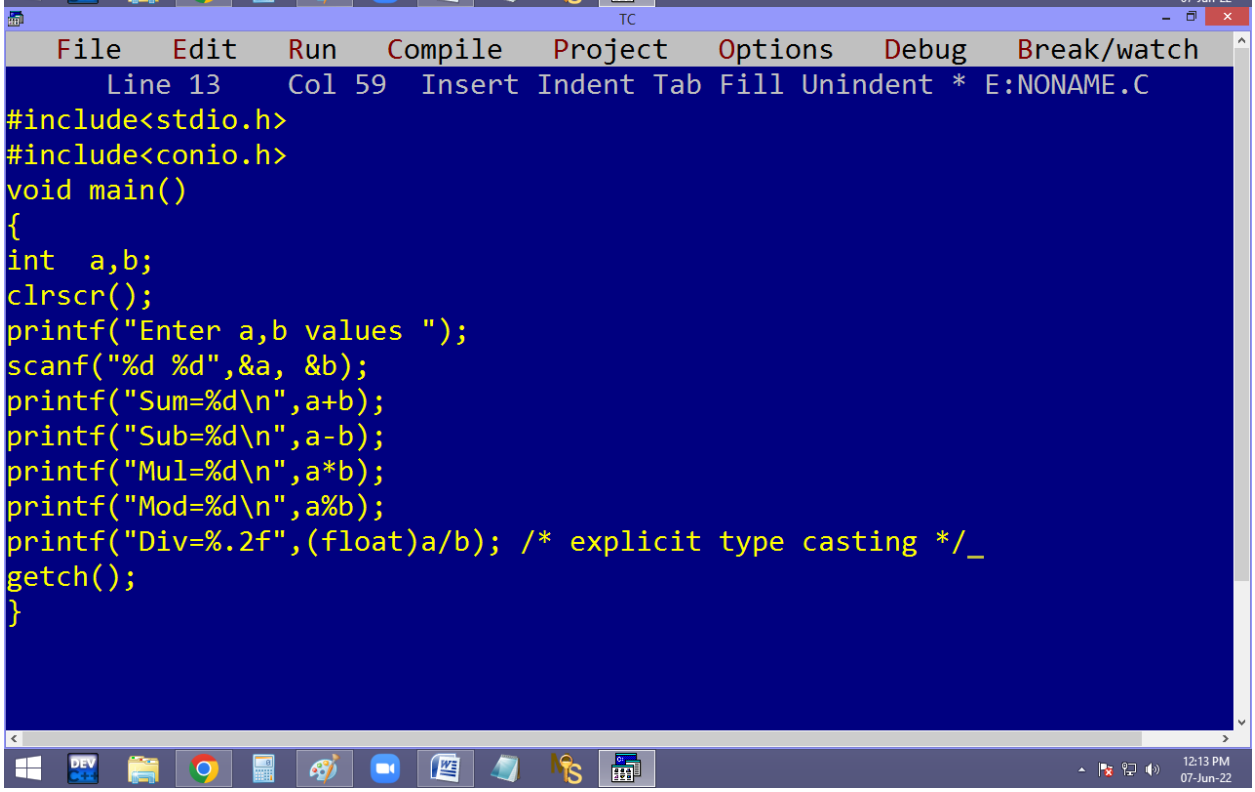
Eg. Read two numbers and perform all arithmetic operations [+, -, *, %, /]

