

## Contoh Praktikum Algoritma dan Pemrograman



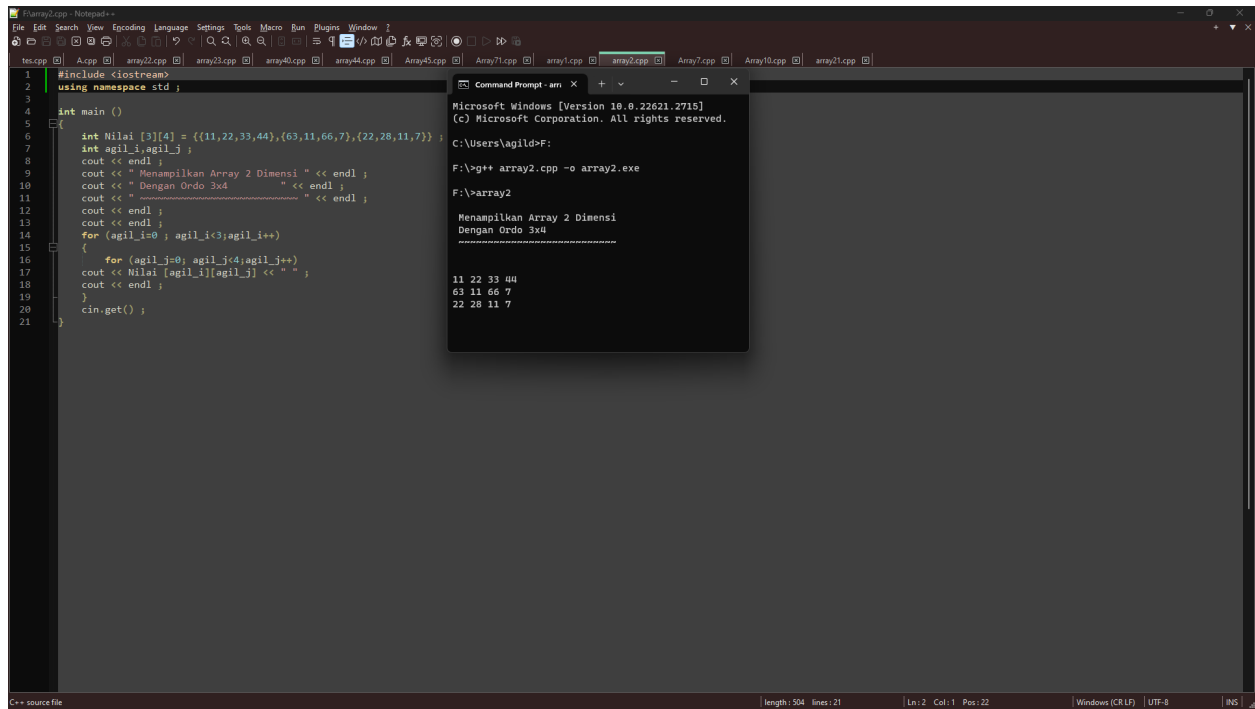
Nama : Agil Deriansyah Hasan  
Nim : 4522210125

Dosen:

Dra.SRI REZEKI CANDRA NURSARI,M.Kom  
Prak. Algoritma dan Pemrograman - B

**S1-Teknik Informatika**  
**Fakultas Teknik**  
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## Array2



The screenshot shows a C++ program in a Notepad++ window and its execution in a Windows Command Prompt. The C++ program defines a 3x4 integer array and prints its contents using nested loops. The command prompt shows the compilation command and the resulting output.

```
#include <iostream>
using namespace std;

int main ()
{
    int Nilai [3][4] = {{11,22,33,44},{63,11,66,7},{22,28,11,7}};
    int agil_i,agil_j;
    cout << endl;
    cout << " Menampilkan Array 2 Dimensi " << endl;
    cout << " Dengan Ordo 3x4 " << endl;
    cout << " ===== " << endl;
    cout << endl;
    for (agil_i=0; agil_i<3;agil_i++)
    {
        for (agil_j=0; agil_j<4;agil_j++)
        cout << Nilai [agil_i][agil_j] << " ";
        cout << endl;
    }
    cin.get();
}
```

```
Microsoft Windows [Version 10.0.22621.2715]
(c) Microsoft Corporation. All rights reserved.

C:\Users\agild>F:

F:\>g++ array2.cpp -o array2.exe

F:\>array2

Menampilkan Array 2 Dimensi
Dengan Ordo 3x4
=====

11 22 33 44
63 11 66 7
22 28 11 7
```

