

E1-C Programming Exercises Operator and Expression

1. Write a C program to input two numbers from user and calculate their sum.

```
#include<stdio.h>

int main()
{
    int a,b,sum=0;

    printf("Input first number: ");

    scanf("%d",&a);

    printf("Input second number: ");

    scanf("%d",&b);

    sum=a+b;

    printf("Sum = %d\n",sum);

    return 0;
}
```

2. Write a C program to input two numbers and perform all arithmetic operations.

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

```
int main()
```

```
{
```

```
    int a,b;
```

```
    printf("first number: ");
```

```
    scanf("%d",&a);
```

```
    printf("second number: ");
```

```
    scanf("%d",&b);
```

```
    printf("Sum = %d\n",a+b);
```

```
    printf("Difference = %d\n",a-b);
```

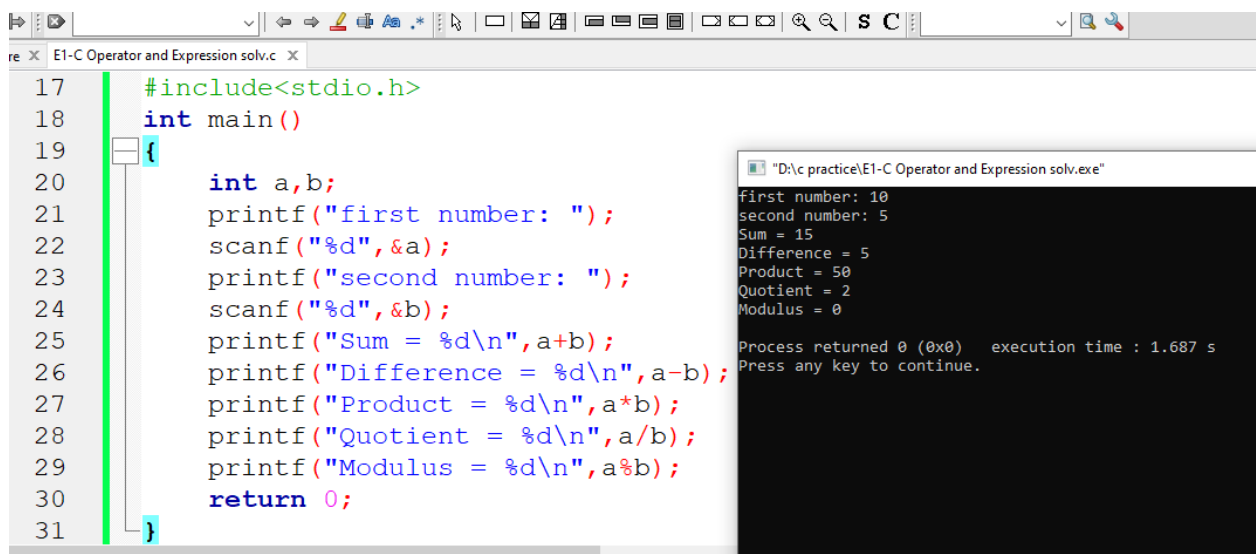
```
    printf("Product = %d\n",a*b);
```

```
    printf("Quotient = %d\n",a/b);
```

```
    printf("Modulus = %d\n",a%b);
```

```
    return 0;
```

```
}
```



```
17 #include<stdio.h>
18 int main()
19 {
20     int a,b;
21     printf("first number: ");
22     scanf("%d",&a);
23     printf("second number: ");
24     scanf("%d",&b);
25     printf("Sum = %d\n",a+b);
26     printf("Difference = %d\n",a-b);
27     printf("Product = %d\n",a*b);
28     printf("Quotient = %d\n",a/b);
29     printf("Modulus = %d\n",a%b);
30     return 0;
31 }
```

```
first number: 10
second number: 5
Sum = 15
Difference = 5
Product = 50
Quotient = 2
Modulus = 0

Process returned 0 (0x0)   execution time : 1.687 s
Press any key to continue.
```

3. Write a C program to input length and width of a rectangle and calculate perimeter of the rectangle.

```
#include<stdio.h>

int main()
{
    int a,b;

    printf("Enter length: ");

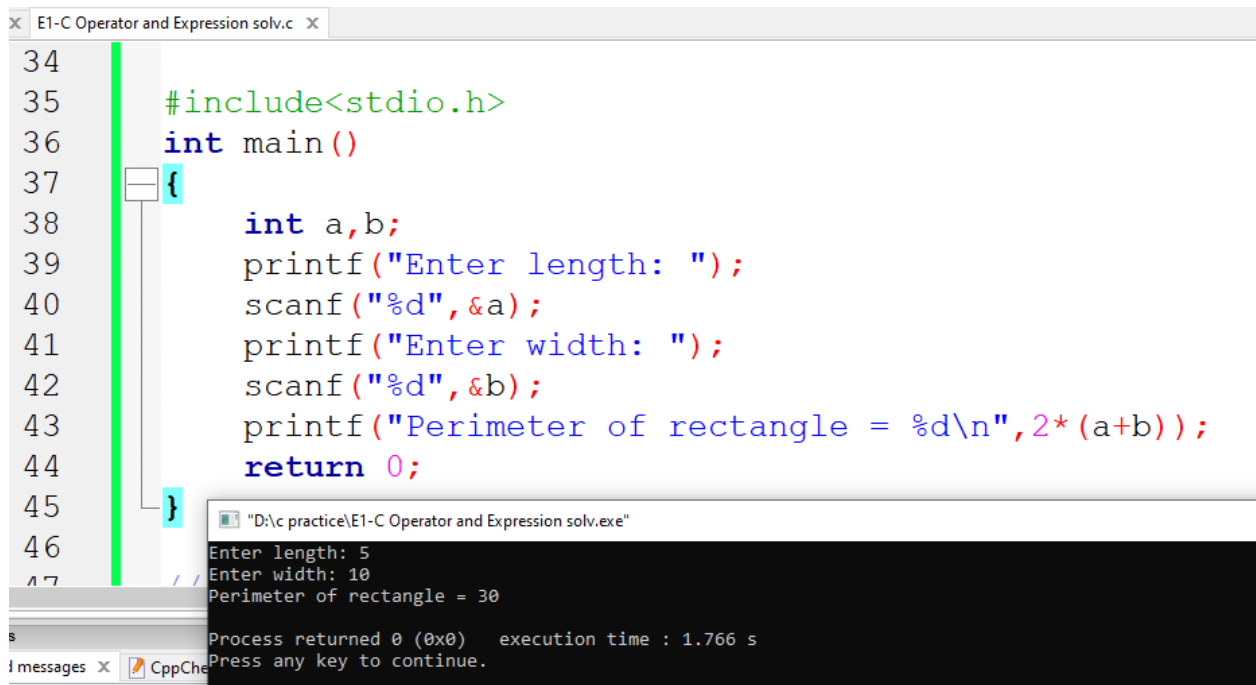
    scanf("%d",&a);

    printf("Enter width: ");

    scanf("%d",&b);

    printf("Perimeter of rectangle = %d\n",2*(a+b));

    return 0;
}
```



```
34
35     #include<stdio.h>
36     int main()
37     {
38         int a,b;
39         printf("Enter length: ");
40         scanf("%d",&a);
41         printf("Enter width: ");
42         scanf("%d",&b);
43         printf("Perimeter of rectangle = %d\n",2*(a+b));
44         return 0;
45     }
46
47
```

