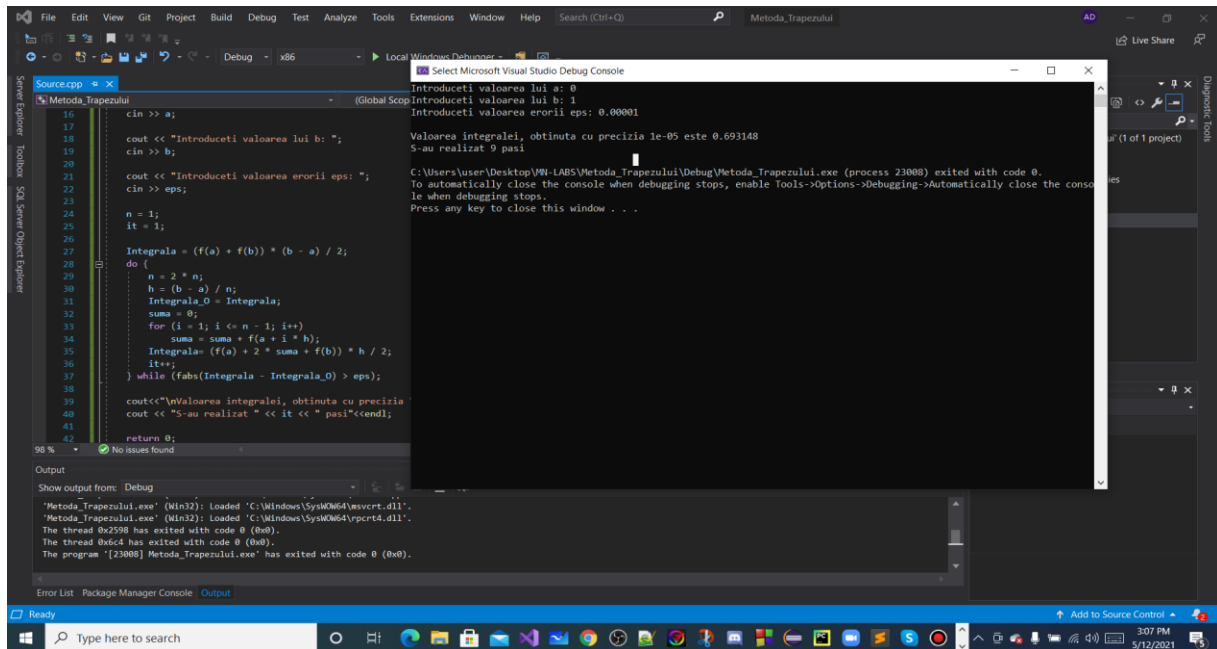


## Laborator 11

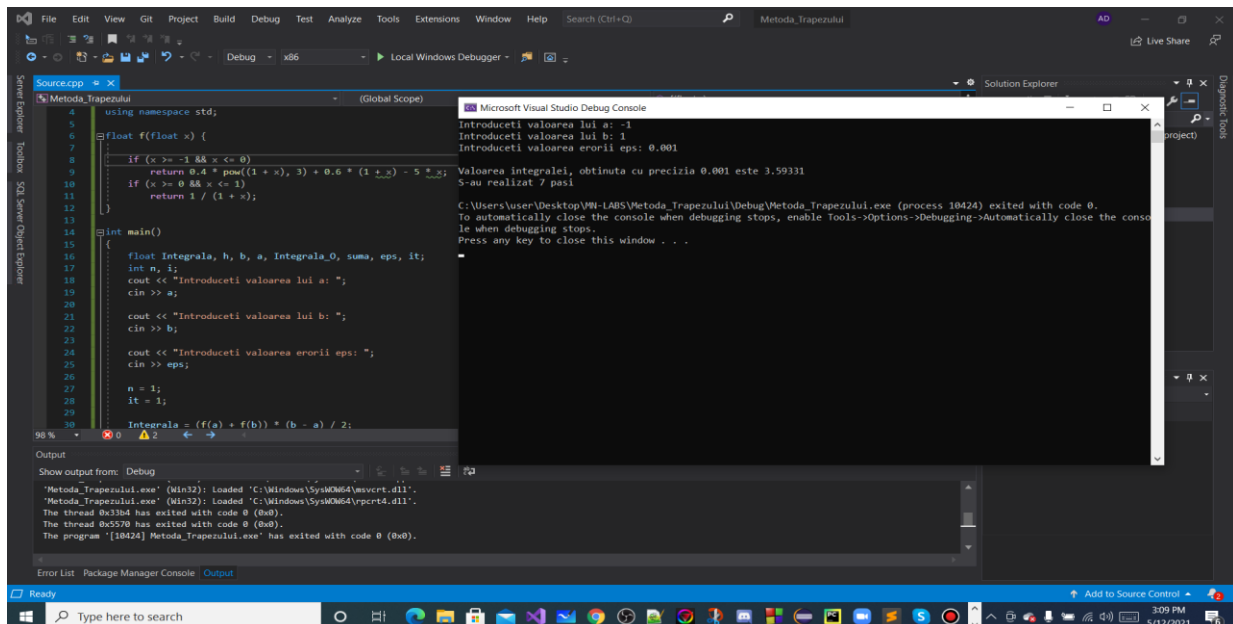
### Date intrare/iesire-Metoda Trapezului:

#### Rezultat Exemplu 1 din platform de laborator:



```
Sourcecpp
Metoda_Trapezului
16 cin >> a;
17
18 cout << "Introduceti valoarea lui b: ";
19 cin >> b;
20
21 cout << "Introduceti valoarea erorii eps: ";
22 cin >> eps;
23
24 n = 1;
25 it = 1;
26
27 Integrala = (f(a) + f(b)) * (b - a) / 2;
28 do {
29     n = 2 * n;
30     h = (b - a) / n;
31     Integrala_0 = Integrala;
32     suma = 0;
33     for (i = 1; i <= n - 1; i++)
34         suma = suma + f(a + i * h);
35     Integrala = (f(a) + 2 * suma + f(b)) * h / 2;
36     i++;
37 } while (fabs(Integrala - Integrala_0) > eps);
38
39 cout << "Valoarea integralei, obtinuta cu precizia ";
40 cout << "5-au realizat " << it << " pasi"<<endl;
41
42 return 0;
43
Output
'Metoda_Trapezului.exe' (Win32): Loaded 'C:\Windows\System32\user32.dll'.
'Metoda_Trapezului.exe' (Win32): Loaded 'C:\Windows\System32\GDI32.dll'.
The thread 0x2598 has exited with code 0 (0x0).
The thread 0x6c4 has exited with code 0 (0x0).
The program '[23008] Metoda_Trapezului.exe' has exited with code 0 (0x0).
Error List Package Manager Console Output
```