### Pseudocode

#### KAMUS/DEKLARASI VARIABEL

Nilai[3][4] : int agil\_i,agil\_j: int

#### ALGORITMA/DESKRISPI

Nilai[3][4] = {{11,22,33,44},{63,11,66,7},{22,28,11,7}}

for (agil\_i=0; agil\_i < 3; agil\_i++)

for (agil\_j=0; agil\_j<4; agil\_j++)

print (nilai[i][j], " ")

end for

### ALGORITMA :

1. agil\_i 0

2. agil\_j 0

3. Nilai[3][4] = {11, 22, 33, 44} ; {63, 11, 66, 7} ; {22, 28, 11, 7}

4. Selama (agil\_i < 3), kerjakan baris 5 s.d. 9, kalau tidak baris 10

5. Selama (agil\_j < 4), kerjakan baris 6 s.d. 8, kalau tidak baris 10

6. Mencetak Nilai[agil\_i][agil\_j]

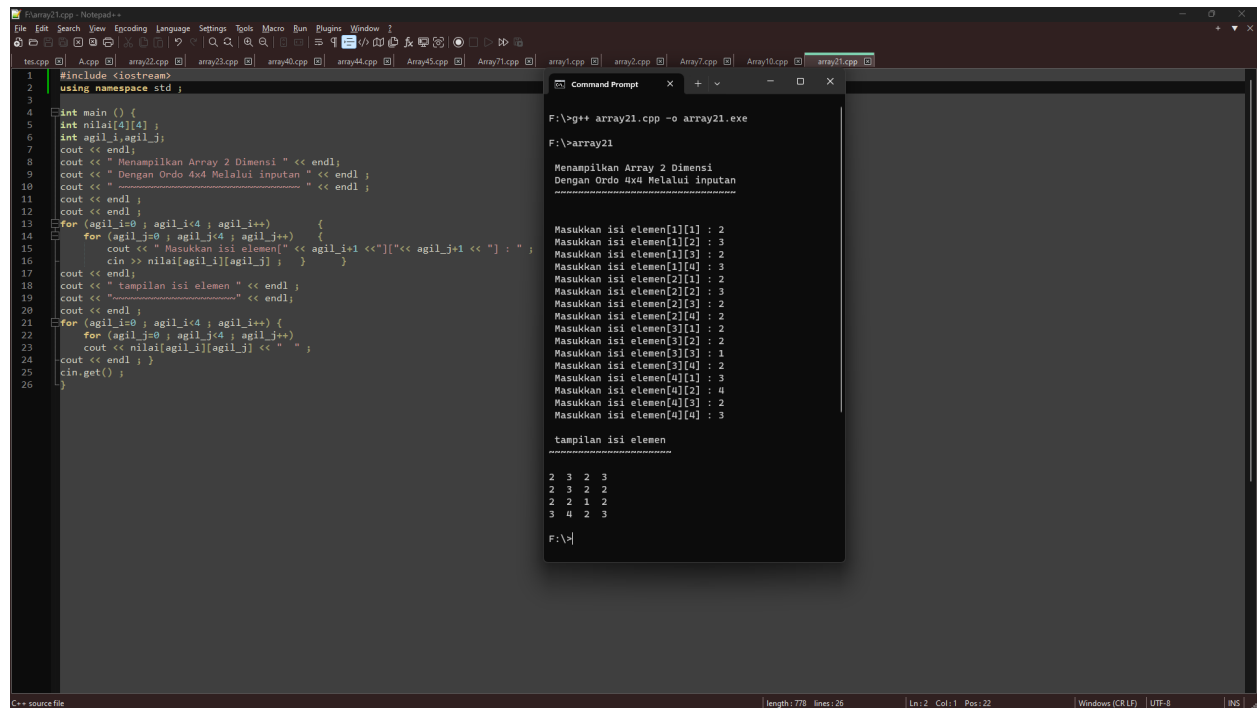
7. Mencetak (" ")

