

LAPORAN PRAKTIKUM
Modul 1
“CODE BLOCKS IDE &
Pengenalan Bahasa C++ (Bagian Pertama)”



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PROGRAM STUDI S1 SOFTWARE ENGINEERING
FAKULTAS INFORMATIKA
TELKOM UNIVERSITY
PURWOKERTO
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A. Tujuan

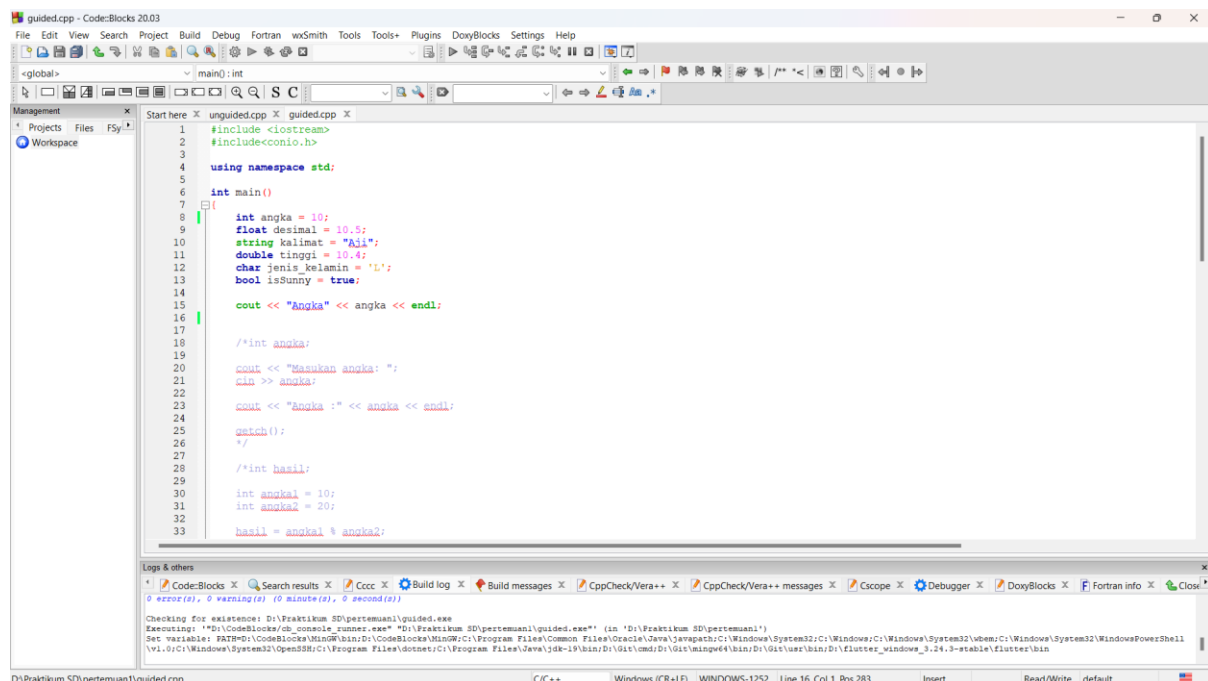
1. Mengenal environment Code Blocks dengan baik.
2. Memahami cara menggunakan dan troubleshooting Code Blocks IDE.
3. Mengimplementasikan operator-operator dalam program.
4. Memahami cara membuat program sederhana dalam bahasa C++.
5. Memahami penggunaan tipe data dan variabel dalam bahasa C++.
6. Menggunakan operator-operator input/output dengan tepat.
7. Memahami dan mengimplementasikan fungsi kondisional dalam program.

B. Landasan Teori

Code::Blocks adalah sebuah Integrated Development Environment (IDE) yang bersifat open-source, dirancang untuk memberikan kemudahan bagi programmer dalam mengembangkan aplikasi berbasis bahasa C, C++, dan Fortran. IDE ini menawarkan berbagai fitur, seperti editor kode, debugger, dan manajemen proyek yang terintegrasi dengan compiler GCC (GNU Compiler Collection). Dengan tampilan antarmuka yang intuitif, Code::Blocks mendukung penulisan, debugging, dan kompilasi program dengan efisiensi yang tinggi.

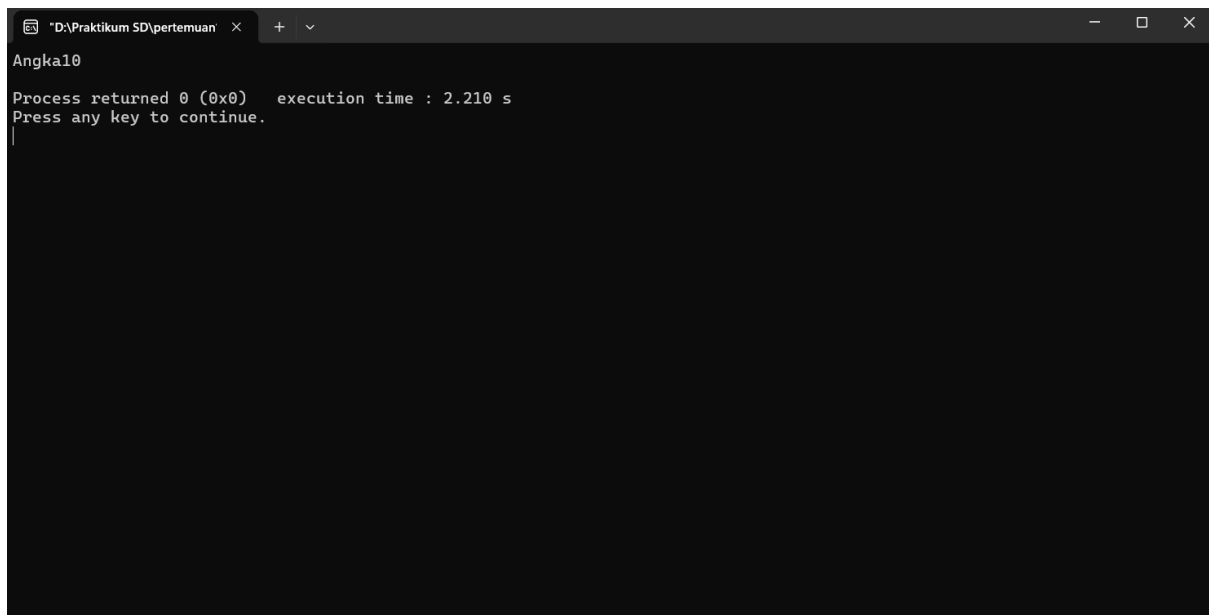
C. Guided

Source Code :