"D:\c practice\E1-C Operator and Expression solv.exe"

```
Enter length: 5
Enter width: 10
Perimeter of rectangle = 30

Process returned 0 (0x0)   execution time : 1.766 s
Press any key to continue.
```

4. Write a C program to input length and width of a rectangle and find area of the given rectangle.

```
#include<stdio.h>

int main()
{
    int a,b;

    printf("Enter length: ");

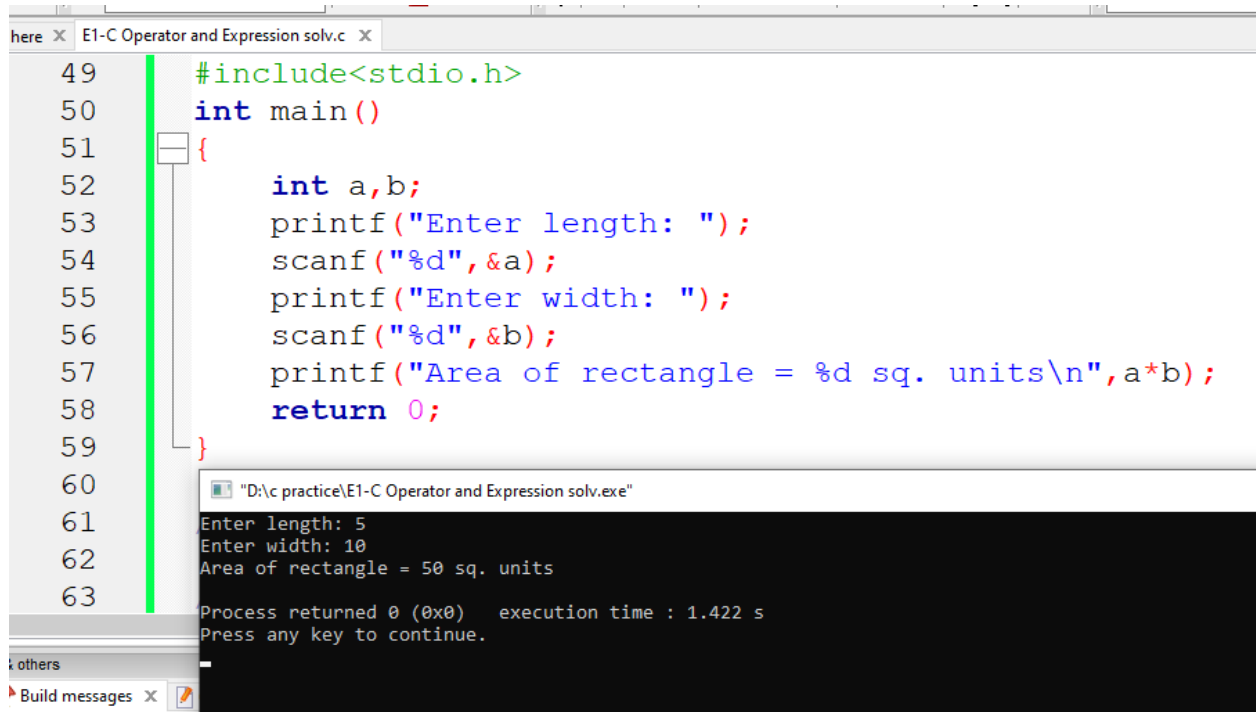
    scanf("%d",&a);

    printf("Enter width: ");

    scanf("%d",&b);

    printf("Area of rectangle = %d sq. units\n",a*b);

    return 0;
}
```



The screenshot shows a C program editor window titled "E1-C Operator and Expression solv.c". The code is as follows:

```
49 #include<stdio.h>
50 int main()
51 {
52     int a,b;
53     printf("Enter length: ");
54     scanf("%d",&a);
55     printf("Enter width: ");
56     scanf("%d",&b);
57     printf("Area of rectangle = %d sq. units\n",a*b);
58     return 0;
59 }
```

Below the editor is a terminal window titled "D:\c practice\E1-C Operator and Expression solv.exe". It shows the program's execution with the following output:

```
Enter length: 5
Enter width: 10
Area of rectangle = 50 sq. units

Process returned 0 (0x0)   execution time : 1.422 s
Press any key to continue.
```

The terminal window also shows a status bar at the bottom with the text "Build messages" and a small icon.

5. Write a C program to input radius of a circle from user and find diameter, circumference and area of the circle.

```
#include<stdio.h>

#define pi 3.14159

int main()

{

    int r;

    printf("Enter radius: ");

    scanf("%d",&r);

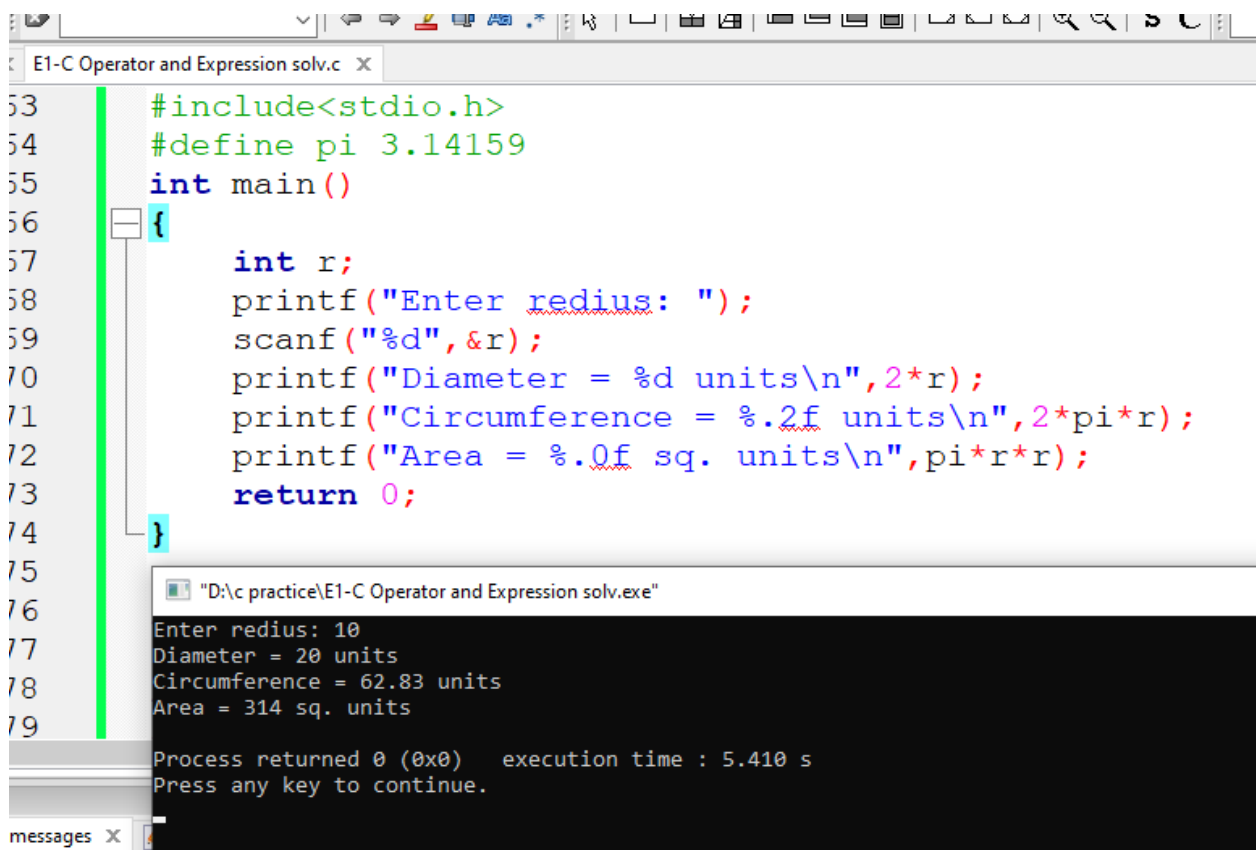
    printf("Diameter = %d units\n",2*r);

    printf("Circumference = %.2f units\n",2*pi*r);

    printf("Area = %.0f sq. units\n",pi*r*r);

    return 0;

}
```



```
53  #include<stdio.h>
54  #define pi 3.14159
55  int main()
56  {
57      int r;
58      printf("Enter radius: ");
59      scanf("%d",&r);
60      printf("Diameter = %d units\n",2*r);
61      printf("Circumference = %.2f units\n",2*pi*r);
62      printf("Area = %.0f sq. units\n",pi*r*r);
63      return 0;
64  }

"D:\c practice\E1-C Operator and Expression solv.exe"
Enter radius: 10
Diameter = 20 units
Circumference = 62.83 units
Area = 314 sq. units

Process returned 0 (0x0)   execution time : 5.410 s
Press any key to continue.
```