8. agil\_j agil\_j + 1

9. agil\_i agil\_i + 1

10. Selesai

## Array21



```
1 #include <iostream>
2 using namespace std;
3
4 int main () {
5     int nilai[4][4];
6     int agil_i, agil_j;
7     cout << endl;
8     cout << "Menampilkan Array 2 Dimensi " << endl;
9     cout << " Dengan Ordo 4x4 Melalui inputan " << endl;
10    cout << " ~~~~~ " << endl;
11    cout << endl;
12    cout << endl;
13    for (agil_i=0; agil_i<4; agil_i++) {
14        for (agil_j=0; agil_j<4; agil_j++) {
15            cout << " Masukkan isi elemen[" << agil_i+1 << "][" << agil_j+1 << " ] : " ;
16            cin >> nilai[agil_i][agil_j]; } }
17    cout << endl;
18    cout << " tampilkan isi elemen " << endl;
19    cout << " ~~~~~ " << endl;
20    cout << endl;
21    for (agil_i=0; agil_i<4; agil_i++) {
22        for (agil_j=0; agil_j<4; agil_j++) {
23            cout << nilai[agil_i][agil_j] << " " ;
24        }
25        cout << endl;
26    }
27    cin.get();
28 }
```

```
F:\>g++ array21.cpp -o array21.exe
F:\>array21

Menampilkan Array 2 Dimensi
Dengan Ordo 4x4 Melalui inputan
~~~~~

Masukkan isi elemen[1][1] : 2
Masukkan isi elemen[1][2] : 3
Masukkan isi elemen[1][3] : 2
Masukkan isi elemen[1][4] : 3
Masukkan isi elemen[2][1] : 2
Masukkan isi elemen[2][2] : 3
Masukkan isi elemen[2][3] : 2
Masukkan isi elemen[2][4] : 2
Masukkan isi elemen[3][1] : 2
Masukkan isi elemen[3][2] : 2
Masukkan isi elemen[3][3] : 1
Masukkan isi elemen[3][4] : 2
Masukkan isi elemen[4][1] : 3
Masukkan isi elemen[4][2] : 4
Masukkan isi elemen[4][3] : 2
Masukkan isi elemen[4][4] : 3

tampilkan isi elemen
~~~~~

2 3 2 3
2 3 2 2
2 2 1 2
3 4 2 3
F:\>
```

### Algoritma

1.  $agil\_i \leftarrow 0$
2.  $Agil\_j \leftarrow 0$
3. Selama ( $agil\_i < 4$ )
4. Selama ( $agil\_j < 4$ )
5. Mencetak nilai variabel  $agil\_i+1$
6. Mencetak nilai variabel  $agil\_j+1$
7. Menginput nilai variabel  $Nilai[agil\_i][agil\_j]$
8.  $Agil\_i++$
9.  $Agil\_j++$
10. Selama ( $agil\_i < 4$ ),
11. Selama ( $agil\_j < 4$ ),
12. Mencetak nilai variabel  $Nilai[agil\_i][agil\_j]$
13.  $Agil\_i++$
14.  $Agil\_bj++$
15. Selesai

### PSEUDOCODE

#### DEKLARASI VARIABEL

Nilai[4][4], agil\_i, agil\_j: int

#### DESKRIPSI

agil\_i = 0

agil\_j = 0

for (agil\_i = 0; agil\_i < 4; agil\_i++)

for (agil\_j = 0; agil\_j < 4; agil\_j++)

print (agil\_i+1, agil\_j+1)

input (Nilai[agil\_i][agil\_j])