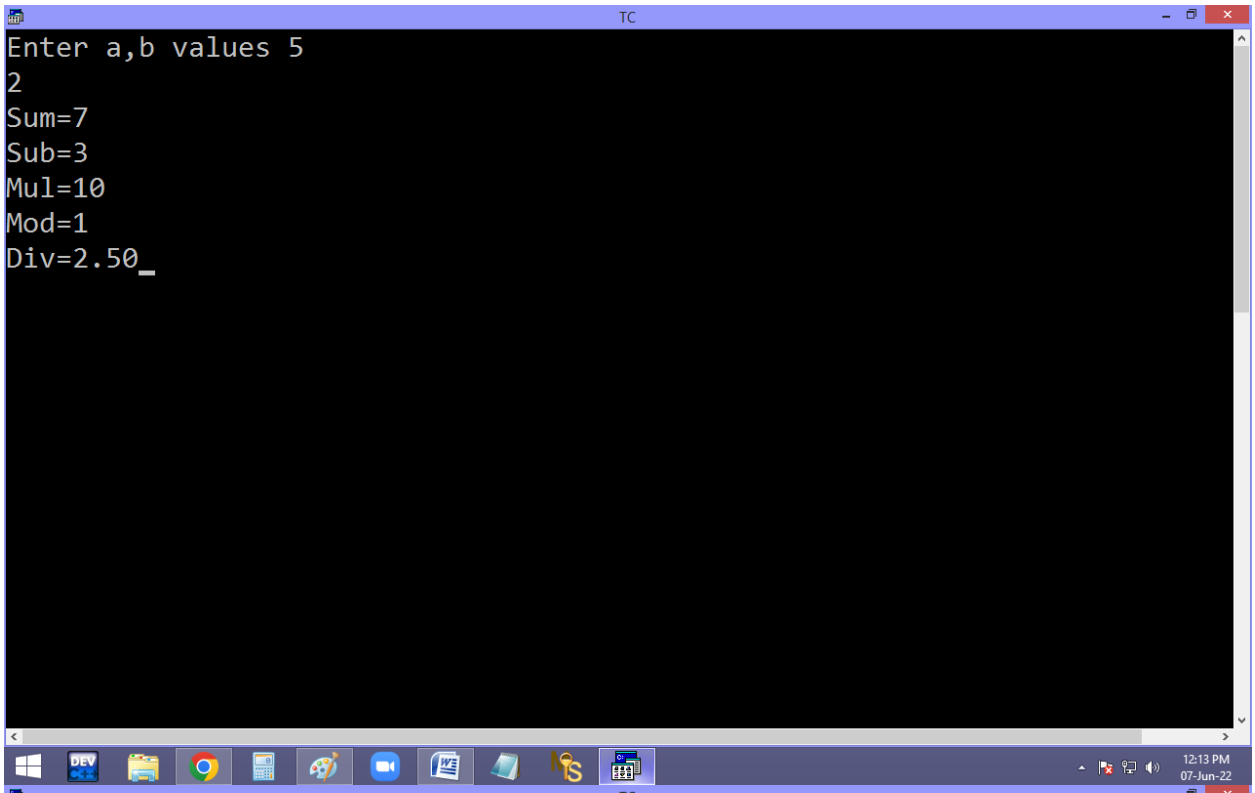


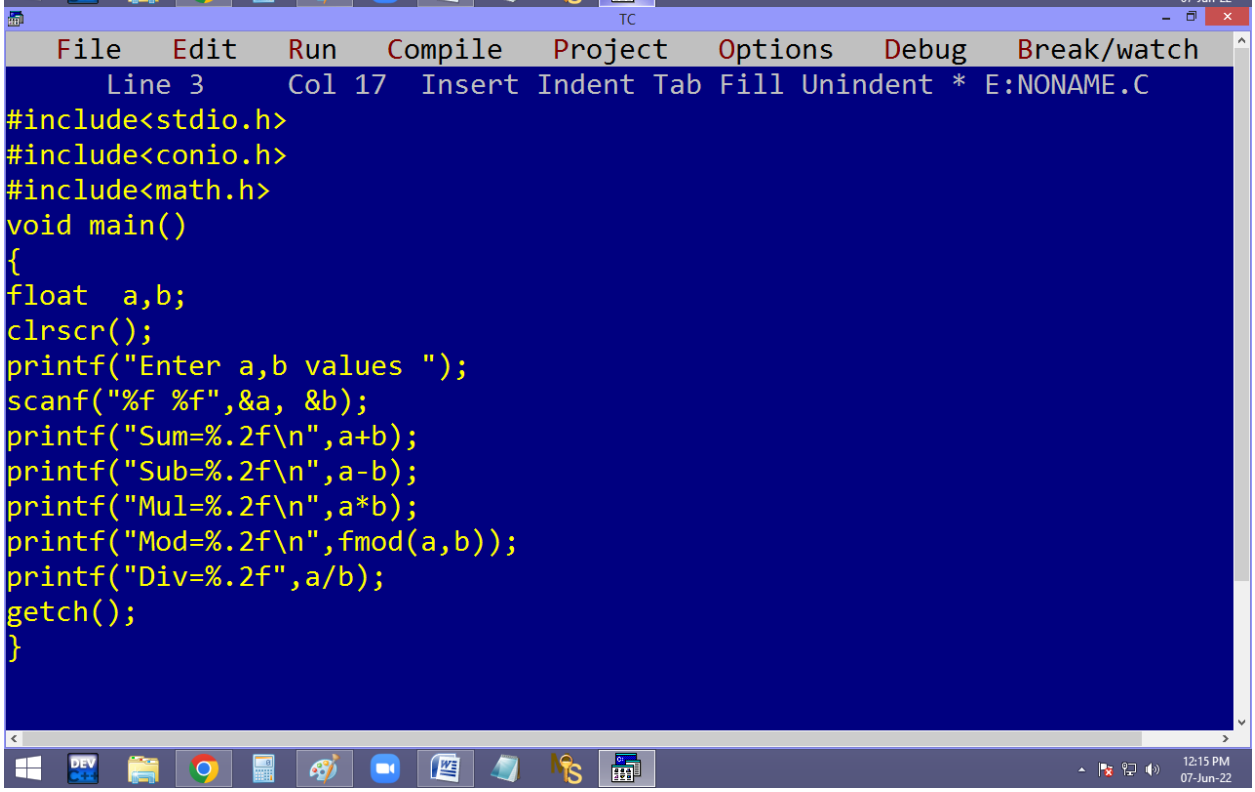

TC
Enter a,b values 10 2
Sum=12
Sub=8
Mul=20
Mod=0
Div=5
12:10 PM
07-Jun-22


TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 20 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a,b values ");
scanf("%d %d",&a, &b);
printf("Sum=%d\n",a+b);
printf("Sub=%d\n",a-b);
printf("Mul=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%d",a/b);
getch();
}
12:11 PM
07-Jun-22