6. Write a C program to input length in centimeter and convert it to meter and kilometer.

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

```
int main()
```

```
{
```

```
    int a;
```

```
    printf("Enter length in centimeter = ");
```

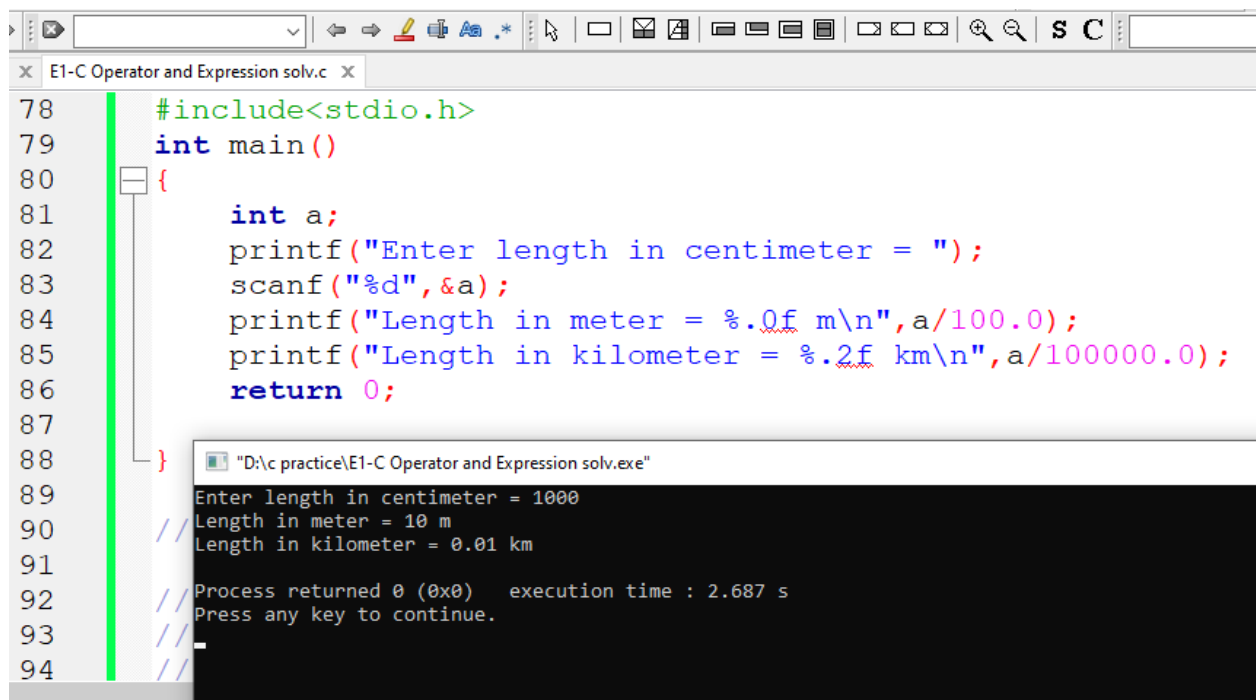
```
    scanf("%d",&a);
```

```
    printf("Length in meter = %.0f m\n",a/100.0);
```

```
    printf("Length in kilometer = %.2f km\n",a/100000.0);
```

```
    return 0;
```

```
}
```



The image shows a screenshot of a C program in a code editor and its execution output in a console window. The code editor window is titled "E1-C Operator and Expression solv.c" and contains the following code:

```
78 #include<stdio.h>
79 int main()
80 {
81     int a;
82     printf("Enter length in centimeter = ");
83     scanf("%d",&a);
84     printf("Length in meter = %.0f m\n",a/100.0);
85     printf("Length in kilometer = %.2f km\n",a/100000.0);
86     return 0;
87 }
88
89 //
90 //
91 //
92 //
93 //
94 //
```

The console window is titled "D:\c practice\E1-C Operator and Expression solv.exe" and shows the following output:

```
Enter length in centimeter = 1000
// Length in meter = 10 m
// Length in kilometer = 0.01 km
//
// Process returned 0 (0x0)   execution time : 2.687 s
// Press any key to continue.
//
```