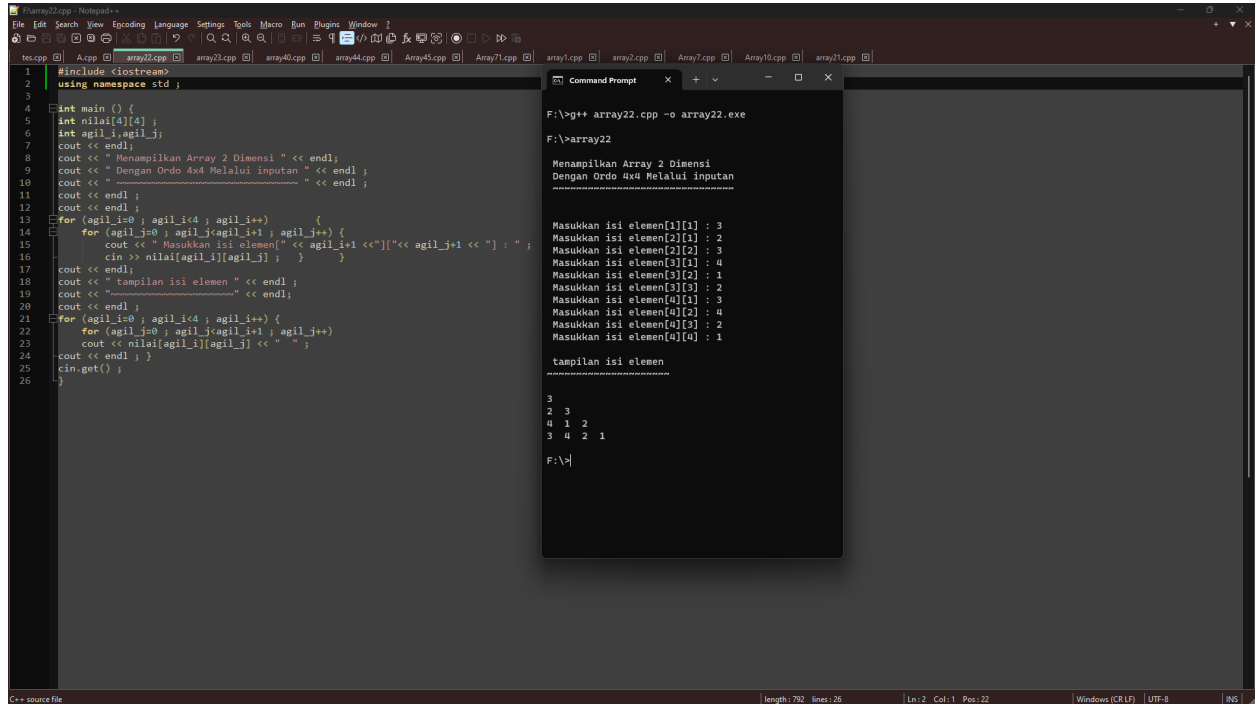
for (agil\_i = 0; agil\_i < 4; agil\_i++)

for (agil\_j = 0; agil\_j < 4; agil\_j++)

print (Nilai[agil\_i][agil\_j])