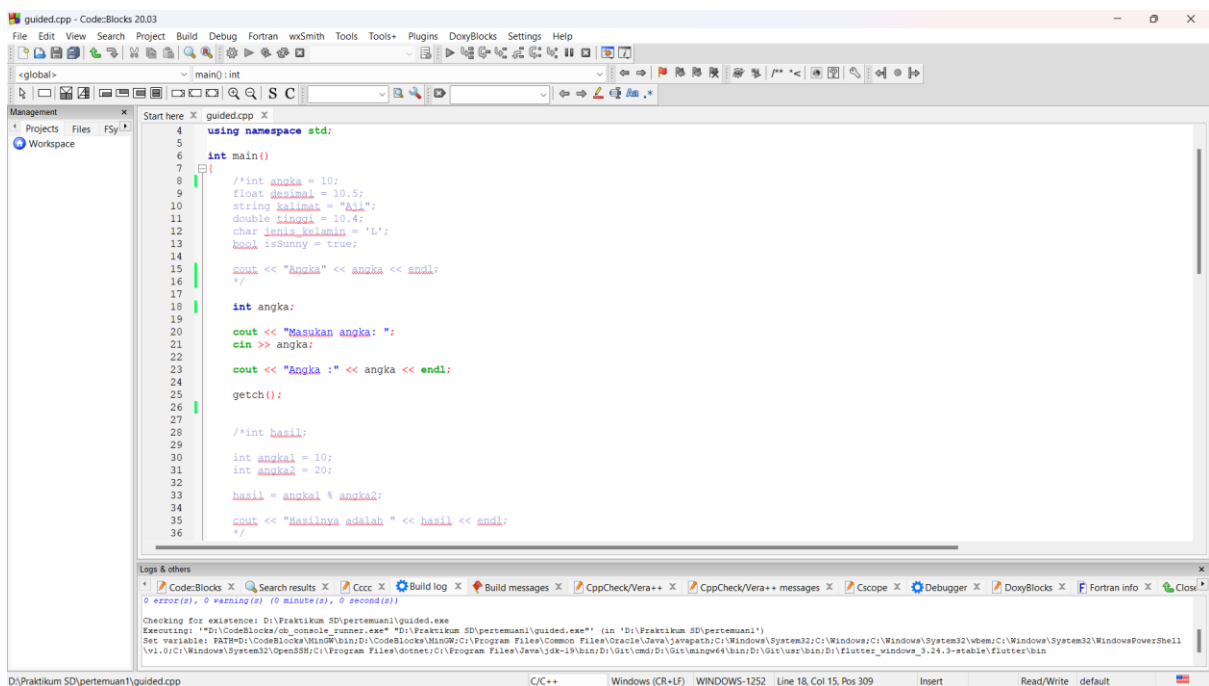
```
1 #include <iostream>
2 #include <conio.h>
3
4 using namespace std;
5
6 int main()
7 {
8     int angka = 10;
9     float desimal = 10.5;
10    string kalimat = "Aji";
11    double tinggi = 10.4;
12    char jenis_kelamin = 'L';
13    bool isSunny = true;
14
15    cout << "Angka" << angka << endl;
16
17    /*int angka;
18
19    cout << "Masukan angka: ";
20    cin >> angka;
21
22    cout << "Angka : " << angka << endl;
23
24    getch();
25    */
26
27    /*int hasil;
28
29    int angka1 = 10;
30    int angka2 = 20;
31
32    hasil = angka1 + angka2;
33    */
```

Output :



```
"D:\Praktikum SD\pertemuan" x + v
Angka10
Process returned 0 (0x0) execution time : 2.210 s
Press any key to continue.
```

Source Code :



```
guided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> main0: int
Management
Projects Files Fsy
Workspace
4 using namespace std;
5
6 int main()
7 {
8     /*int angka = 10;
9     float decimal = 10.5;
10    string kalimat = "Hai";
11    double bilangan = 10.4;
12    char jenis_kelamin = 'L';
13    bool isSunny = true;
14
15    cout << "Angka" << angka << endl;
16    */
17
18    int angka;
19
20    cout << "Masukan angka: ";
21    cin >> angka;
22
23    cout << "Angka : " << angka << endl;
24    getch();
25
26    /*int hasil;
27
28    int angka1 = 10;
29    int angka2 = 20;
30
31    hasil = angka1 % angka2;
32
33    cout << "Hasilnya adalah " << hasil << endl;
34    */
35
36
Logs & others
Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X DoxyBlocks X Fortran info X Close
0 error(s), 0 warning(s), 0 minute(s), 0 second(s)
Checking for existence: D:\Praktikum SD\pertemuan\guided.exe
Executing: "D:\CodeBlocks\cb_console_runner.exe" "D:\Praktikum SD\pertemuan\guided.exe" (in "D:\Praktikum SD\pertemuan")
Set variable: PATH=D:\CodeBlocks\MinGW\bin;D:\CodeBlocks\MinGW\bin;D:\Program Files\Common Files\Oracle\Java\javapath;C:\Windows\System32\cmd;C:\Windows\System32\vbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Windows\System32\OpenSSH\bin;C:\Program Files\dotnet\bin;C:\Program Files\Java\jdk-19\bin;D:\Git\cmd;D:\Git\mingw64\bin;D:\Git\user\bin;D:\flutter_windows_3.24.3-stable\flutter\bin
D:\Praktikum SD\pertemuan\guided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 18, Col 15, Pos 309 Insert Read/Write default
```

Output :

```
"D:\Praktikum SD\pertemuan" x + v
Masukan angka: 29
Angka :29

Process returned 0 (0x0)   execution time : 6.742 s
Press any key to continue.
```

Source Code :

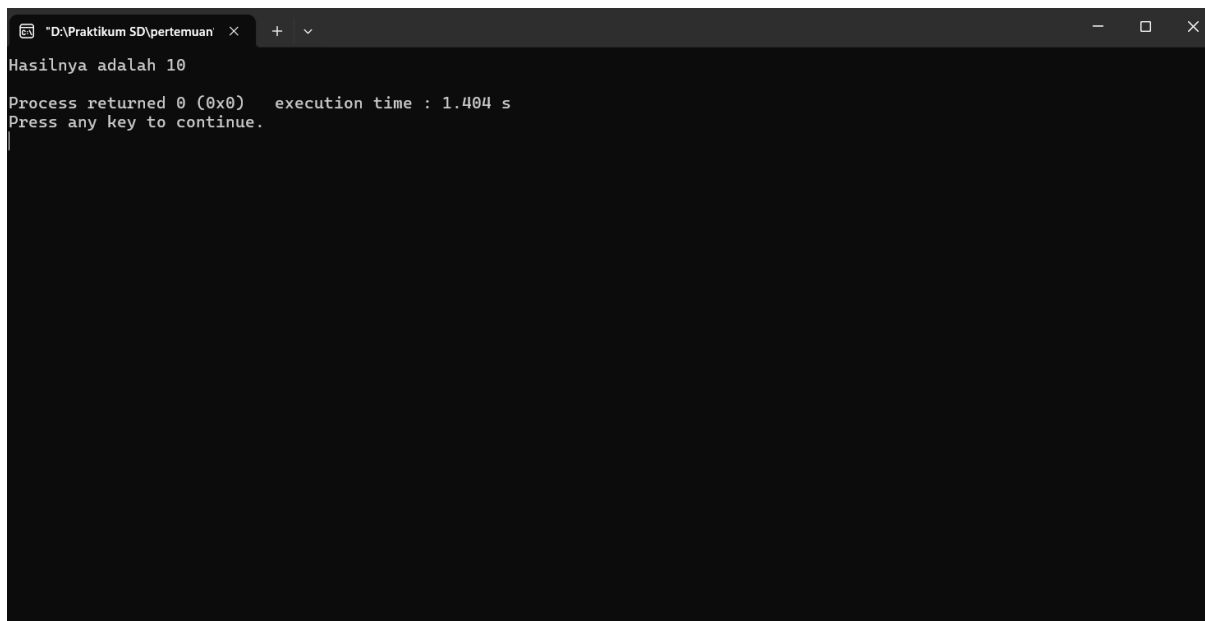
The screenshot shows the Code::Blocks IDE with the file 'guided.cpp' open. The code is a C++ program that takes an input number and performs a bitwise AND operation. The output window at the bottom shows the execution results.

```
13 bool isSunny = true;
14
15 cout << "angka" << angka << endl;
16
17
18 /*int angka;
19
20 cout << "Masukan angka: ";
21 cin >> angka;
22
23 cout << "angka : " << angka << endl;
24
25 getch();
26 */
27
28 int hasil;
29
30 int angka1 = 10;
31 int angka2 = 20;
32
33 hasil = angka1 & angka2;
34
35 cout << "Hasilnya adalah " << hasil << endl;
36
37
38 //operator perbandingan
39
40 /*int angka1 = 7;
41 int angka2 = 29;
42
43 bool hasil = (angka1 != angka2);
44
45 cout << "Hasilnya adalah: " << boolalpha << hasil << endl;
```

Output Window:

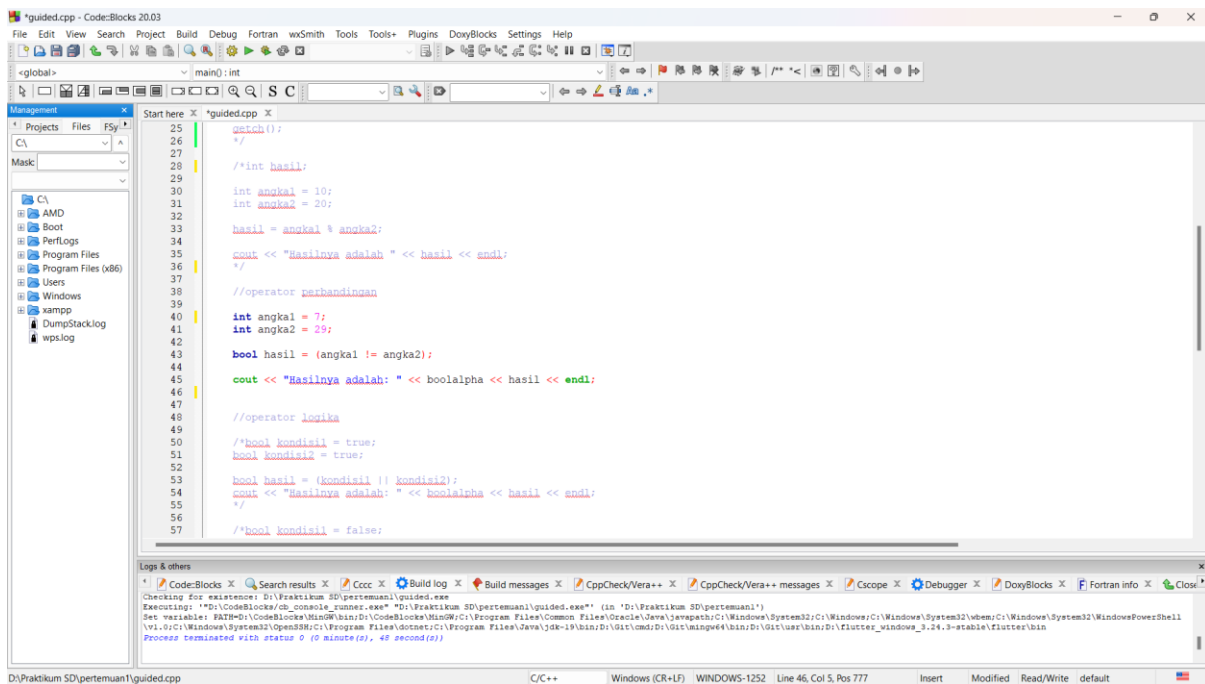
```
Checking for existence: D:\Praktikum SD\pertemuan\guided.exe
Executing: "D:\CodeBlocks\cb_console_runner.exe" "D:\Praktikum SD\pertemuan\guided.exe" (in "D:\Praktikum SD\pertemuan")
Set variable: PATH=D:\CodeBlocks\bin;D:\CodeBlocks\bin\Program Files\Common Files\Oracle\Java\javapath;C:\Windows\System32\cmd;C:\Windows\System32\vbem;C:\Windows\System32\WindowsPowerShell\
Process terminated with status 0 (1 minute(s), 41 second(s))
```

Output :




```
"D:\Praktikum SD\pertemuan" x + v
Hasilnya adalah 10
Process returned 0 (0x0)   execution time : 1.404 s
Press any key to continue.
```

Source code :



```
*guided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global> main0: int
25 getch();
26 */
27
28 /*int hasil;
29
30 int angka1 = 10;
31 int angka2 = 20;
32
33 hasil = angka1 % angka2;
34
35 cout << "Hasilnya adalah " << hasil << endl;
36 */
37
38 //operator perbandingan
39
40 int angka1 = 7;
41 int angka2 = 29;
42
43 bool hasil = (angka1 != angka2);
44
45 cout << "Hasilnya adalah: " << boolalpha << hasil << endl;
46
47
48 //operator logika
49
50 /*bool kondisi1 = true;
51 bool kondisi2 = true;
52
53 bool hasil = (kondisi1 || kondisi2);
54 cout << "Hasilnya adalah: " << boolalpha << hasil << endl;
55 */
56
57 /*bool kondisi1 = false;
```

Output :



```
"D:\Praktikum SD\pertemuan" x + v
Hasilnya adalah: true
Process returned 0 (0x0) execution time : 0.705 s
Press any key to continue.
|
```

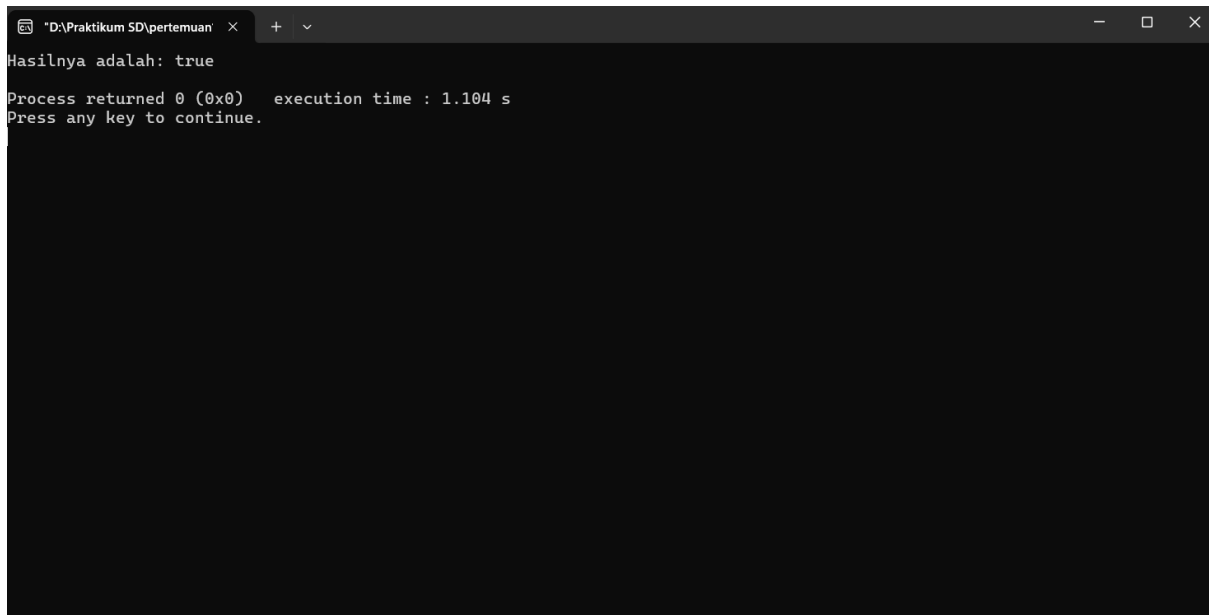
Source code :

The image shows a screenshot of a C++ IDE with the file `guided.cpp` open. The code is written in C++ and includes comments in Indonesian. The code performs the following operations:

- Includes `<iostream>` and `<conio.h>`.
- Defines a constant `angka1` with the value 7 and a variable `angka2` with the value 29.
- Calculates `hasil` as the sum of `angka1` and `angka2`.
- Displays the result using `cout` and `endl`.
- Asks the user for a condition (`kondisi`) using `cin`.
- Checks if `kondisi` is 1 or 2. If so, it calculates `hasil` as the difference between `angka1` and `angka2`.
- Displays the result using `cout` and `endl`.
- Asks the user for a value (`kata`) using `cin`.
- Checks if `kata` is "haloo". If so, it displays "Kata asalmu" using `cout` and `endl`.

The IDE interface includes a menu bar (File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoyBlocks, Settings, Help), a toolbar, a file explorer on the left showing the project structure, and a terminal window at the bottom. The terminal shows the command `g++ -std=c++11 guided.cpp` and the output `Checking for existence: D:\Praktikum SD\pertemuan1\guided.exe`.