7. Write a C program to input temperature in Centigrade and convert to Fahrenheit.

```
#include<stdio.h>

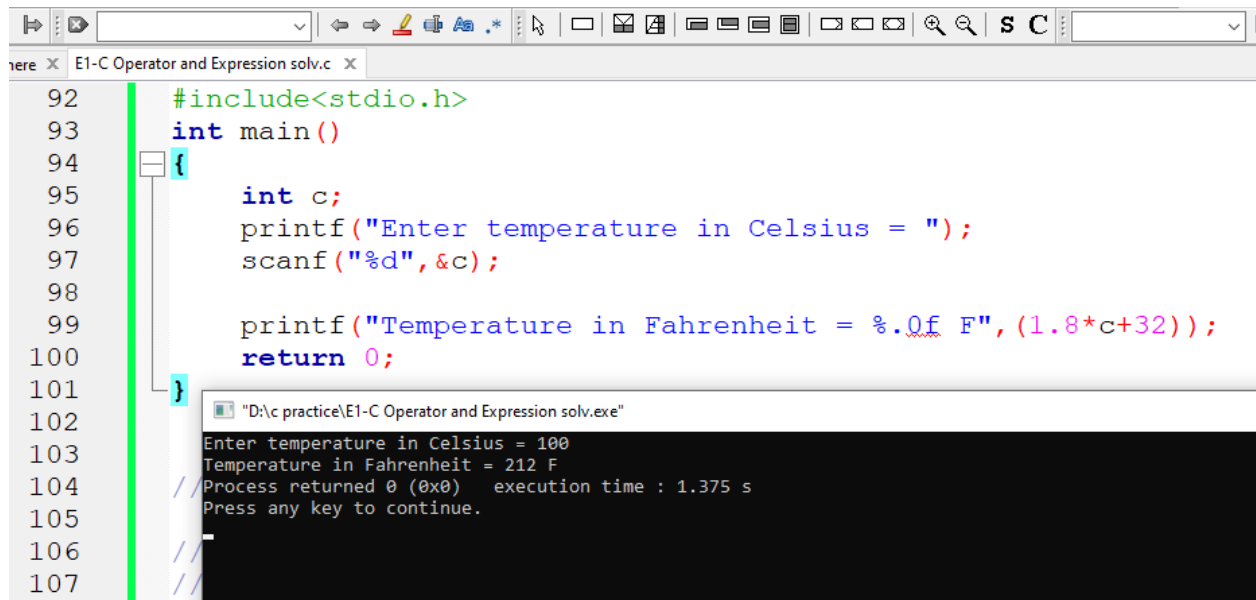
int main()
{
    int c;

    printf("Enter temperature in Celsius = ");

    scanf("%d",&c);


    printf("Temperature in Fahrenheit = %.0f F",(1.8*c+32));

    return 0;
}
```



```
92  #include<stdio.h>
93  int main()
94  {
95      int c;
96      printf("Enter temperature in Celsius = ");
97      scanf("%d",&c);
98
99      printf("Temperature in Fahrenheit = %.0f F",(1.8*c+32));
100     return 0;
101 }
102
103 "D:\c practice\E1-C Operator and Expression solv.exe"
104 Enter temperature in Celsius = 100
105 Temperature in Fahrenheit = 212 F
106 // Process returned 0 (0x0)   execution time : 1.375 s
107 // Press any key to continue.
```

8. Write a C program to input temperature in degree Fahrenheit and convert it to degree Centigrade.

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

```
int main()
```

```
{
```

```
    int f;
```

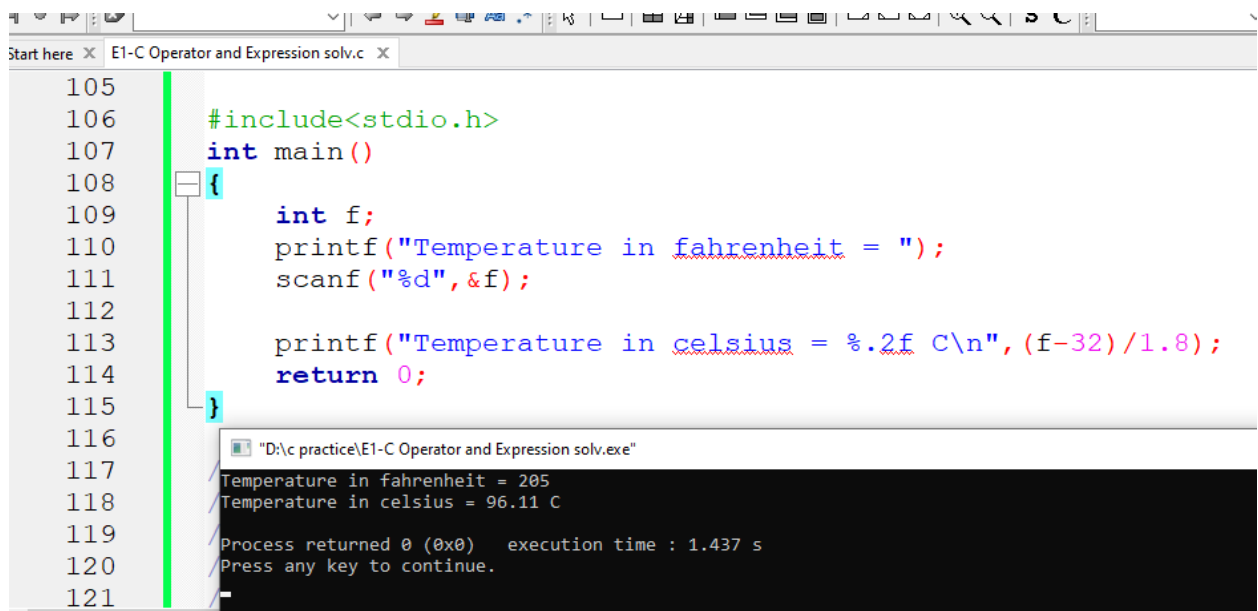
```
    printf("Temperature in fahrenheit = ");
```

```
    scanf("%d",&f);
```

```
    printf("Temperature in celsius = %.2f C\n",(f-32)/1.8);
```

```
    return 0;
```

```
}
```



The screenshot shows a C program editor window titled "E1-C Operator and Expression solv.c" with line numbers 105 to 121. The code is as follows:

```
105
106 #include<stdio.h>
107 int main()
108 {
109     int f;
110     printf("Temperature in fahrenheit = ");
111     scanf("%d",&f);
112
113     printf("Temperature in celsius = %.2f C\n", (f-32)/1.8);
114     return 0;
115 }
116
117
118
119
120
121
```

Below the editor is a console window titled "D:\c practice\E1-C Operator and Expression solv.exe" showing the program's execution:

```
Temperature in fahrenheit = 205
Temperature in celsius = 96.11 C
Process returned 0 (0x0)   execution time : 1.437 s
Press any key to continue.
```