endfor

## Array22



```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int nilai[4][4];
6     int agil_i, agil_j;
7     cout << endl;
8     cout << "Menampilkan Array 2 Dimensi " << endl;
9     cout << "Dengan Ordo 4x4 Melalui inputan " << endl;
10    cout << " " << endl;
11    cout << endl;
12    cout << endl;
13    for (agil_i=0; agil_i<4; agil_i++) {
14        for (agil_j=0; agil_j<agil_i+1; agil_j++) {
15            cout << "Masukkan isi elemen[" << agil_i+1 << "][" << agil_j+1 << " ] : ";
16            cin >> nilai[agil_i][agil_j];
17        }
18        cout << endl;
19        cout << " " << endl;
20        cout << endl;
21        for (agil_i=0; agil_i<4; agil_i++) {
22            for (agil_j=0; agil_j<agil_i+1; agil_j++) {
23                cout << nilai[agil_i][agil_j] << " ";
24            }
25            cout << endl;
26        }
27    }
28    cin.get();
29 }
```

```
F:\>g++ array22.cpp -o array22.exe
F:\>array22

Menampilkan Array 2 Dimensi
Dengan Ordo 4x4 Melalui inputan

Masukkan isi elemen[1][1] : 3
Masukkan isi elemen[2][1] : 2
Masukkan isi elemen[2][2] : 3
Masukkan isi elemen[3][1] : 4
Masukkan isi elemen[3][2] : 1
Masukkan isi elemen[3][3] : 2
Masukkan isi elemen[4][1] : 3
Masukkan isi elemen[4][2] : 4
Masukkan isi elemen[4][3] : 2
Masukkan isi elemen[4][4] : 1

tampilkan isi elemen

3
2 3
4 1 2
3 4 2 1
F:\>
```

### Algoritma

1.  $agil\_i \leftarrow 0$
2.  $Agil\_j \leftarrow 0$
3. Selama ( $agil\_i < 4$ )
4. Selama ( $agil\_j < agil\_i+1$ )
5. Mencetak nilai variabel  $agil\_i+1$
6. Mencetak nilai variabel  $agil\_j+1$
7. Menginput nilai variabel  $Nilai[agil\_i][agil\_j]$
8.  $Agil\_i++$
9.  $Agil\_j++$
10. Selama ( $agil\_i < 4$ ),
11. Selama ( $agil\_j < agil\_i+1$ ),
12. Mencetak nilai variabel  $Nilai[agil\_i][agil\_j]$
13.  $Agil\_i++$
14.  $Agil\_bj++$
15. Selesai

### PSEUDOCODE

#### DEKLARASI VARIABEL

Nilai[4][4], agil\_i, agil\_j: int

#### DESKRIPSI

agil\_i = 0

agil\_j = 0

for (agil\_i = 0; agil\_i < 4; agil\_i++)

for (agil\_j = 0; agil\_j < agil\_i+1; agil\_j++)

print (agil\_i+1, agil\_j+1)

input (Nilai[agil\_i][agil\_j])

for (agil\_i = 0; agil\_i < 4; agil\_i++)

for (agil\_j = 0; agil\_j < agil\_i+1; agil\_j++)

print (Nilai[agil\_i][agil\_j])