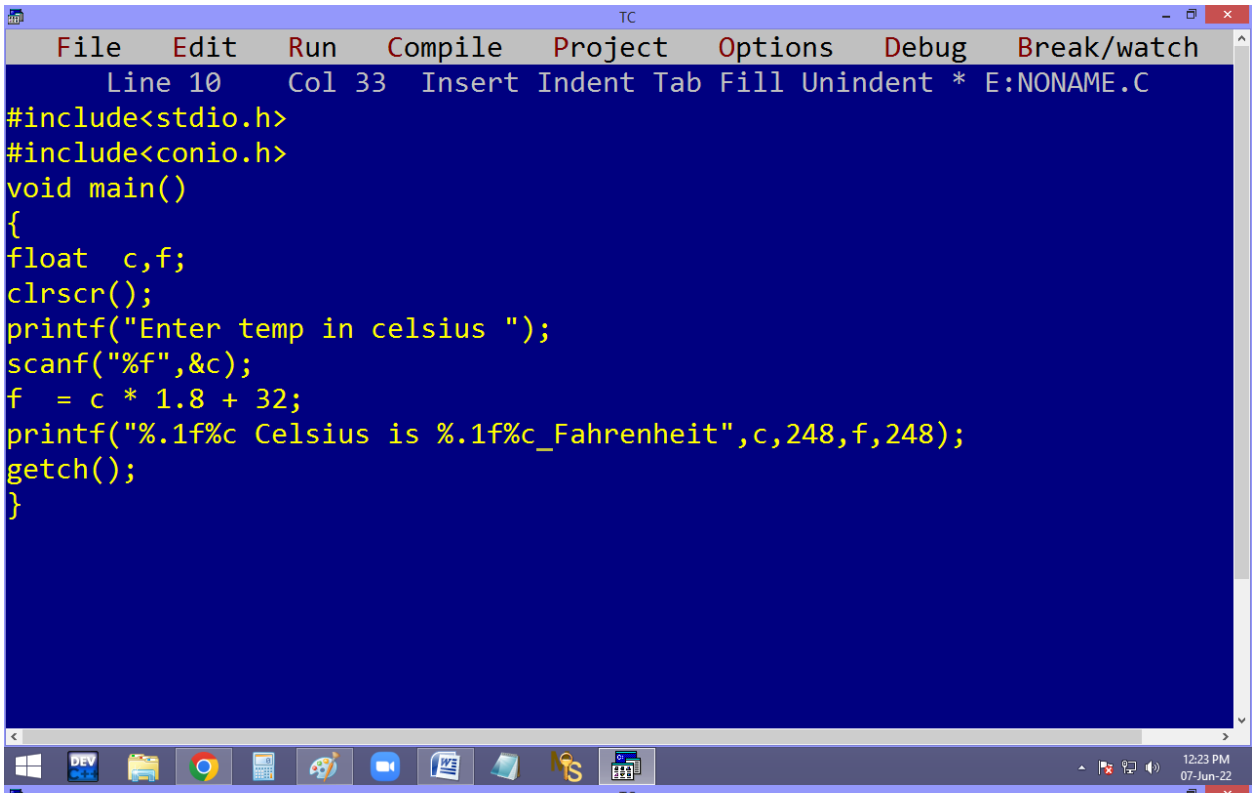

TC
Enter a,b values 10 2
Sum=12
Sub=8
Mul=20
Mod=0
Div=5

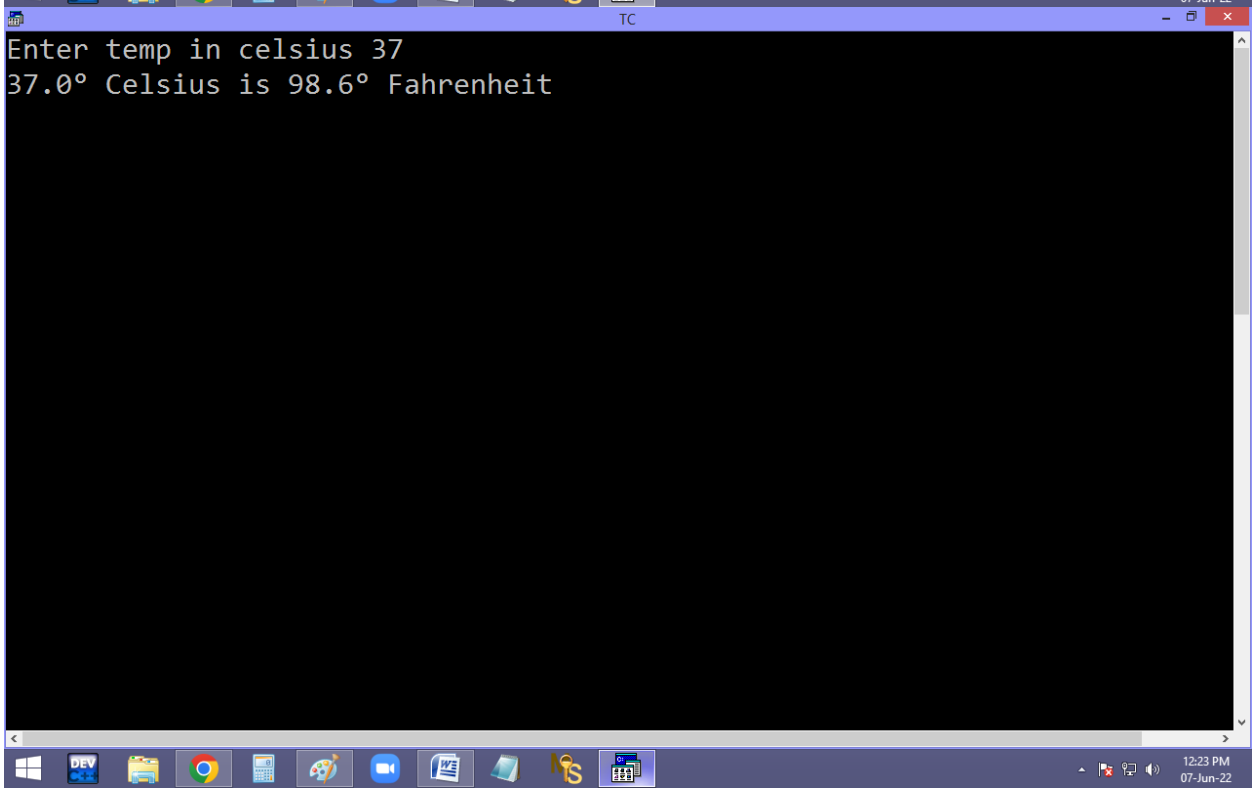

TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 59 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a,b values ");
scanf("%d %d",&a, &b);
printf("Sum=%d\n",a+b);
printf("Sub=%d\n",a-b);
printf("Mul=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%.2f",(float)a/b); /* explicit type casting */_