9. Write a C program to input number of days from user and convert it to years, weeks and days.

```
int main()
{
    int a;

    printf("Enter days: ");

    scanf("%d",&a);

    printf("373 days = %d year/s, ",a/365);

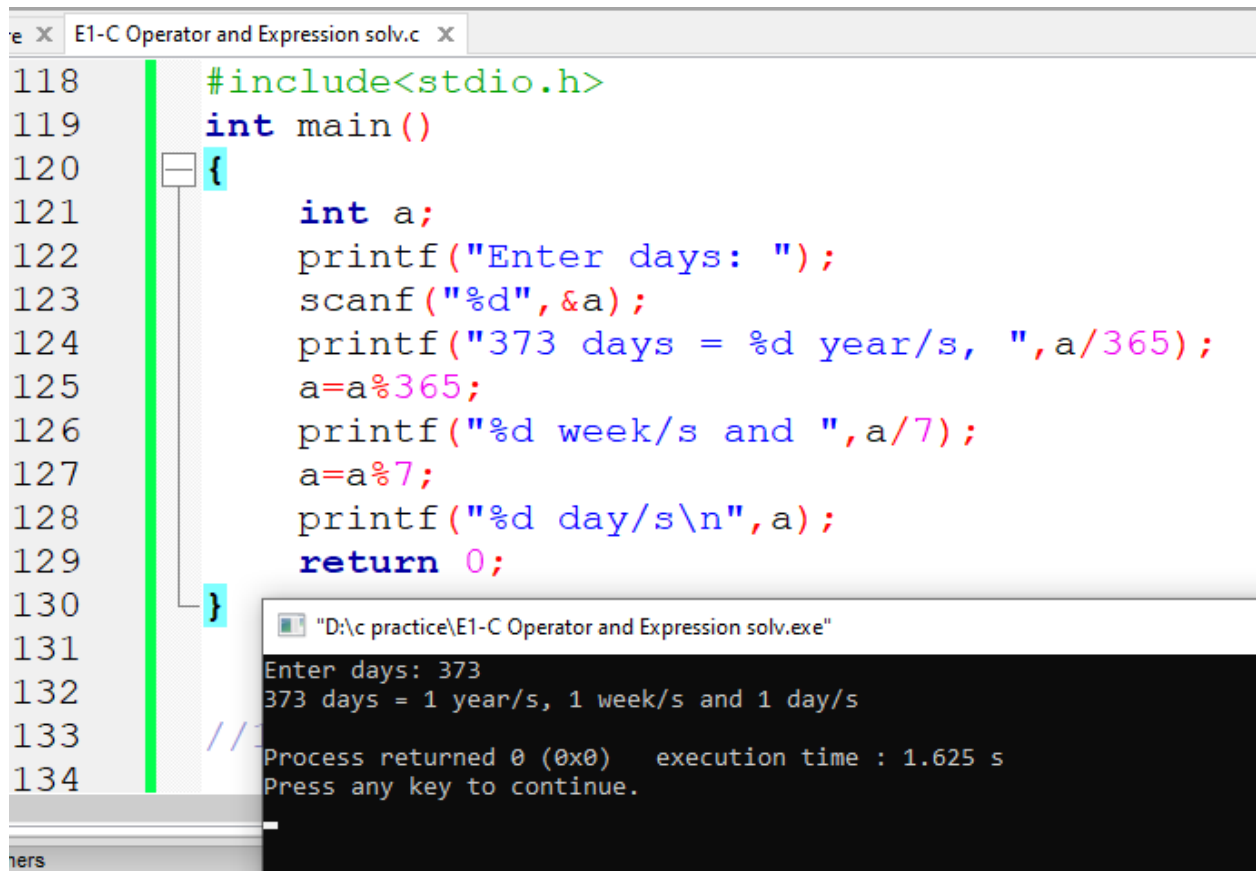
    a=a%365;

    printf("%d week/s and ",a/7);

    a=a%7;

    printf("%d day/s\n",a);

    return 0;
}
```



The screenshot shows a C program editor window titled "E1-C Operator and Expression solv.c". The code is as follows:

```
118 #include<stdio.h>
119 int main()
120 {
121     int a;
122     printf("Enter days: ");
123     scanf("%d",&a);
124     printf("373 days = %d year/s, ",a/365);
125     a=a%365;
126     printf("%d week/s and ",a/7);
127     a=a%7;
128     printf("%d day/s\n",a);
129     return 0;
130 }
131 //
132
133
134
```

Below the editor, a terminal window titled "D:\c practice\E1-C Operator and Expression solv.exe" shows the program's execution:

```
Enter days: 373
373 days = 1 year/s, 1 week/s and 1 day/s
Process returned 0 (0x0)   execution time : 1.625 s
Press any key to continue.
```

10. Write a C Program to input two angles from user and find third angle of the triangle.

```
#include<stdio.h>

int main()
{
    int a,b;

    printf("Enter first angle: ");

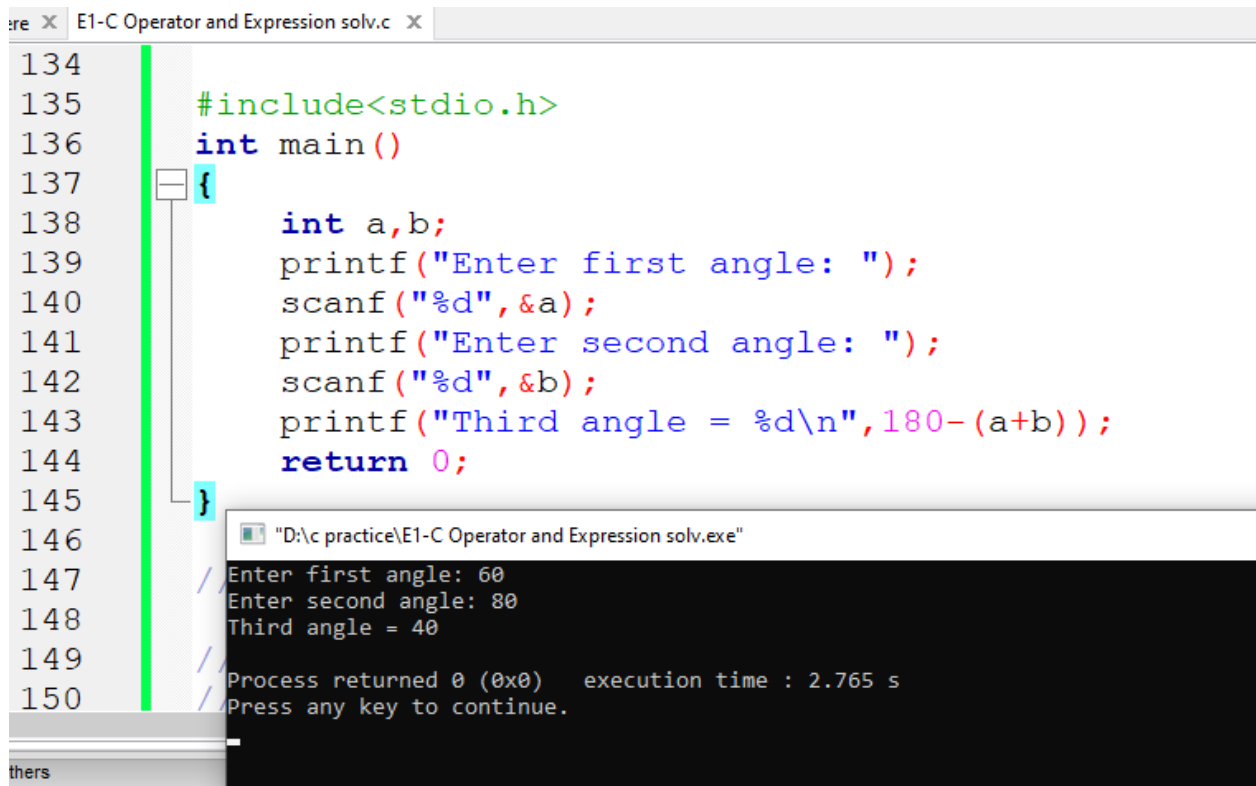
    scanf("%d",&a);

    printf("Enter second angle: ");

    scanf("%d",&b);

    printf("Third angle = %d\n",180-(a+b));

    return 0;
}
```



The image shows a screenshot of a C program being edited and executed. The editor window, titled "E1-C Operator and Expression solv.c", displays the following code:

```
134
135     #include<stdio.h>
136     int main()
137     {
138         int a,b;
139         printf("Enter first angle: ");
140         scanf("%d",&a);
141         printf("Enter second angle: ");
142         scanf("%d",&b);
143         printf("Third angle = %d\n",180-(a+b));
144         return 0;
145     }
146
147
148
149
150
```

Below the editor, a console window titled "D:\c practice\E1-C Operator and Expression solv.exe" shows the program's execution. It prompts for two angles: 60 and 80, and then displays the calculated third angle as 40. The process returned 0 (0x0) with an execution time of 2.765 s. The console also shows a prompt to "Press any key to continue."