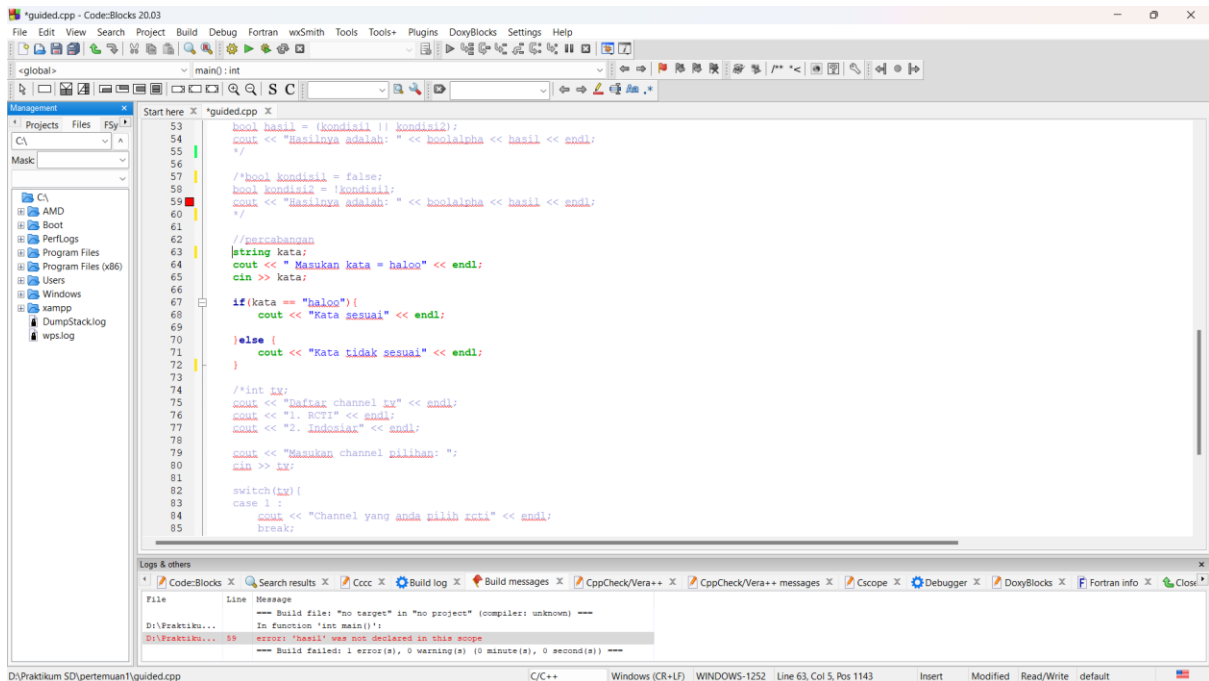
Output :



```
"D:\Praktikum SD\pertemuan <div data-bbox="116 397 231 414" data-label="Text">

Source code :


```



```
*guided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<div data-bbox="116 728 878 730" data-label="Page-Footer">

D:\Praktikum SD\pertemuan1\guided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 63, Col 5, Pos 1143 Insert Modified Read/Write default


```

Output :

```
"D:\Praktikum SD\pertemuan" x + v
Masukan kata = haloo
haloo
Kata sesuai

Process returned 0 (0x0)   execution time : 4.018 s
Press any key to continue.
```

Source code :

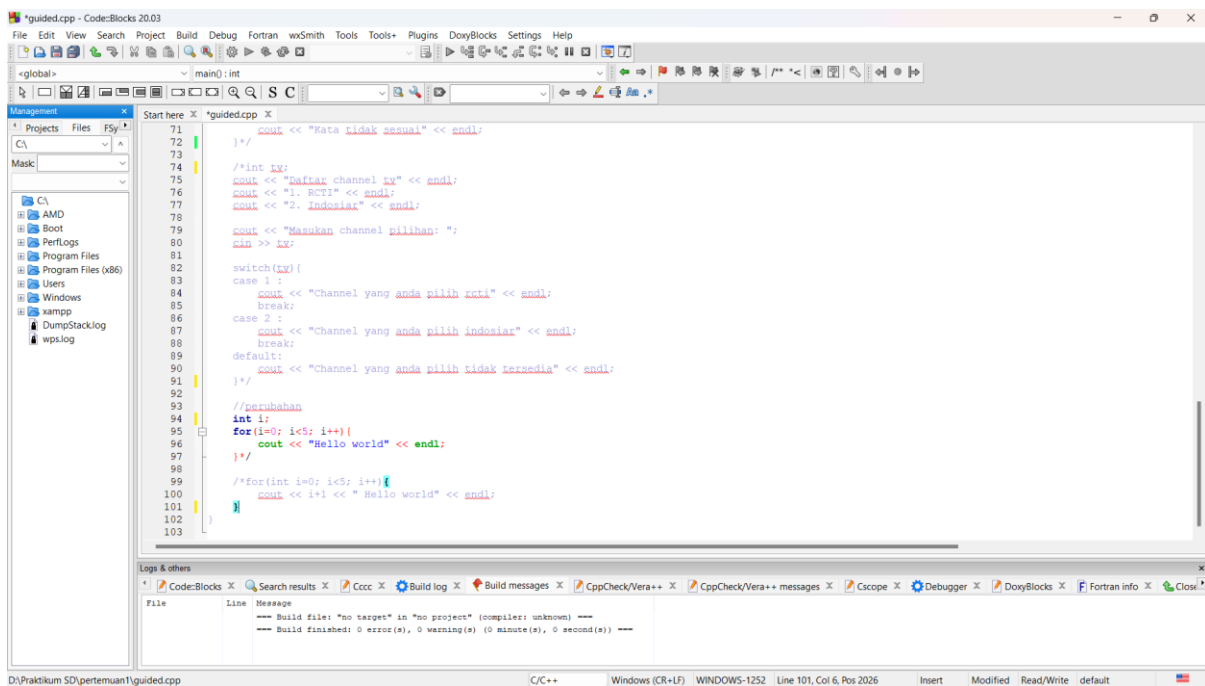
```
guided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
main0: int
Management
Projects Files FSy
C:\
Masik
C:\
AMD
Boot
PerfLogs
Program Files
Program Files (x86)
Users
Windows
xampp
DumpStacklog
wps.log
Start here X guided.cpp X
68 cout << "Kata sesuai" << endl;
69
70 }else {
71     cout << "Kata tidak sesuai" << endl;
72 }
73
74 int tv;
75 cout << "Daftar channel tv" << endl;
76 cout << "1. RCTI" << endl;
77 cout << "2. Indosiar" << endl;
78
79 cout << "Masukan channel pilihan: ";
80 cin >> tv;
81
82 switch(tv){
83 case 1 :
84     cout << "channel yang anda pilih rcti" << endl;
85     break;
86 case 2 :
87     cout << "channel yang anda pilih indosiar" << endl;
88     break;
89 default:
90     cout << "channel yang anda pilih tidak tersedia" << endl;
91 }
92
93 //perubahan
94 /*int i;
95 for(i=0; i<5; i++){
96     cout << "Hello world" << endl;
97 }*/
98 /*for(int i=0; i<5; i++){
99     cout << i+1 << " Hello world" << endl;
100 }*/
Logs & others
Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X DoxyBlocks X Fortran info X Close
File Line Message
--- Build file: "no target" in "no project" (compiler: unknown) ---
--- Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ---
D:\Praktikum SD\pertemuan\guided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 91, Col 6, Pos 1829 Insert Read/Write default
```


Output :

```
"D:\Praktikum SD\pertemuan" x + v
Daftar channel tv
1. RCTI
2. Indosiar
Masukan channel pilihan: 1
Channel yang anda pilih rcti

Process returned 0 (0x0)   execution time : 12.054 s
Press any key to continue.
```

Source code :