getch();
}

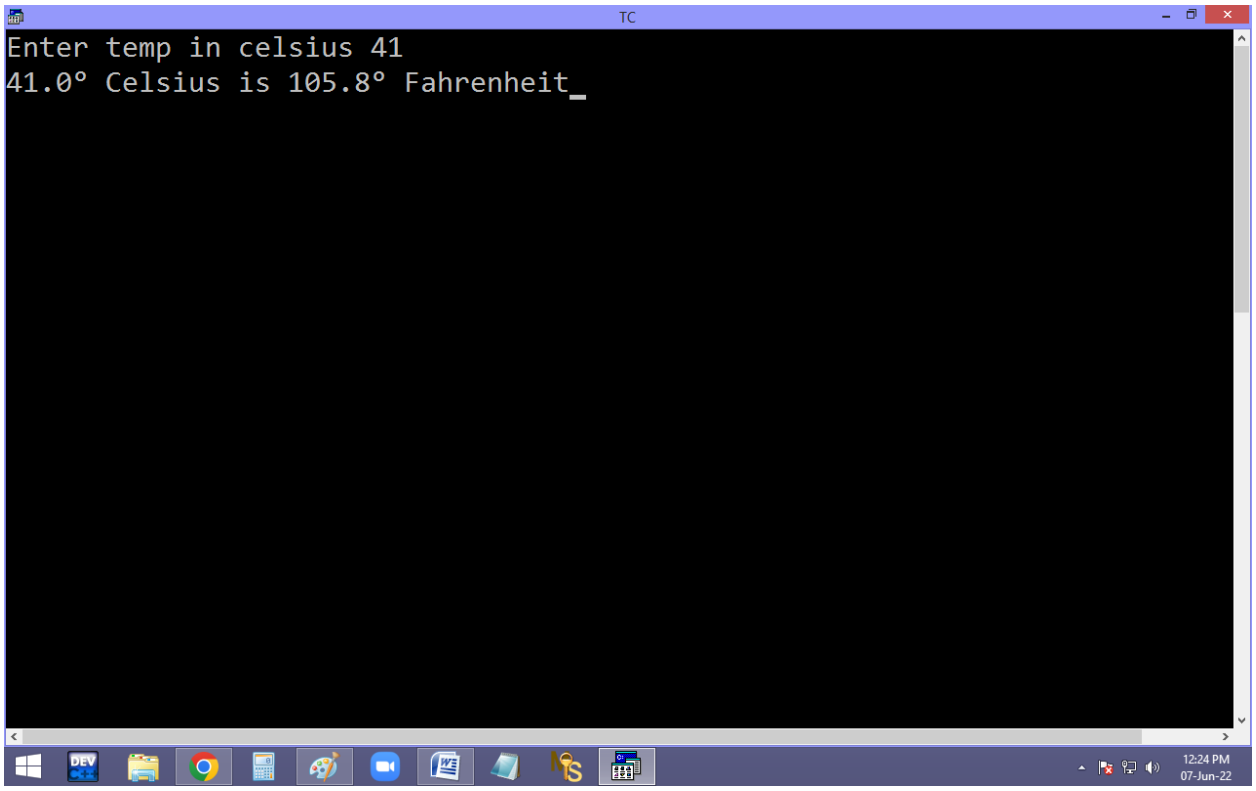

TC
Enter a,b values 5
2
Sum=7
Sub=3
Mul=10
Mod=1
Div=2.50


TC
File Edit Run Compile Project Options Debug Break/watch
Line 3 Col 17 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
float a,b;
clrscr();
printf("Enter a,b values ");
scanf("%f %f",&a, &b);
printf("Sum=%.2f\n",a+b);
printf("Sub=%.2f\n",a-b);
printf("Mul=%.2f\n",a*b);
printf("Mod=%.2f\n",fmod(a,b));
printf("Div=%.2f",a/b);
getch();
}