11. Write a C program to input base and height of a triangle and find area of the given triangle.

```
#include<stdio.h>

int main()
{
    int b,h;

    float a;

    printf("Enter base of the triangle: ");

    scanf("%d",&b);

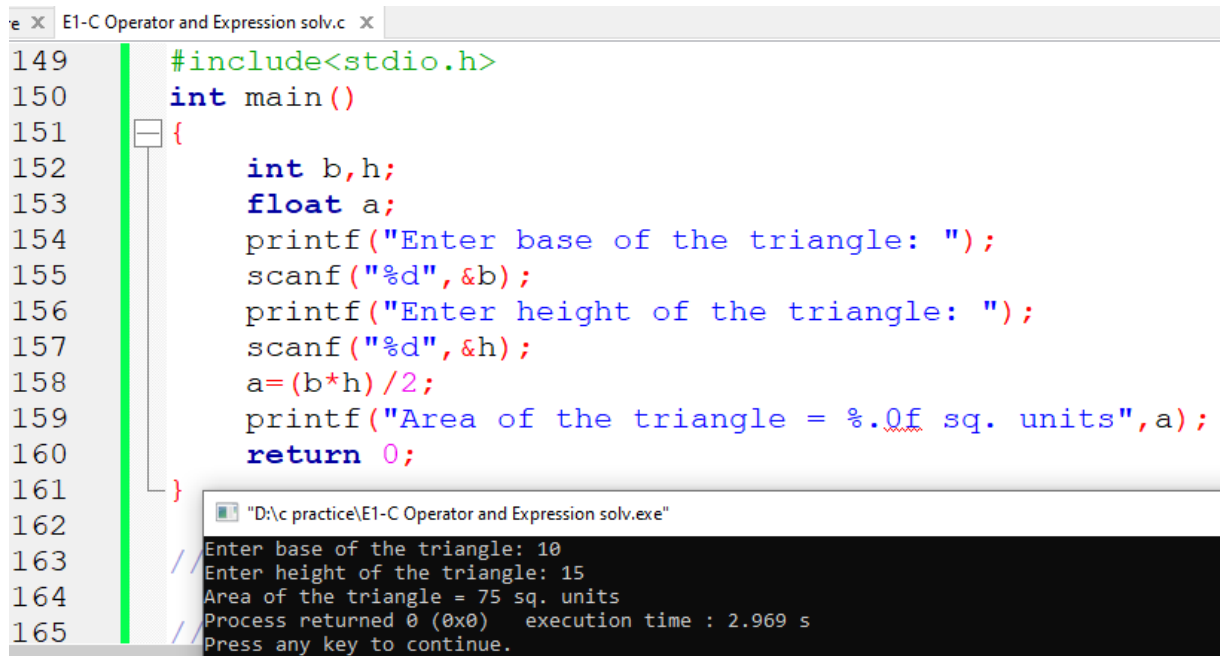
    printf("Enter height of the triangle: ");

    scanf("%d",&h);

    a=(b*h)/2;

    printf("Area of the triangle = %.0f sq. units",a);

    return 0;
}
```



The screenshot shows a code editor window titled "E1-C Operator and Expression solv.c" with line numbers 149 to 165. The code is a C program to calculate the area of a triangle. Below the code editor is a console window titled "D:\c practice\E1-C Operator and Expression solv.exe" showing the program's execution. The user enters 10 for the base and 15 for the height. The program outputs the area as 75 sq. units and then displays "Process returned 0 (0x0) execution time : 2.969 s" and "Press any key to continue."

```
149 #include<stdio.h>
150 int main()
151 {
152     int b,h;
153     float a;
154     printf("Enter base of the triangle: ");
155     scanf("%d",&b);
156     printf("Enter height of the triangle: ");
157     scanf("%d",&h);
158     a=(b*h)/2;
159     printf("Area of the triangle = %.0f sq. units",a);
160     return 0;
161 }
162
163 //
164 //
165 //
```

"D:\c practice\E1-C Operator and Expression solv.exe"

Enter base of the triangle: 10
Enter height of the triangle: 15
Area of the triangle = 75 sq. units
Process returned 0 (0x0) execution time : 2.969 s
Press any key to continue.

12. Write a C program to input side of an equilateral triangle from user and find area of the given triangle.

```
#include<stdio.h>

int main()
{
    int a;

    float A=0;

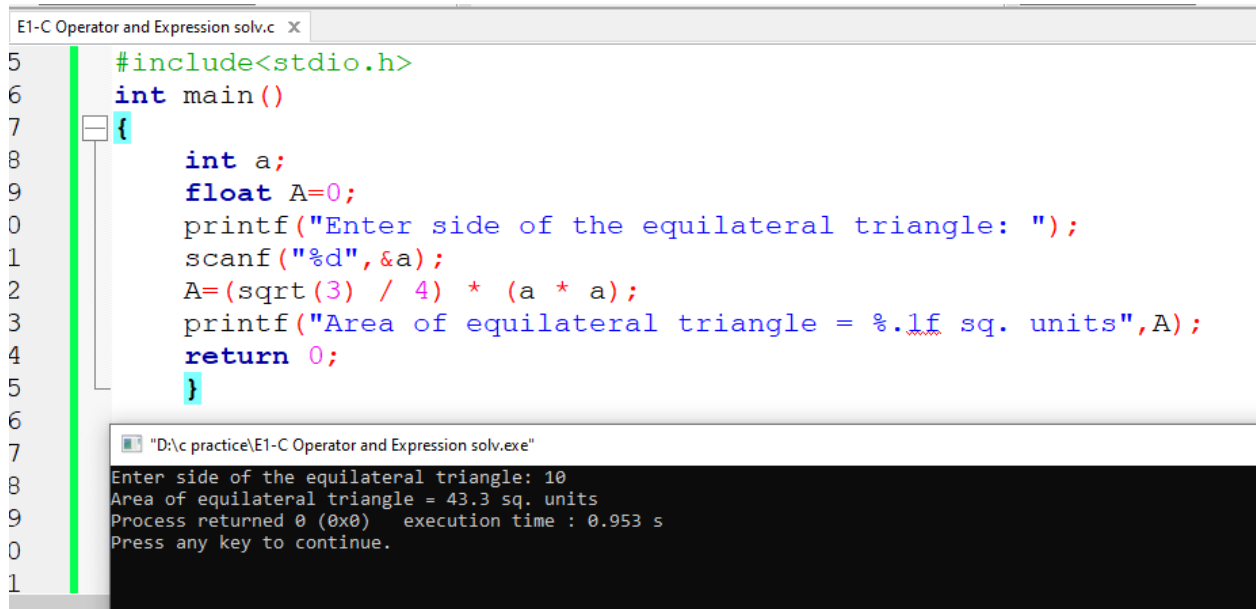
    printf("Enter side of the equilateral triangle: ");

    scanf("%d",&a);

    A=(sqrt(3) / 4) * (a * a);

    printf("Area of equilateral triangle = %.1f sq. units",A);

    return 0;
}
```