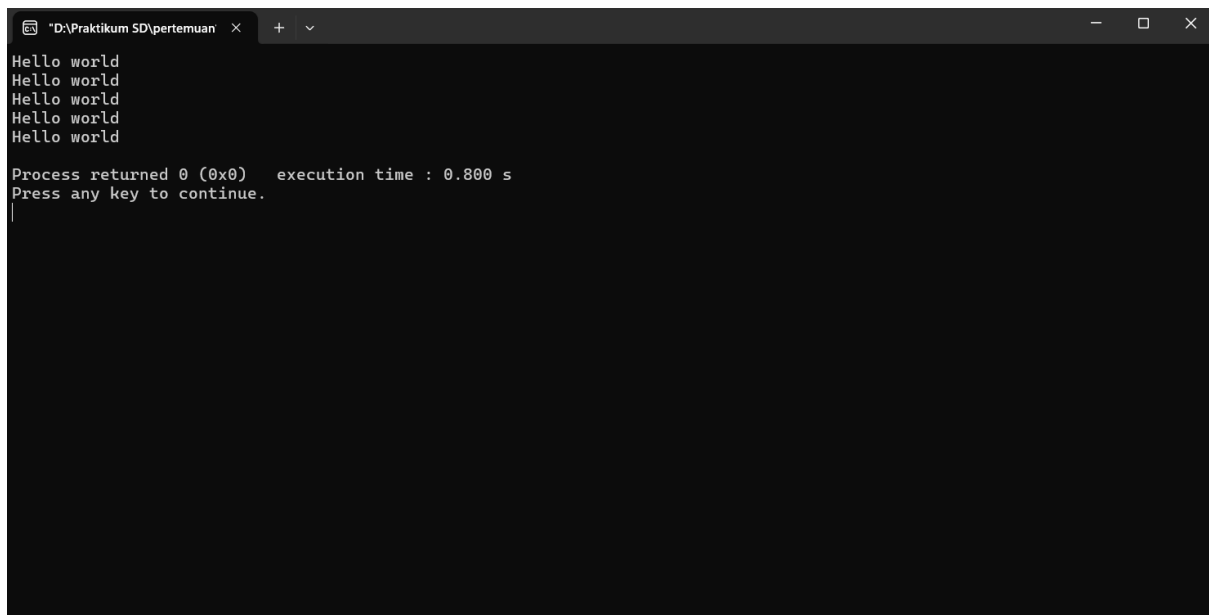
The screenshot shows the Code::Blocks 20.03 IDE with the file 'guided.cpp' open. The code is a C++ program that lists TV channels, takes user input, and prints the selected channel. The output window at the bottom shows the execution results.

```
71 cout << "Kata tidak sesuai" << endl;
72 */
73
74 /*int ix;
75 cout << "Daftar channel tv" << endl;
76 cout << "1. RCTI" << endl;
77 cout << "2. Indosiar" << endl;
78
79 cout << "Masukan channel pilihan: ";
80 cin >> ix;
81
82 switch(ix){
83 case 1 :
84     cout << "Channel yang anda pilih rcti" << endl;
85     break;
86 case 2 :
87     cout << "Channel yang anda pilih indosiar" << endl;
88     break;
89 default:
90     cout << "Channel yang anda pilih tidak tersedia" << endl;
91 }*/
92
93 //perubahan
94 int i;
95 for(i=0; i<5; i++){
96     cout << "Hello world" << endl;
97 }*/
98
99 /*for(int i=0; i<5; i++){
100     cout << i+1 << " Hello world" << endl;
101 }
102 }
103
```

Output window logs:

```
File Line Message
--- Build file: "no target" in "no project" (compiler: unknown) ---
--- Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ---
```

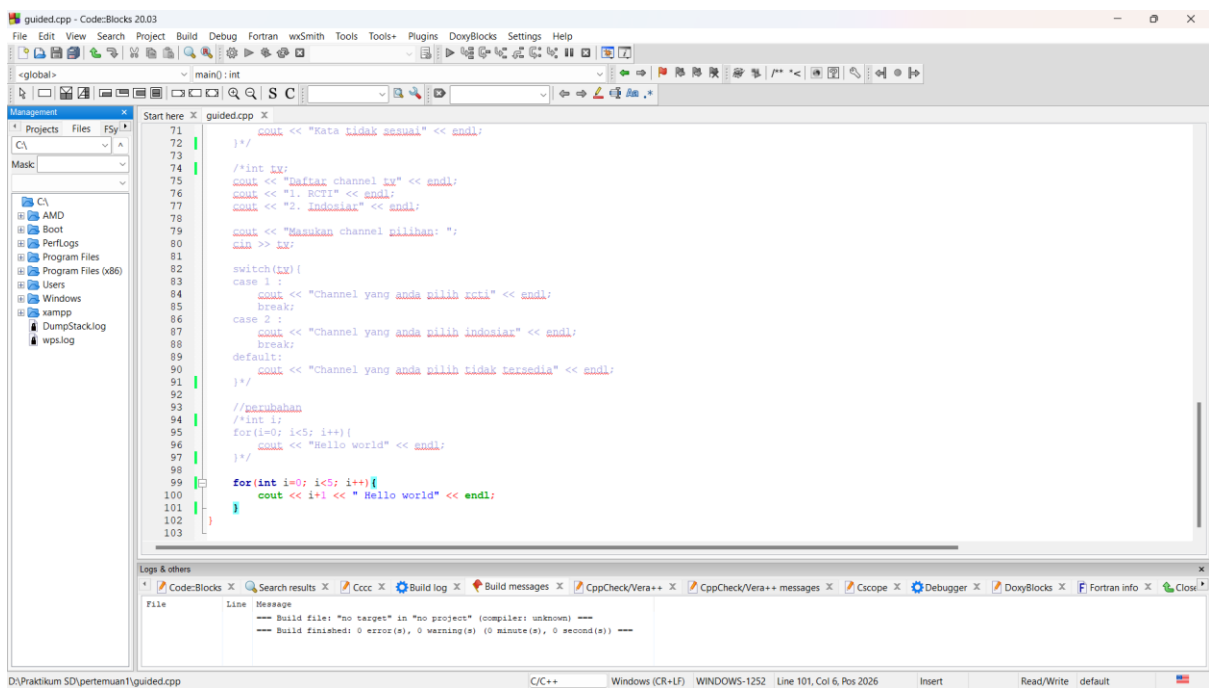
Output :



```
"D:\Praktikum SD\pertemuan" x + v
Hello world
Hello world
Hello world
Hello world
Hello world

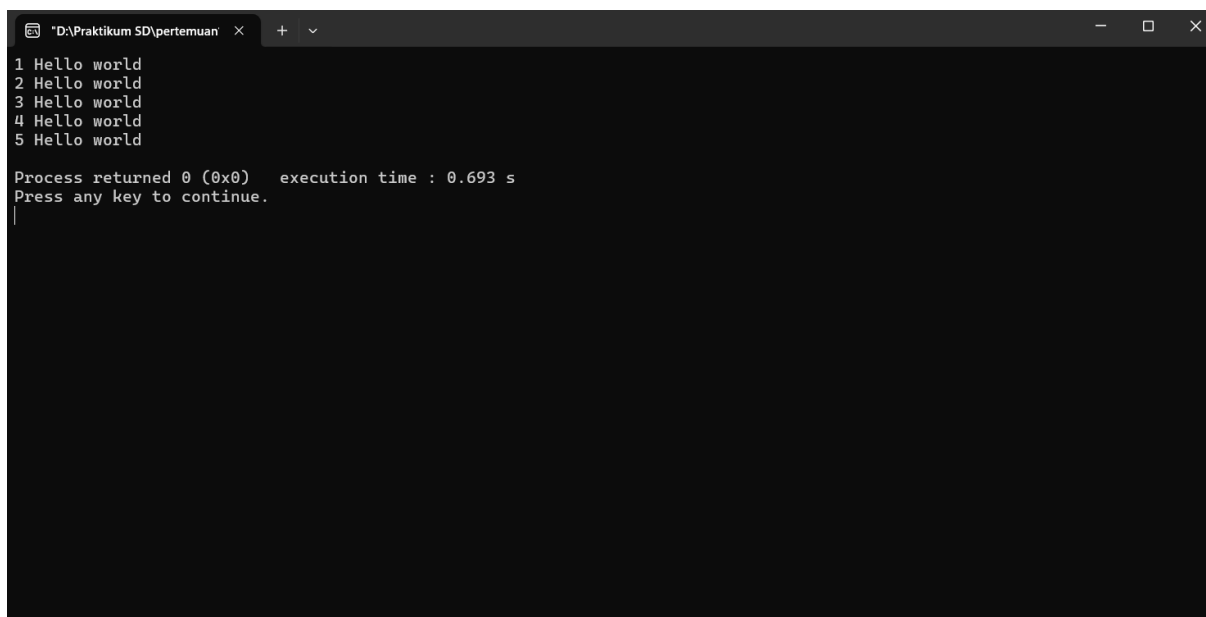
Process returned 0 (0x0) execution time : 0.800 s
Press any key to continue.
|
```