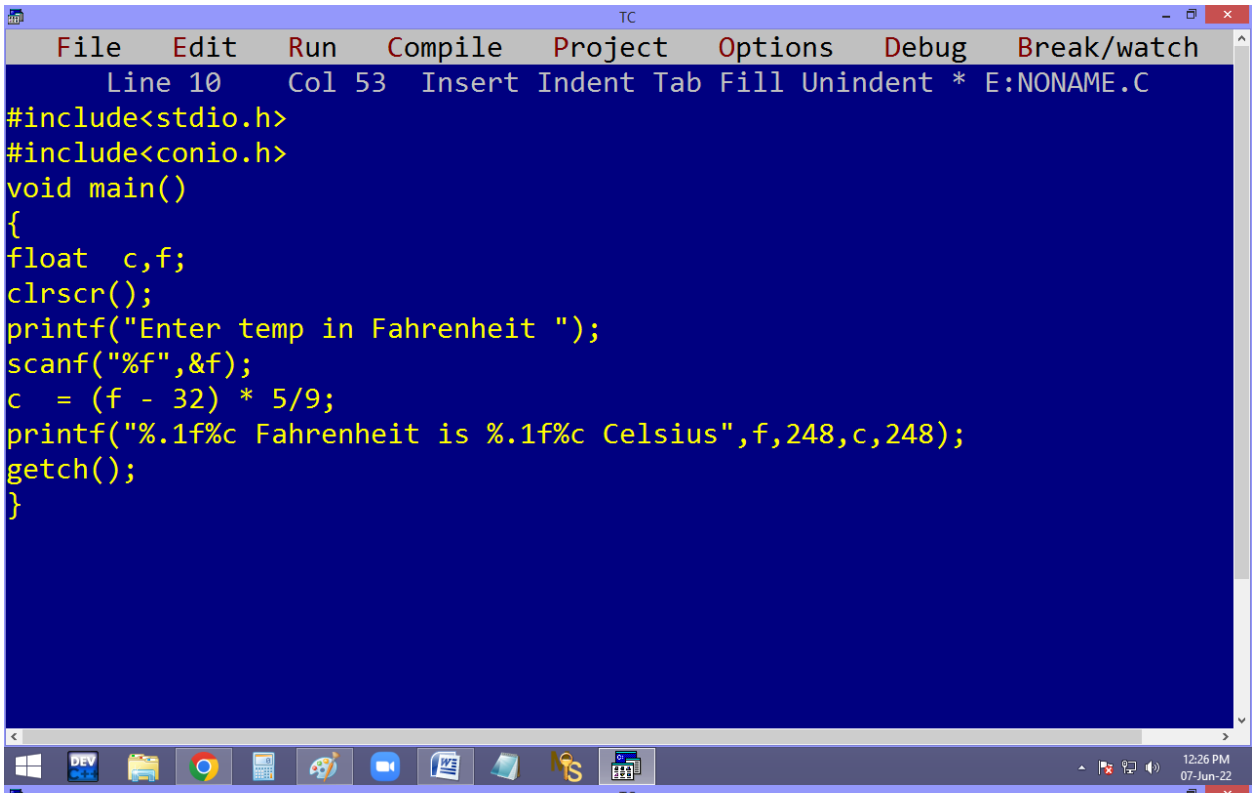
Eg. Celsius to Fahrenheit conversion:

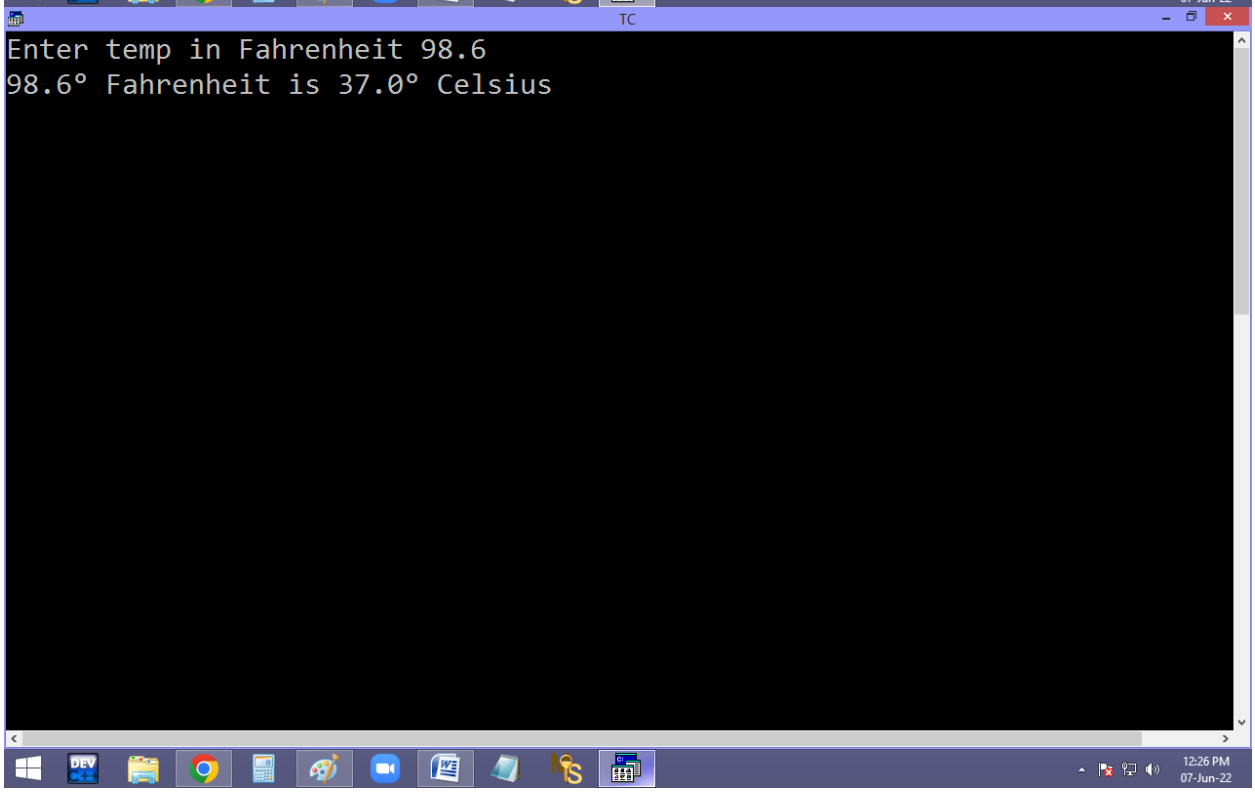

TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 33 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
float c,f;
clrscr();
printf("Enter temp in celsius ");
scanf("%f",&c);
f = c * 1.8 + 32;
printf("%.1f%c Celsius is %.1f%c_Fahrenheit",c,248,f,248);
getch();
}