endfor

## Array23

```
6
7 #include <iostream>
8 using namespace std;
9 int agil_A[10][10], agil_B[10][10], agil_C[10][10];
10 int agil_iA, agil_iB, agil_jA, agil_jB;
11
12 int main ()
13 {
14     int agil_i, agil_j, agil_k;
15     cout << "Menampilkan Array/larik multi dimensi" << endl;
16     cout << "Menampilkan Besar Baris dan Kolom Matriks A" << endl;
17     cout << "xxxxxxxxxxxxxxxx" << endl;
18     cout << "Masukkan Jumlah Baris Matriks A = "; cin >> agil_iA;
19     cout << "Masukkan Jumlah Kolom Matriks A = "; cin >> agil_jA;
20     cout << "xxxxxxxxxxxxxxxx" << endl;
21     cout << "Masukkan Jumlah Baris Matriks B = "; cin >> agil_iB;
22     cout << "Masukkan Jumlah Kolom Matriks B = "; cin >> agil_jB;
23     cout << "xxxxxxxxxxxxxxxx" << endl;
24     cout << endl;
25     cout << "Menginput Isi Elemen Array Matriks A" << endl;
26     for (agil_i=0; agil_i<agil_iA; agil_i++) {
27         for (agil_j=0; agil_j<agil_jA; agil_j++) {
28             cout << "Masukkan Isi Elemen ["<<agil_i+1<<"]["<<agil_j+1<<"] : ";
29             cin >> agil_A[agil_i][agil_j]; } }
30     cout << endl;
31     cout << "Menginput isi elemen array matriks b" << endl;
32     for (agil_i=0; agil_i<agil_iB; agil_i++) {
33         for (agil_j=0; agil_j<agil_jB; agil_j++) {
34             cout << "Masukkan Isi Elemen["<<agil_i+1<<"]["<<agil_j+1<<"] : ";
35             cin >> agil_B[agil_i][agil_j]; } }
36     cout << endl;
37
38     cout << "Tampilkan Isi Elemen Array Matriks A" << endl;
39     cout << "xxxxxxxxxxxxxxxx" << endl;
40     cout << endl;
41     for (agil_i=0; agil_i<agil_iA; agil_i++) {
42         for (agil_j=0; agil_j<agil_jA; agil_j++)
43             cout << agil_A[agil_i][agil_j] << " ";
44         cout << endl;
45     }
46     cout << endl;
47     cout << "Tampilkan Isi Elemen Array Matriks B" << endl;
48     cout << "xxxxxxxxxxxxxxxx" << endl;
49     cout << endl;
50     for (agil_i=0; agil_i<agil_iB; agil_i++) {
51         for (agil_j=0; agil_j<agil_jB; agil_j++)
52             cout << agil_B[agil_i][agil_j] << " ";
53         cout << endl;
54     }
55     //Perhalian Matriks
56     for (agil_i=0; agil_i<agil_iA; agil_i++)
57         for (agil_j=0; agil_j<agil_jA; agil_j++)
58             for (agil_k=0; agil_k<agil_jA; agil_k++)
59             {
60                 agil_C[agil_i][agil_j] = agil_C[agil_i][agil_j] + agil_A[agil_i][agil_k] * agil_B[agil_k][agil_j];
61             }
62     cout << endl;
63     cout << "Tampilkan Hasil Kali Dua Matriks " << endl;
64     cout << "xxxxxxxxxxxxxxxx" << endl;
65     for (agil_i=0; agil_i<agil_iA; agil_i++)
66     {
67         for (agil_j=0; agil_j<agil_jB; agil_j++)
68         {
69             cout << agil_C[agil_i][agil_j] << " ";
70         }
71         cout << endl;
72     }
```

C:\ Command Prompt

```
E:\>g++ array23.cpp -o array23.exe
```

```
E:\>array23
```

Menampilkan Array/larik multi dimensi

Menampilkan Besar Baris dan Kolom Matriks A

~~~~~

Masukkan Jumlah Baris Matriks A = 3

Masukkan Jumlah Kolom Matriks A = 3

~~~~~

Masukkan Jumlah Baris Matriks B = 3

Masukkan Jumlah Kolom Matriks B = 2

~~~~~

Menginput Isi Elemen Array Matriks A

Masukkan Isi Elemen [1][1] : 3

Masukkan Isi Elemen [1][2] : 2

Masukkan Isi Elemen [1][3] : 1

Masukkan Isi Elemen [2][1] : 4

Masukkan Isi Elemen [2][2] : 3

Masukkan Isi Elemen [2][3] : 2

Masukkan Isi Elemen [3][1] : 5

Masukkan Isi Elemen [3][2] : 4

Masukkan Isi Elemen [3][3] : 2

Menginput isi elemen array matriks b

Masukkan Isi Elemen{1}{1} : 3

Masukkan Isi Elemen{1}{2} : 5

Masukkan Isi Elemen{2}{1} : 2

Masukkan Isi Elemen{2}{2} : 3

Masukkan Isi Elemen{3}{1} : 5

Masukkan Isi Elemen{3}{2} : 4

Tampilan Isi Elemen Array Matriks A

~~~~~

3    2    1

4    3    2

5    4    2

Tampilan Isi Elemen Array Matriks A

~~~~~

|   |   |   |
|---|---|---|
| 3 | 2 | 1 |
| 4 | 3 | 2 |
| 5 | 4 | 2 |

|   |   |
|---|---|
| 3 | 5 |
| 2 | 3 |
| 5 | 4 |

Tampilan Hasil Kali Dua Matriks

~~~~~

18	25
----	----