Source code :



```
guided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran woSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global> main0: int
Management
+ Projects Files F5y
C:\
Masih
C:\
AMD
Boot
Perflogs
Program Files
Program Files (x86)
Users
Windows
xampp
DumpStacklog
wpslog
Start here X guided.cpp X
71 cout << "Kata tidak sesuai" << endl;
72 */
73
74 /*int ix;
75 cout << "Reflex channel ix" << endl;
76 cout << "1. BCTI" << endl;
77 cout << "2. Indosiar" << endl;
78
79 cout << "Masukan channel pilihan: ";
80 cin >> ix;
81
82 switch(ix){
83 case 1 :
84     cout << "Channel yang anda pilih rcti" << endl;
85     break;
86 case 2 :
87     cout << "Channel yang anda pilih indosiar" << endl;
88     break;
89 default:
90     cout << "Channel yang anda pilih tidak tersedia" << endl;
91 }*/
92
93 //perubahan
94 /*int i;
95 for(i=0; i<5; i++){
96     cout << "Hello world" << endl;
97 }*/
98
99 for(int i=0; i<5; i++){
100     cout << i+1 << " Hello world" << endl;
101 }
102
103
Logs & others
Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X DovyBlocks X Fortran info X Close
File Line Message
--- Build file: "no target" in "no project" (compiler: unknown) ---
--- Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ---
D:\Praktikum SD\pertemuan\guided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 101, Col 6, Pos 2026 Insert Read/Write default
```

Output :



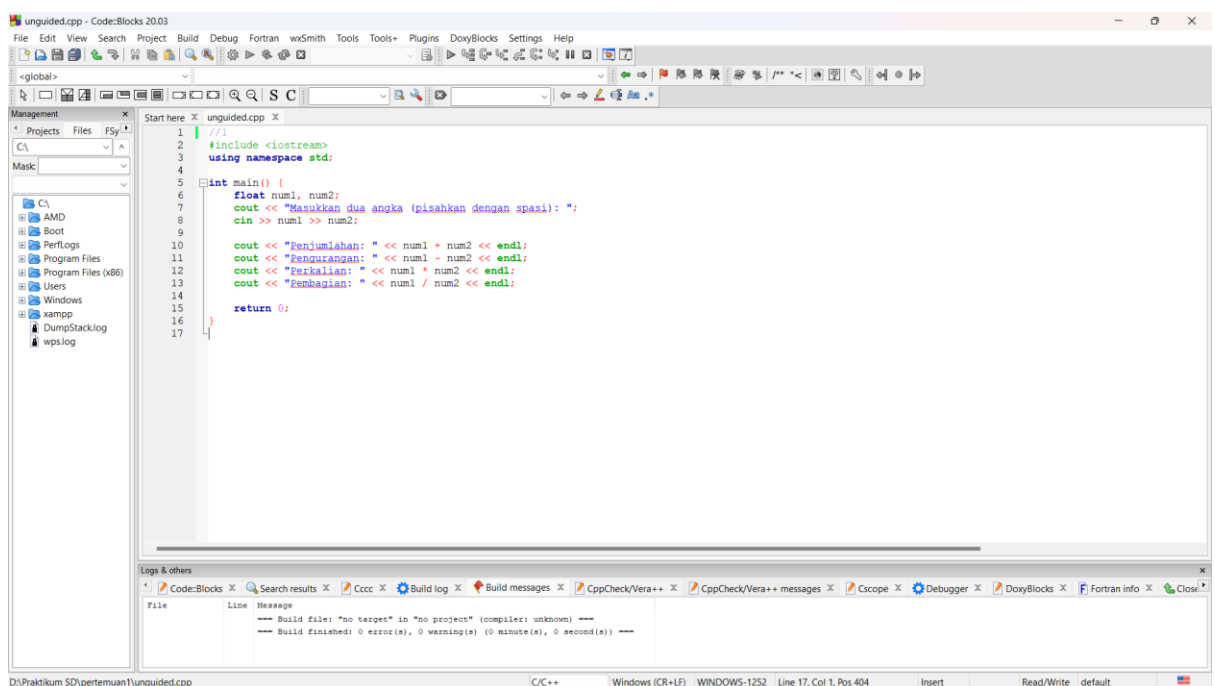
```
"D:\Praktikum SD\pertemuan" x + v
1 Hello world
2 Hello world
3 Hello world
4 Hello world
5 Hello world

Process returned 0 (0x0) execution time : 0.693 s
Press any key to continue.
|
```

D. Unguided

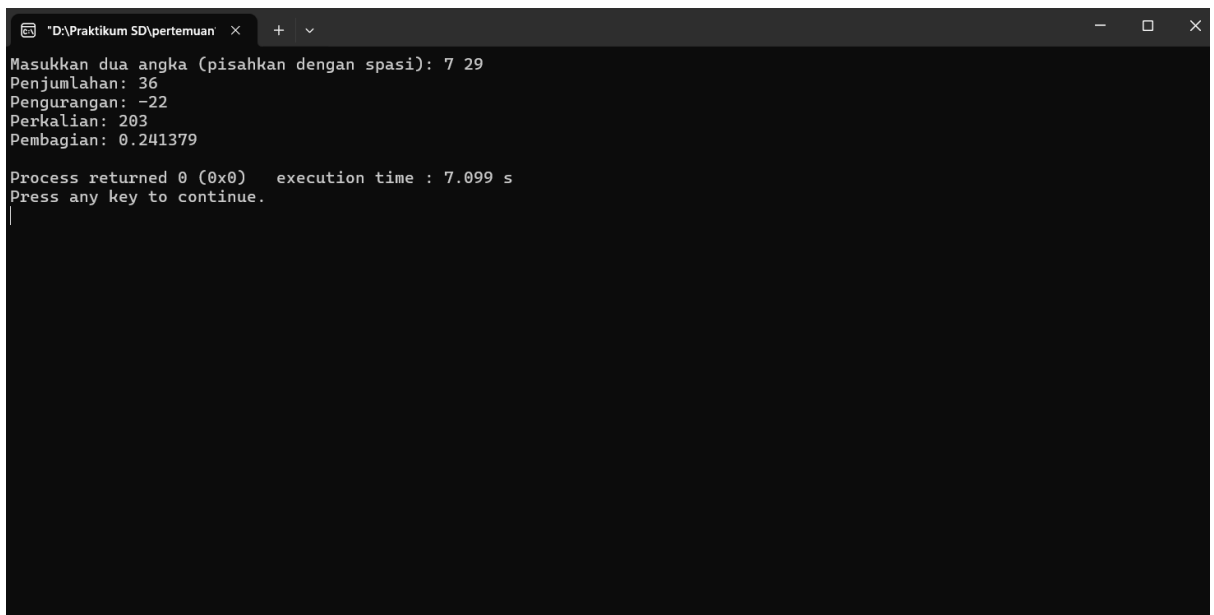
- 1.) Buatlah program yang menerima input-an dua buah bilangan betipe float, kemudian memberikan output-an hasil penjumlahan, pengurangan, perkalian, dan pembagian dari dua bilangan tersebut.

Source code :



```
unguided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
+global+
Management
  Projects Files Fsy
  C:\
  Mask:
  C:\
  AMD
  Boot
  Perflogs
  Program Files
  Program Files (x86)
  Users
  Windows
  xampp
  DumpStacklog
  wps.log
Start here x unguided.cpp x
1 //1
2 #include <iostream>
3 using namespace std;
4
5 int main() {
6     float num1, num2;
7     cout << "Masukkan dua angka (pisahkan dengan spasi): ";
8     cin >> num1 >> num2;
9
10    cout << "Penjumlahan: " << num1 + num2 << endl;
11    cout << "Pengurangan: " << num1 - num2 << endl;
12    cout << "Perkalian: " << num1 * num2 << endl;
13    cout << "Pembagian: " << num1 / num2 << endl;
14
15    return 0;
16
17
Logs & others
  Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope Debugger DoxyBlocks Fortran info Close
  File Line Message
  --- Build file: "no target" in "no project" (compiler: unknown) ---
  --- Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ---
D:\Praktikum SD\pertemuan\unguided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 17, Col 1, Pos 404 Insert Read/Write default
```