TC
Enter temp in celsius 37
37.0° Celsius is 98.6° Fahrenheit

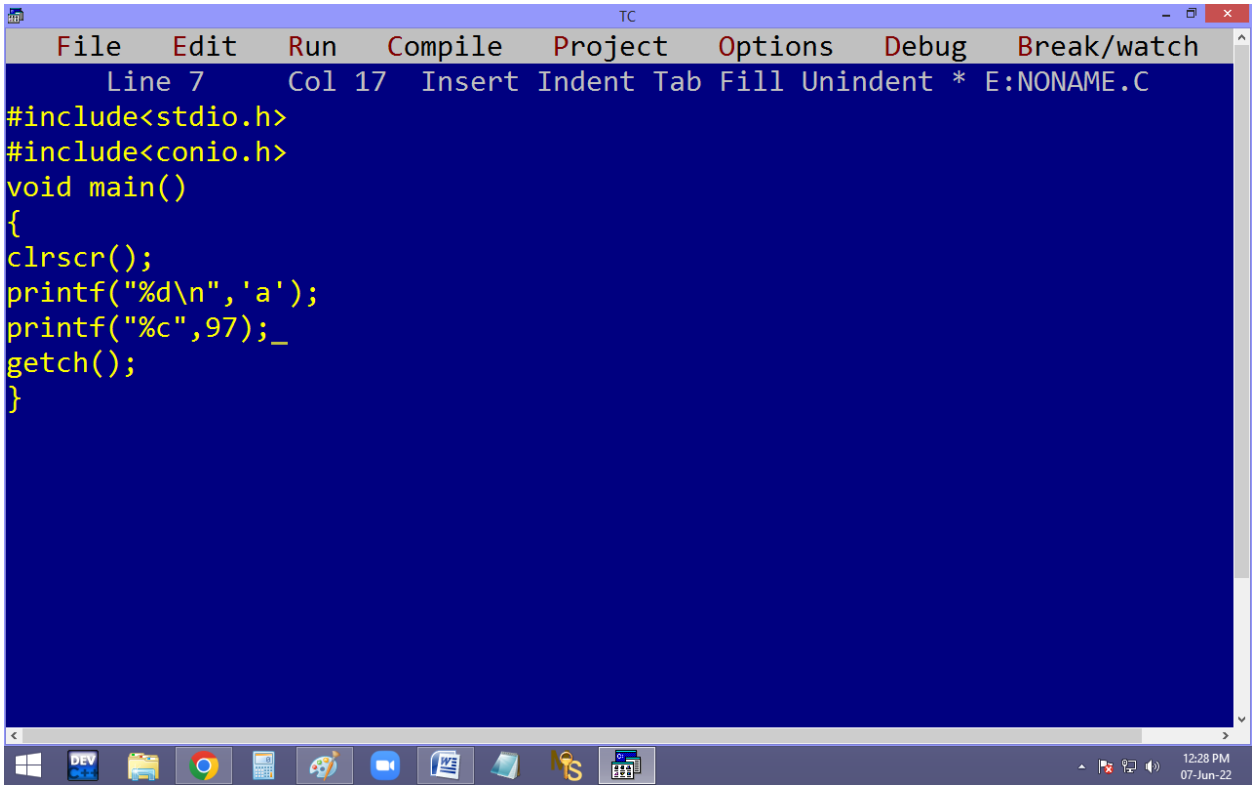


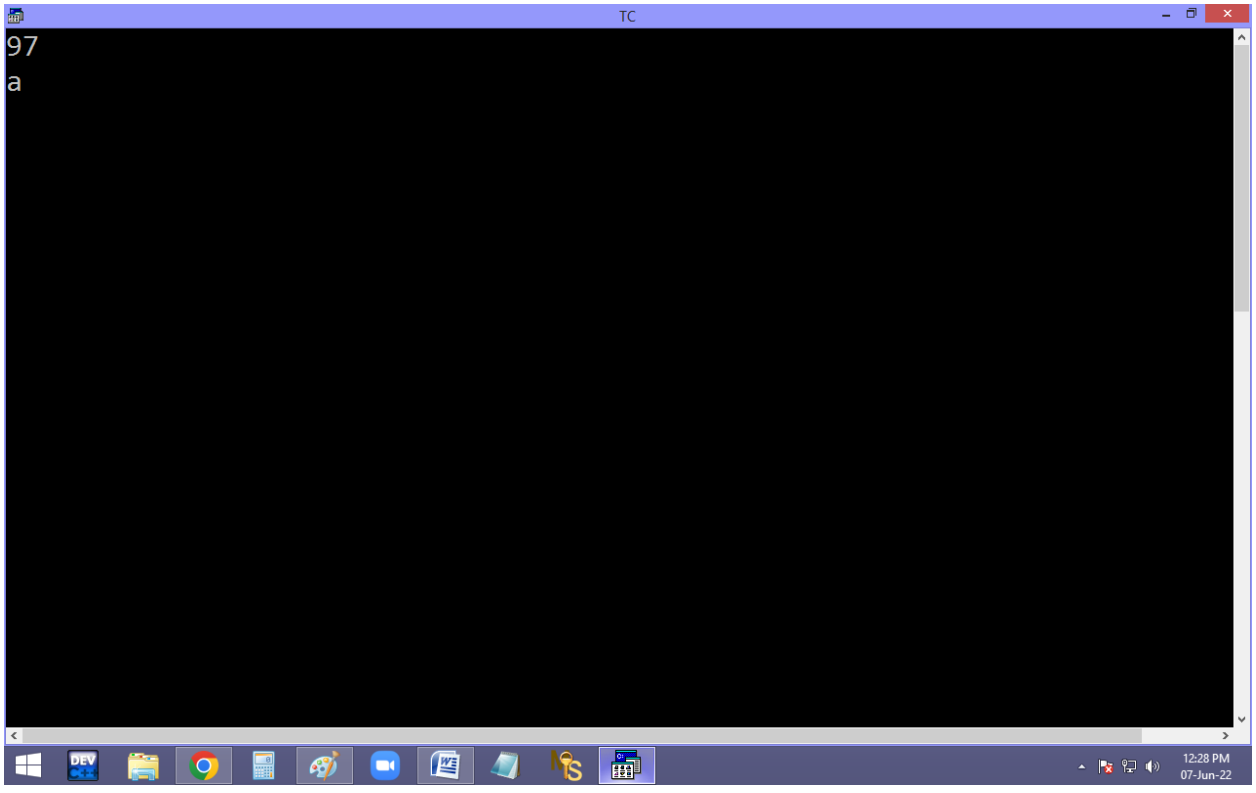
Fahrenheit to Celsius:


TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 53 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
float c,f;