The screenshot shows a C program being executed. The top window displays the source code, and the bottom window shows the output.

Source Code:

```
E1-C Operator and Expression solv.c X
5  #include<stdio.h>
6  int main()
7  {
8      int a;
9      float A=0;
10     printf("Enter side of the equilateral triangle: ");
11     scanf("%d",&a);
12     A=(sqrt(3) / 4) * (a * a);
13     printf("Area of equilateral triangle = %.1f sq. units",A);
14     return 0;
15 }
```

Output:

```
"D:\c practice\E1-C Operator and Expression solv.exe"
Enter side of the equilateral triangle: 10
Area of equilateral triangle = 43.3 sq. units
Process returned 0 (0x0)   execution time : 0.953 s
Press any key to continue.
```

13. Write a C program to input marks of five subjects of a student and calculate total, average and percentage of all subjects.

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

```
int main()
```

```
{
```

```
    int a,b,c,d,e;
```

```
    float p;
```

```
    printf("Enter marks of five subjects: ");
```

```
    scanf("%d %d %d %d %d",&a,&b,&c,&d,&e);
```

```
    printf("Total = %d\n",a+b+c+d+e);
```

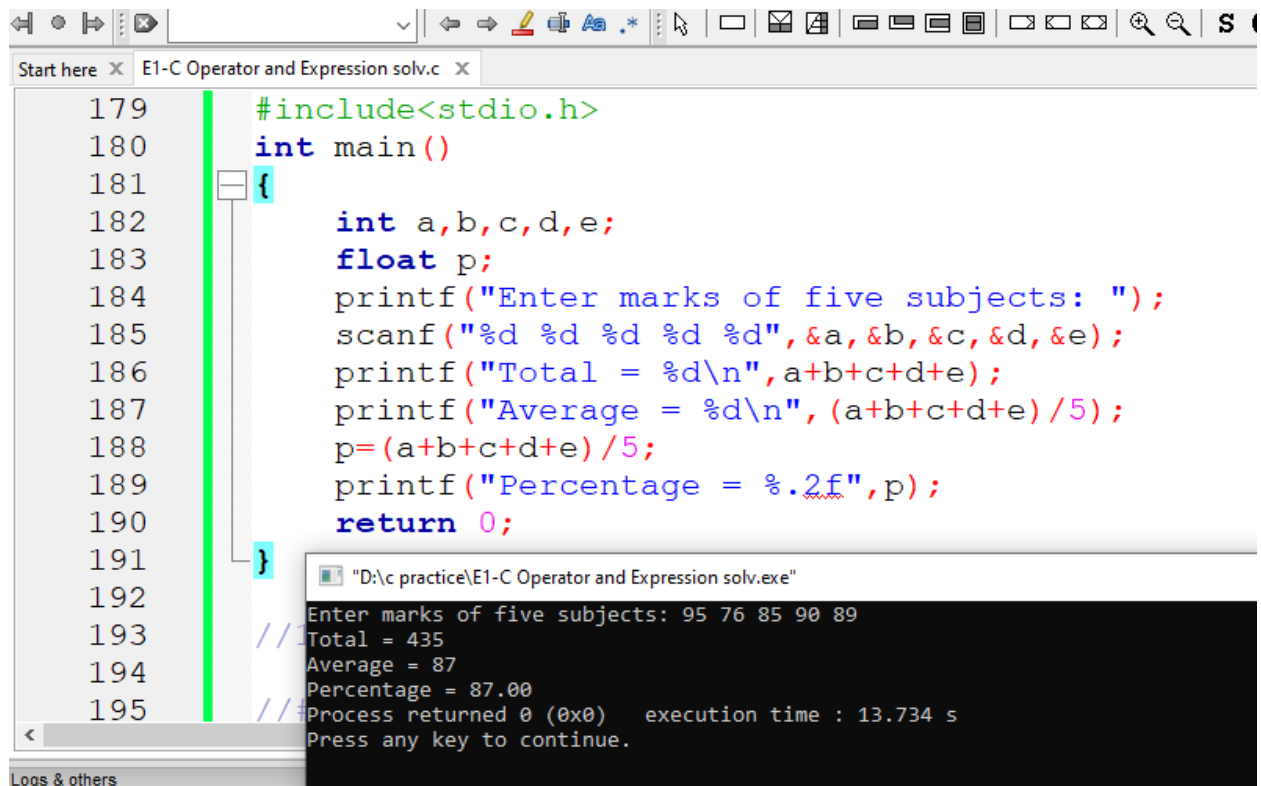
```
    printf("Average = %d\n",(a+b+c+d+e)/5);
```

```
    p=(a+b+c+d+e)/5;
```

```
    printf("Percentage = %.2f",p);
```

```
    return 0;
```

```
}
```



The screenshot shows a C program in a text editor with a toolbar at the top. The code is as follows:

```
179 #include<stdio.h>
180 int main()
181 {
182     int a,b,c,d,e;
183     float p;
184     printf("Enter marks of five subjects: ");
185     scanf("%d %d %d %d %d",&a,&b,&c,&d,&e);
186     printf("Total = %d\n",a+b+c+d+e);
187     printf("Average = %d\n", (a+b+c+d+e)/5);
188     p=(a+b+c+d+e)/5;
189     printf("Percentage = %.2f",p);
190     return 0;
191 }
```

Below the editor is a console window titled "D:\c practice\E1-C Operator and Expression solv.exe". It displays the program's output for the input marks 95, 76, 85, 90, and 89:

```
Enter marks of five subjects: 95 76 85 90 89
// Total = 435
// Average = 87
// Percentage = 87.00
// Process returned 0 (0x0)   execution time : 13.734 s
// Press any key to continue.
```

The bottom of the window shows a "Logs & others" tab.