Output :



```
"D:\Praktikum SD\pertemuan" x + v
Masukkan dua angka (pisahkan dengan spasi): 7 29
Penjumlahan: 36
Pengurangan: -22
Perkalian: 203
Pembagian: 0.241379

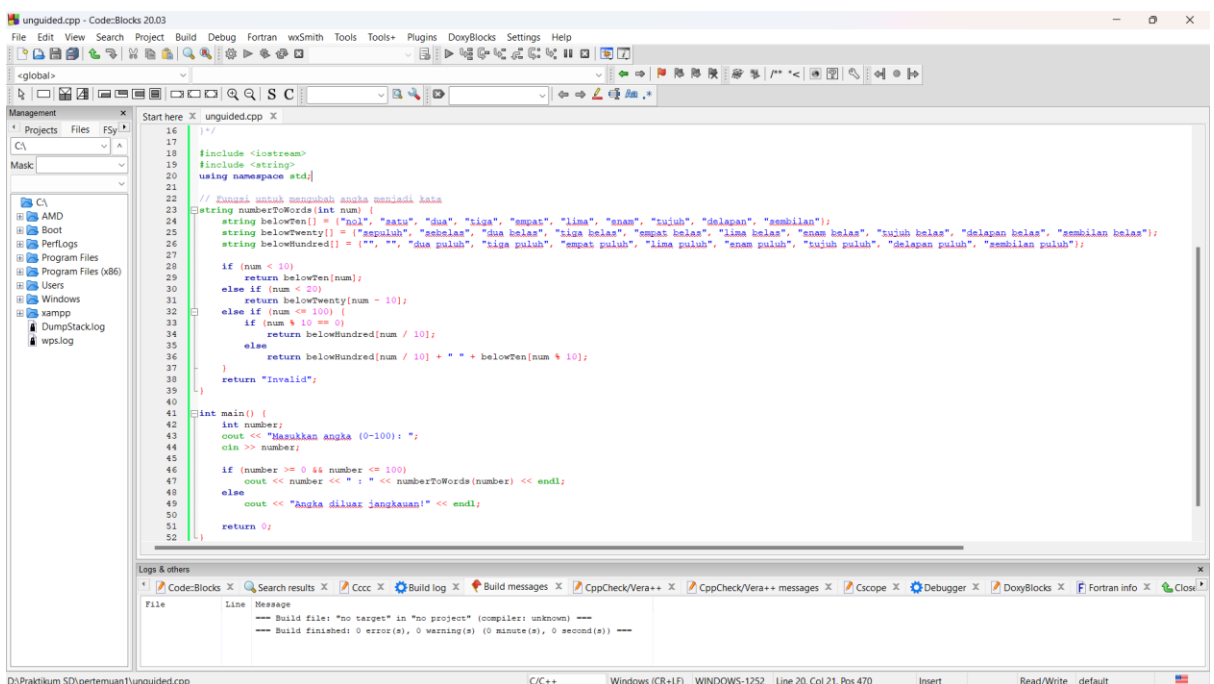
Process returned 0 (0x0)   execution time : 7.099 s
Press any key to continue.
|
```

2.) Buatlah sebuah program yang menerima masukan angka dan mengeluarkan output nilai angka tersebut dalam bentuk tulisan. Angka yang akan di- input-kan user adalah bilangan bulat positif mulai dari 0 s.d 100

Contoh :

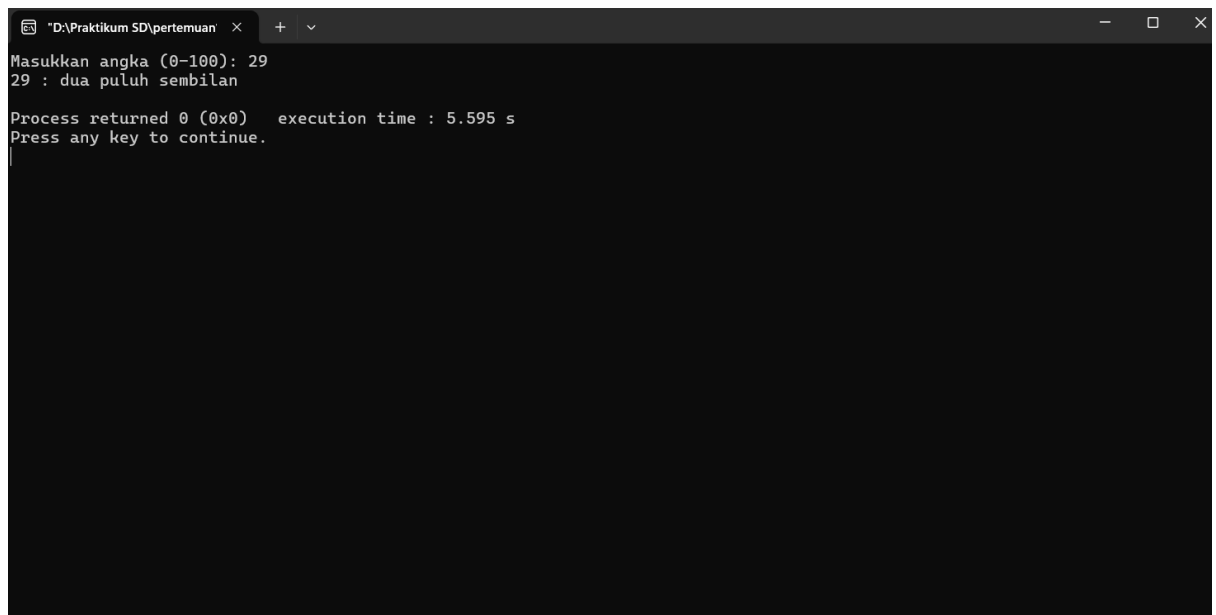
79 : tujuh puluh Sembilan

Source code :



```
unguided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoryBlocks Settings Help
<global>
Management
  Projects Files FSy
  C:\
  Mask
  AMD
  Boot
  Perltoys
  Program Files
  Program Files (x86)
  Users
  Windows
  xampp
  DumpStacklog
  wpslog
Start here X unguided.cpp X
16 17
18 19
20 21
22 23
24 24 // Fungsi untuk mengubah angka menjadi kata
25 25 string numberToWords(int num) {
26 26 string belowTen[] = {"", "satu", "dua", "tiga", "empat", "lima", "enam", "tujuh", "delapan", "sembilan"};
27 27 string belowTwenty[] = {"", "sepuluh", "sebelas", "dua belas", "tiga belas", "empat belas", "lima belas", "enam belas", "tujuh belas", "delapan belas", "sembilan belas"};
28 28 string belowHundred[] = {"", "", "dua puluh", "tiga puluh", "empat puluh", "lima puluh", "enam puluh", "tujuh puluh", "delapan puluh", "sembilan puluh"};
29 29 if (num < 10)
30 30 return belowTen[num];
31 31 else if (num < 20)
32 32 return belowTwenty[num - 10];
33 33 else if (num <= 100) {
34 34 if (num % 10 == 0)
35 35 return belowHundred[num / 10];
36 36 else
37 37 return belowHundred[num / 10] + " " + belowTen[num % 10];
38 38 }
39 39 return "Invalid";
40 40 }
41 41 int main() {
42 42 int number;
43 43 cout << "Masukkan angka (0-100): ";
44 44 cin >> number;
45 45 if (number >= 0 && number <= 100)
46 46 cout << number << " : " << numberToWords(number) << endl;
47 47 else
48 48 cout << "Angka diluar jangkauan!" << endl;
49 49 return 0;
50 50 }
51 52
53 53
54 54
55 55
56 56
57 57
58 58
59 59
60 60
61 61
62 62
63 63
64 64
65 65
66 66
67 67
68 68
69 69
70 70
71 71
72 72
73 73
74 74
75 75
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86 86
87 87
88 88
89 89
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91 91
92 92
93 93
94 94
95 95
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102 102
103 103
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106 106
107 107
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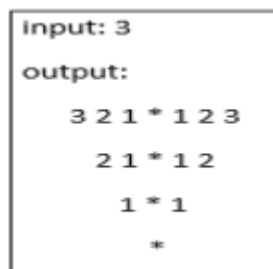
Output :



```
"D:\Praktikum SD\pertemuan" x + v
Masukkan angka (0-100): 29
29 : dua puluh sembilan