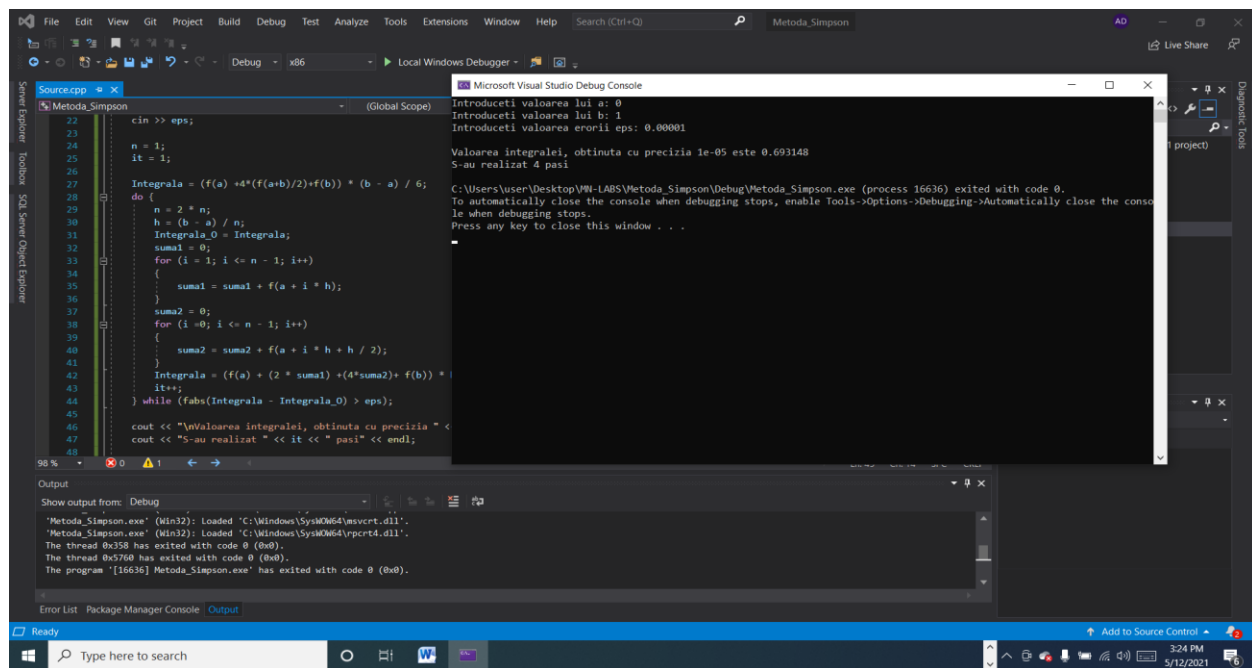
#### Rezultat Exemplu 2 din platform de laborator:



```
Sourcecpp
Metoda_Trapezului
4 using namespace std;
5
6 float f(float x) {
7     if (x >= -1.88 && x <= 0)
8         return 0.4 * pow((1 + x), 3) + 0.6 * (1 + x) - 5 * x;
9     if (x >= 0.88 && x <= 1)
10         return 1 / (1 + x);
11 }
12
13 int main()
14 {
15     float Integrala, h, b, a, Integrala_0, suma, eps, it;
16     int n, i;
17     cout << "Introduceti valoarea lui a: ";
18     cin >> a;
19
20     cout << "Introduceti valoarea lui b: ";
21     cin >> b;
22
23     cout << "Introduceti valoarea erorii eps: ";
24     cin >> eps;
25
26     n = 1;
27     it = 1;
28
29     Integrala = (f(a) + f(b)) * (b - a) / 2;
30
Output
'Metoda_Trapezului.exe' (Win32): Loaded 'C:\Windows\System32\user32.dll'.
'Metoda_Trapezului.exe' (Win32): Loaded 'C:\Windows\System32\GDI32.dll'.
The thread 0x3304 has exited with code 0 (0x0).
The thread 0x5570 has exited with code 0 (0x0).
The program '[18424] Metoda_Trapezului.exe' has exited with code 0 (0x0).
Error List Package Manager Console Output
```