clrscr();
printf("Enter temp in Fahrenheit ");
scanf("%f",&f);
c = (f - 32) * 5/9;
printf("%.1f%c Fahrenheit is %.1f%c Celsius",f,248,c,248);
getch();
}


TC
Enter temp in Fahrenheit 98.6
98.6° Fahrenheit is 37.0° Celsius

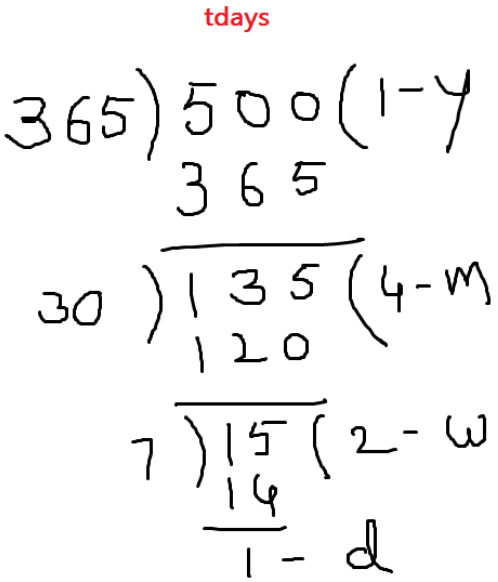
Finding ascii value:

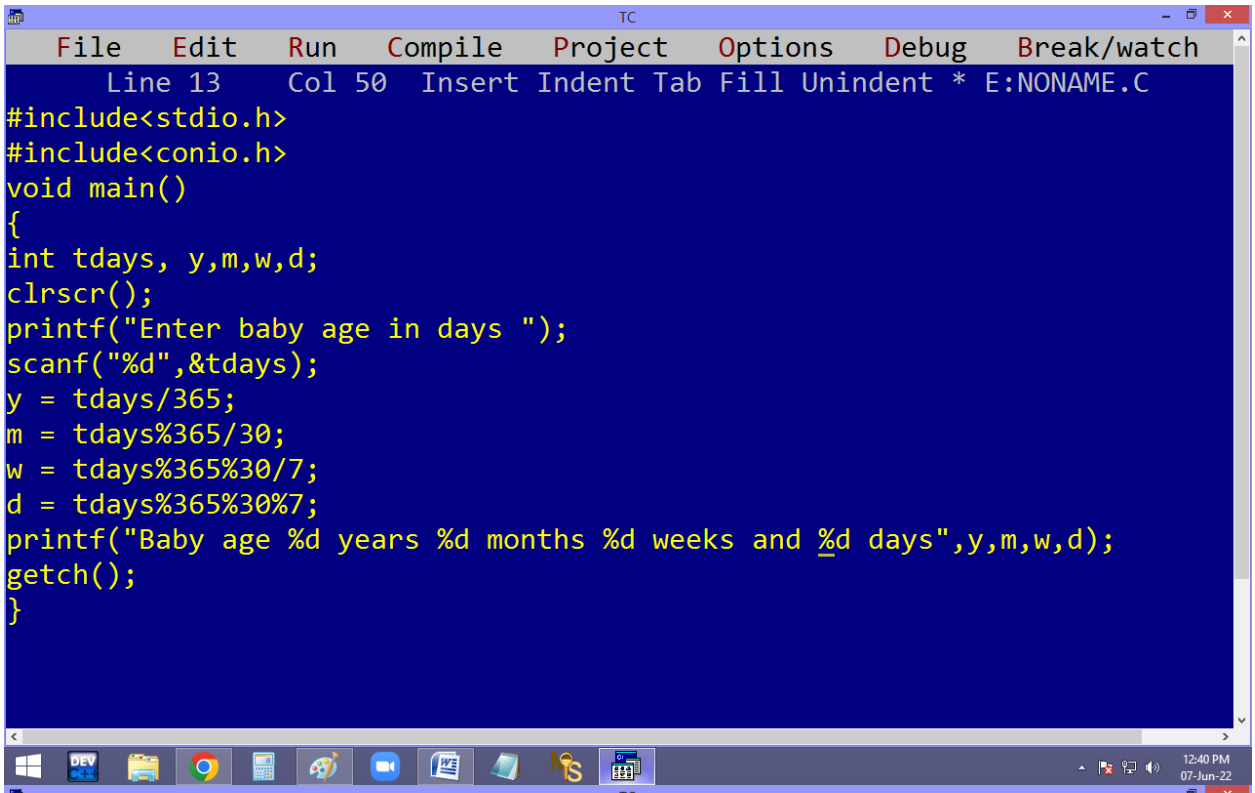


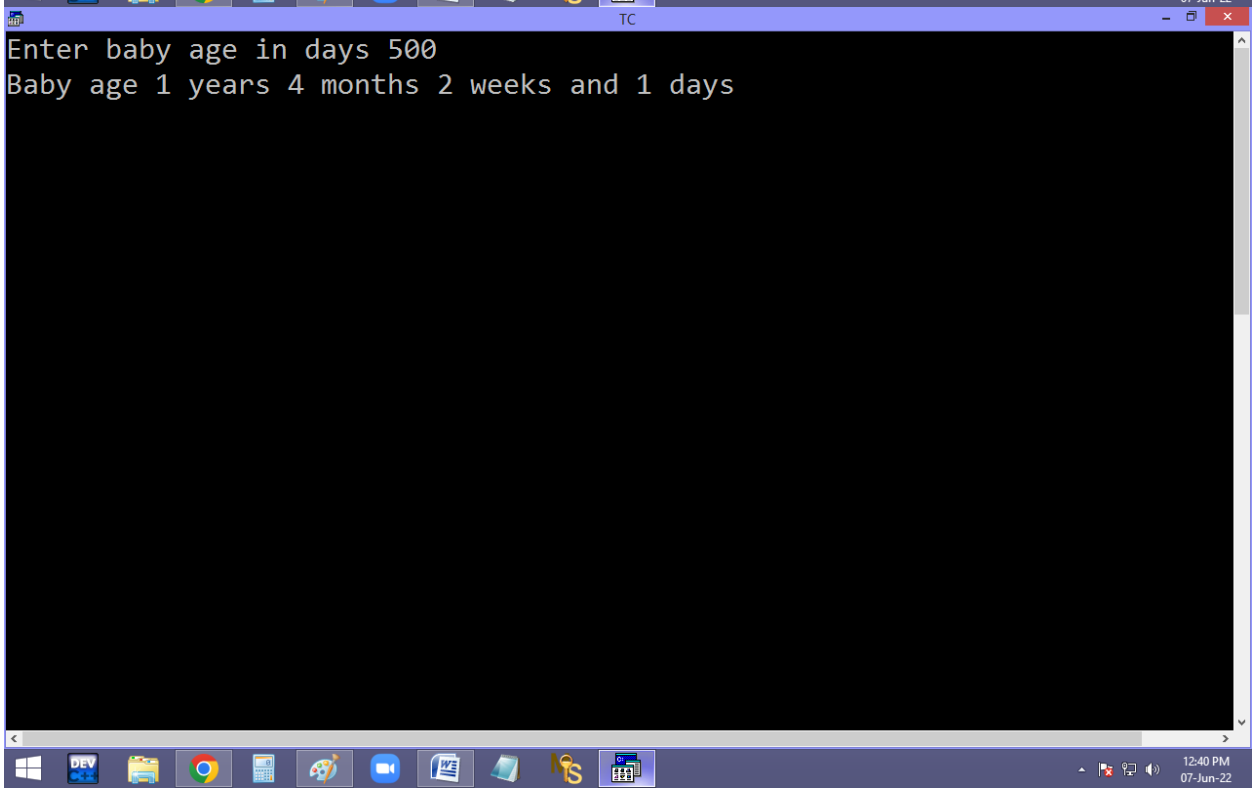


Read baby age in no of days and find the baby age in years, months, weeks and days.

y = 500/365=1 year
m = 500%365=135/30=4 months
w = 500%365=135%30=15/7=2 weeks
d = 500%365=135%30=15%7=1 day




TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 50 Insert Indent Tab Fill Unindent * E:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
int tdays, y,m,w,d;
clrscr();
printf("Enter baby age in days ");
scanf("%d",&tdays);
y = tdays/365;
m = tdays%365/30;
w = tdays%365%30/7;
d = tdays%365%30%7;
printf("Baby age %d years %d months %d weeks and %d days",y,m,w,d);
getch();
}


TC
Enter baby age in days 500
Baby age 1 years 4 months 2 weeks and 1 days

Home work:

1. **Read baby age in years, months, weeks and days. Find the total baby age in days.**
2. **Read a customer id, name, quantity purchased and rate of item. Find the amount, 35% discount and netbill.**