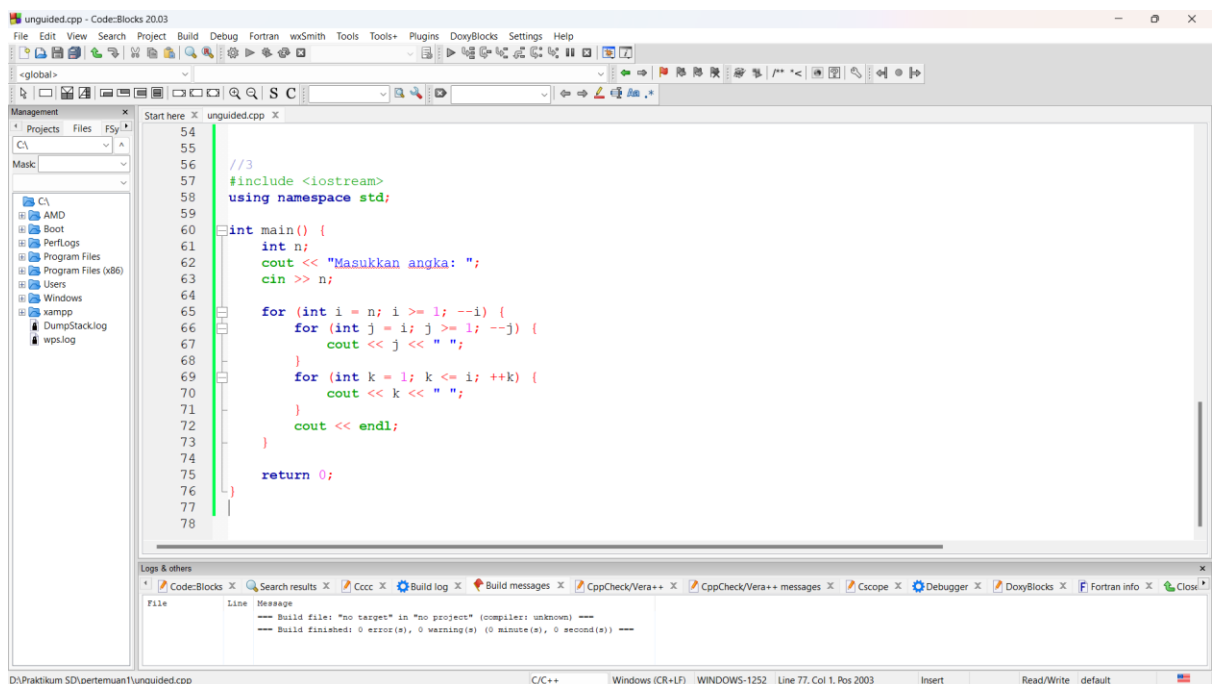
Process returned 0 (0x0)   execution time : 5.595 s
Press any key to continue.
```

3.) Buatlah program yang dapat memberikan *input* dan *output* sbb.



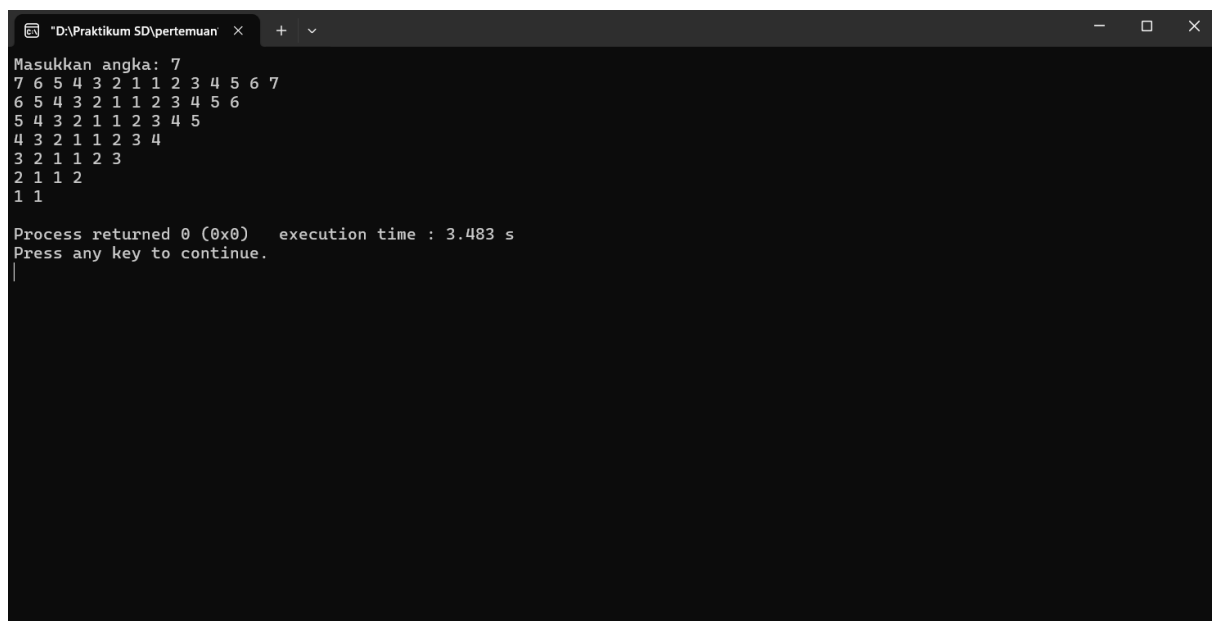
```
input: 3
output:
3 2 1 * 1 2 3
2 1 * 1 2
1 * 1
*
```

Source code :



```
unguided.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DonyBlocks Settings Help
+global+
Management
  Projects Files Fsy
  C:\
  Mask
  C:\
  AMD
  Boot
  PerlLogs
  Program Files
  Program Files (x86)
  Users
  Windows
  xampp
  DumpStacklog
  wps.log
Start here X unguided.cpp X
54
55
56 //3
57 #include <iostream>
58 using namespace std;
59
60 int main() {
61     int n;
62     cout << "Masukkan angka: ";
63     cin >> n;
64
65     for (int i = n; i >= 1; --i) {
66         for (int j = i; j >= 1; --j) {
67             cout << j << " ";
68         }
69         for (int k = 1; k <= i; ++k) {
70             cout << " ";
71         }
72         cout << endl;
73     }
74
75     return 0;
76 }
77
78
Logs & others
  Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X DonyBlocks X Fortran info X Close
  File Line Message
  --- Build file: "no targets" in "no project" (compiler: unknown) ---
  --- Build finished: 0 error(s), 0 warning(s), 0 minute(s), 0 second(s) ---
D:\Praktikum SD\pertemuan\unguided.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 77, Col 1, Pos 2003 Insert Read/Write default
```

Output :

A screenshot of a terminal window with a dark background. The window title is "D:\Praktikum SD\pertemuan". The output shows a program that takes the number 7 as input and prints a series of numbers in a triangular pattern. The numbers are arranged in 7 rows, with the first row containing 7 numbers (7 6 5 4 3 2 1) and each subsequent row containing one fewer number, ending with a single '1' in the 7th row. Below the pattern, the terminal shows "Process returned 0 (0x0) execution time : 3.483 s" and "Press any key to continue.".

```
"D:\Praktikum SD\pertemuan" x + v
Masukkan angka: 7
7 6 5 4 3 2 1 1 2 3 4 5 6 7
6 5 4 3 2 1 1 2 3 4 5 6
5 4 3 2 1 1 2 3 4 5
4 3 2 1 1 2 3 4
3 2 1 1 2 3
2 1 1 2
1 1

Process returned 0 (0x0) execution time : 3.483 s
Press any key to continue.
```

E. Kesimpulan

Pengenalan Code::Blocks dan dasar-dasar bahasa C++ adalah langkah awal yang penting bagi siapa saja yang ingin memulai belajar pemrograman. Dengan memahami konsep-konsep dasar seperti struktur program, tipe data, dan kontrol alur, pengguna dapat mengembangkan keterampilan pemrograman lebih lanjut. Code::Blocks sebagai IDE yang kuat dan fleksibel akan memudahkan dalam mempraktikkan teori-teori tersebut.