## Date intrare/iesire-Metoda Simpson:

### Rezultat Exemplu 1 din platform de laborator:

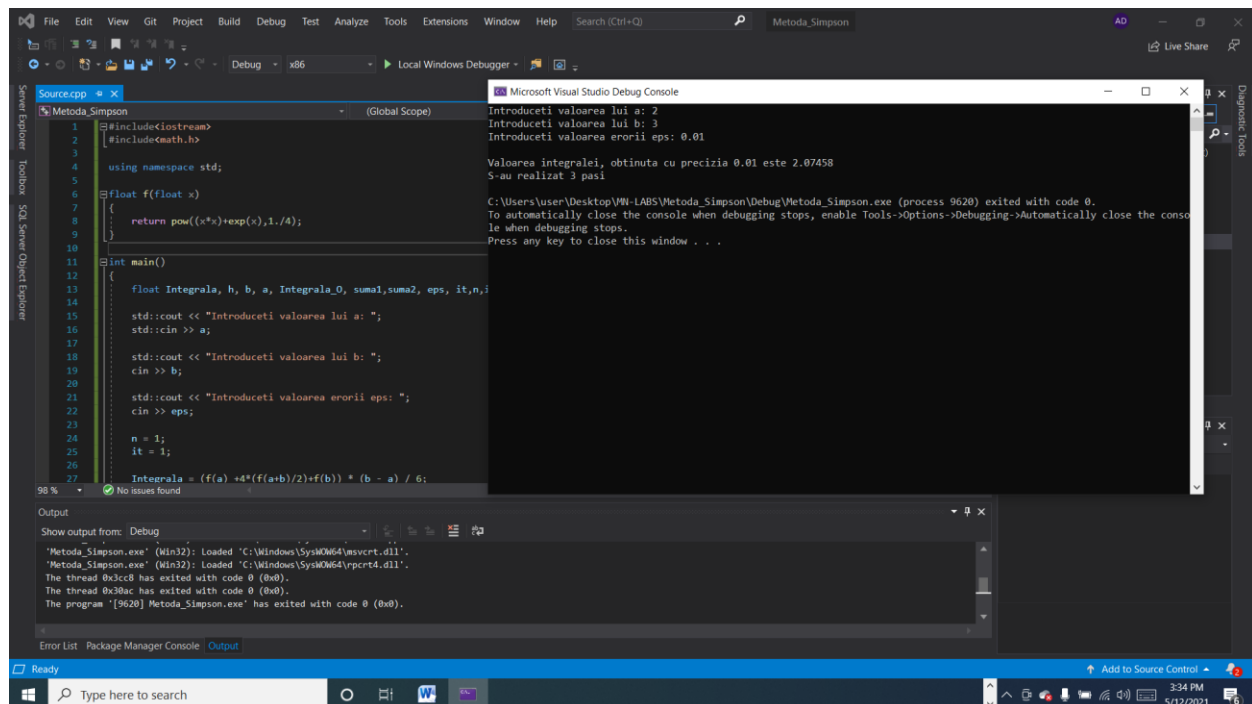


```
Source.cpp
Metoda_Simpson
22  cin >> eps;
23
24  n = 1;
25  it = 1;
26
27  Integrala = (f(a) + 4*(f(a+b)/2) + f(b)) * (b - a) / 6;
28  do {
29      n = 2 * n;
30      h = (b - a) / n;
31      Integrala_0 = Integrala;
32      suma1 = 0;
33      for (i = 1; i <= n - 1; i++)
34      {
35          suma1 = suma1 + f(a + i * h);
36      }
37      suma2 = 0;
38      for (i = 0; i <= n - 1; i++)
39      {
40          suma2 = suma2 + f(a + i * h + h / 2);
41      }
42      Integrala = (f(a) + (2 * suma1) + (4*suma2) + f(b)) * h / 3;
43      it++;
44  } while (fabs(Integrala - Integrala_0) > eps);
45
46  cout << "Valoarea integralei, obtinuta cu precizia " << eps << endl;
47  cout << "S-au realizat " << it << " pasi" << endl;
48
```

```
Microsoft Visual Studio Debug Console
Introduceti valoarea lui a: 0
Introduceti valoarea lui b: 1
Introduceti valoarea erorii eps: 0.00001
Valoarea integralei, obtinuta cu precizia 1e-05 este 0.693148
S-au realizat 4 pasi
C:\Users\User\Desktop\VN-LABS\Metoda_Simpson\Debug\Metoda_Simpson.exe (process 16636) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

```
Output
Show output from: Debug
'Metoda_Simpson.exe' (Win32): Loaded 'C:\Windows\System32\user32.dll'.
'Metoda_Simpson.exe' (Win32): Loaded 'C:\Windows\System32\GDI32.dll'.
The thread 0x358 has exited with code 0 (0x0).
The thread 0x5760 has exited with code 0 (0x0).
The program '[16636] Metoda_Simpson.exe' has exited with code 0 (0x0).
```

### Rezultat Exemplu 2 din platform de laborator:



```
Source.cpp
Metoda_Simpson
1  #include<iostream>
2  #include<math.h>
3
4  using namespace std;
5
6  float f(float x)
7  {
8      return pow((x*x)+exp(x),1./4);
9  }
10
11  int main()
12  {
13      float Integrala, h, b, a, Integrala_0, suma1, suma2, eps, it, n;
14
15      std::cout << "Introduceti valoarea lui a: ";
16      std::cin >> a;
17
18      std::cout << "Introduceti valoarea lui b: ";
19      std::cin >> b;
20
21      std::cout << "Introduceti valoarea erorii eps: ";
22      std::cin >> eps;
23
24      n = 1;
25      it = 1;
26
27  Integrala = (f(a) + 4*(f(a+b)/2) + f(b)) * (b - a) / 6;
```

```
Microsoft Visual Studio Debug Console
Introduceti valoarea lui a: 2
Introduceti valoarea lui b: 3
Introduceti valoarea erorii eps: 0.01
Valoarea integralei, obtinuta cu precizia 0.01 este 2.07458
S-au realizat 3 pasi
C:\Users\User\Desktop\VN-LABS\Metoda_Simpson\Debug\Metoda_Simpson.exe (process 9620) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

```
Output
Show output from: Debug
'Metoda_Simpson.exe' (Win32): Loaded 'C:\Windows\System32\user32.dll'.
'Metoda_Simpson.exe' (Win32): Loaded 'C:\Windows\System32\GDI32.dll'.
The thread 0x3c8 has exited with code 0 (0x0).
The thread 0x3bc has exited with code 0 (0x0).
The program '[9620] Metoda_Simpson.exe' has exited with code 0 (0x0).
```