14. Write a C program to input principle, time and rate (P, T, R) from user and find Simple Interest.

```
#include<stdio.h>

int main()
{
    int p,t;

    float r,SI;

    printf("Enter principle: ");

    scanf("%d",&p);

    printf("Enter time: ");

    scanf("%d",&t);

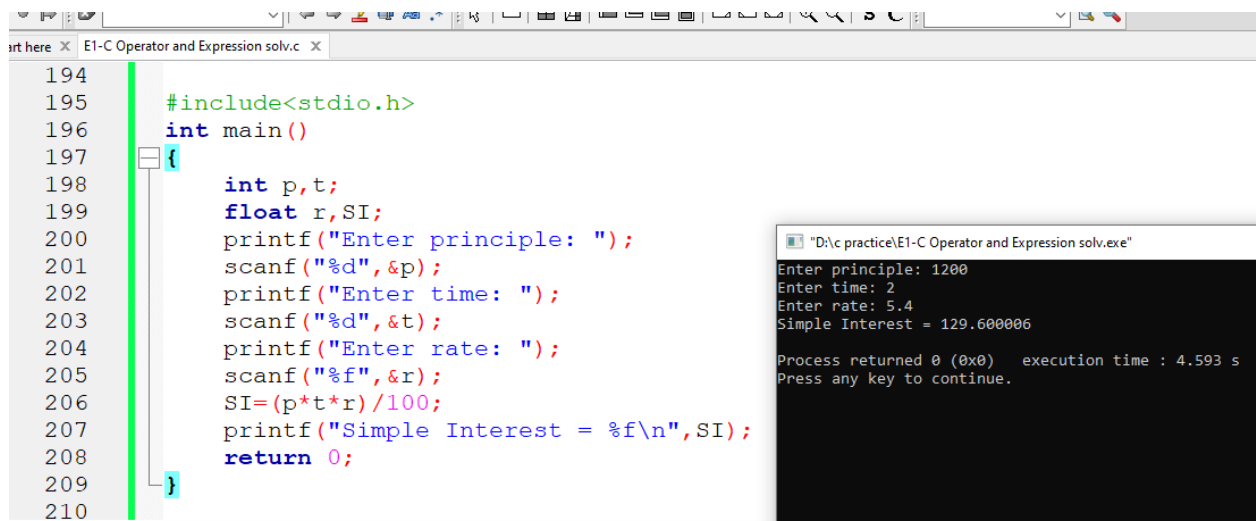
    printf("Enter rate: ");

    scanf("%f",&r);

    SI=(p*t*r)/100;

    printf("Simple Interest = %f\n",SI);

    return 0;
}
```



The image shows a screenshot of a C program being edited in a text editor and its execution output in a separate window. The editor window, titled "E1-C Operator and Expression solv.c", displays the code from the previous block with line numbers 194 to 210. The code calculates simple interest based on user input for principle, time, and rate. The execution window, titled "D:\c practice\E1-C Operator and Expression solv.exe", shows the program's output for the inputs 1200, 2, and 5.4, resulting in a simple interest of 129.600006. The process returned 0 and took 4.593 seconds to execute.

```
194
195     #include<stdio.h>
196     int main()
197     {
198         int p,t;
199         float r,SI;
200         printf("Enter principle: ");
201         scanf("%d",&p);
202         printf("Enter time: ");
203         scanf("%d",&t);
204         printf("Enter rate: ");
205         scanf("%f",&r);
206         SI=(p*t*r)/100;
207         printf("Simple Interest = %f\n",SI);
208         return 0;
209     }
210
```

"D:\c practice\E1-C Operator and Expression solv.exe"

```
Enter principle: 1200
Enter time: 2
Enter rate: 5.4
Simple Interest = 129.600006

Process returned 0 (0x0)   execution time : 4.593 s
Press any key to continue.
```

15. Write a C program to input principle (amount), time and rate (P, T, R) and find Compound Interest.

```
#include<math.h>

#include<stdio.h>

int main()

{

    int p,t;

    float r,CI=0,x;

    printf("Enter principle (amount): ");

    scanf("%d",&p);

    printf("Enter time: ");

    scanf("%d",&t);

    printf("Enter rate: ");

    scanf("%f",&r);

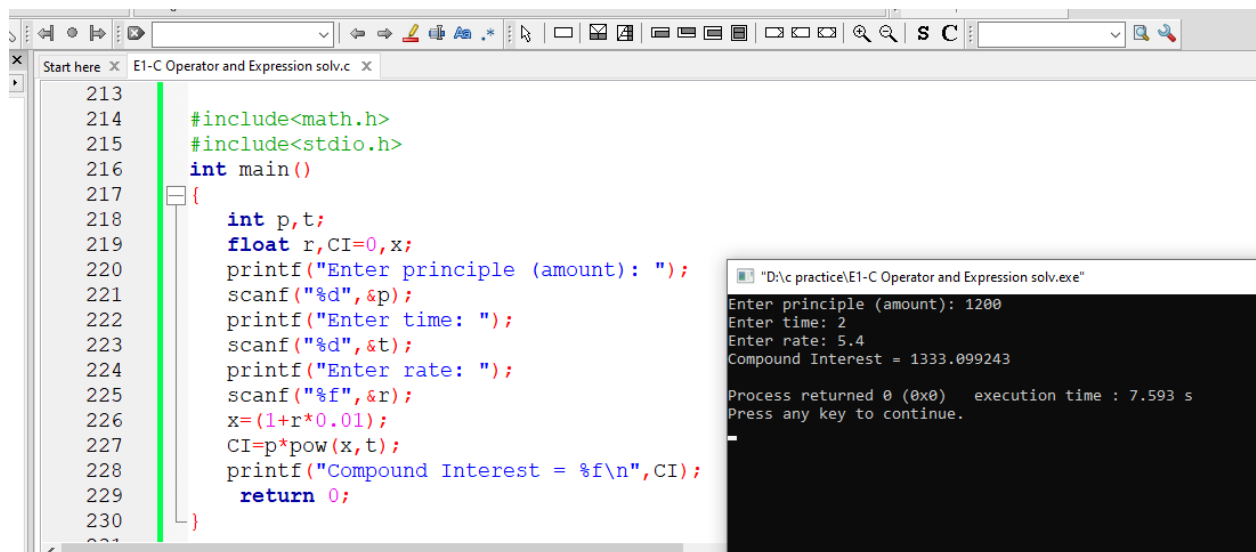
    x=(1+r*0.01);

    CI=p*pow(x,t);

    printf("Compound Interest = %f\n",CI);

    return 0;

}
```



The screenshot shows a code editor with the following C program:

```
213
214     #include<math.h>
215     #include<stdio.h>
216     int main()
217     {
218         int p,t;
219         float r,CI=0,x;
220         printf("Enter principle (amount): ");
221         scanf("%d",&p);
222         printf("Enter time: ");
223         scanf("%d",&t);
224         printf("Enter rate: ");
225         scanf("%f",&r);
226         x=(1+r*0.01);
227         CI=p*pow(x,t);
228         printf("Compound Interest = %f\n",CI);
229         return 0;
230     }
```

The output window shows the execution results:

```
"D:\c practice\E1-C Operator and Expression solv.exe"
Enter principle (amount): 1200
Enter time: 2
Enter rate: 5.4
Compound Interest = 1333.099243
Process returned 0 (0x0)   execution time : 7.593 s
Press any key to continue.
```