

Tugas Praktikum Algoritma dan Struktur Data



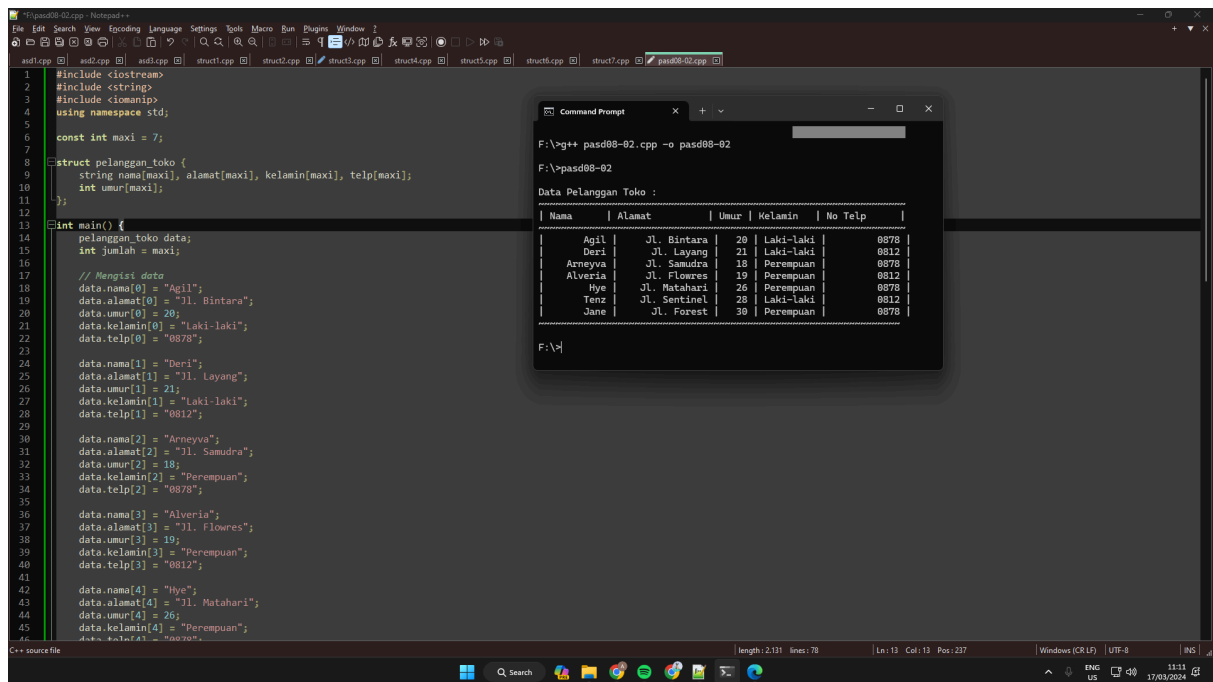
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Prak. Algoritma dan Struktur Data - I

**S1-Teknik Informatika
Fakultas Teknik
Universitas Pancasila 2023/2024**

pasd08-02



```
1 #include <iostream>
2 #include <string>
3 #include <iomanip>
4 using namespace std;
5
6 const int maxi = 7;
7
8 struct pelanggan_toko {
9     string nama[maxi], alamat[maxi], kelamin[maxi], telp[maxi];
10     int umur[maxi];
11 };
12
13 int main() {
14     pelanggan_toko data;
15     int jumlah = maxi;
16
17     // Mengisi data
18     data.nama[0] = "Agil";
19     data.alamat[0] = "Jl. Bintara";
20     data.umur[0] = 20;
21     data.kelamin[0] = "Laki-laki";
22     data.telp[0] = "0878";
23
24     data.nama[1] = "Deri";
25     data.alamat[1] = "Jl. Layang";
26     data.umur[1] = 21;
27     data.kelamin[1] = "Laki-laki";
28     data.telp[1] = "0812";
29
30     data.nama[2] = "Arneyva";
31     data.alamat[2] = "Jl. Samudra";
32     data.umur[2] = 18;
33     data.kelamin[2] = "Perempuan";
34     data.telp[2] = "0878";
35
36     data.nama[3] = "Alveria";
37     data.alamat[3] = "Jl. Flowres";
38     data.umur[3] = 19;
39     data.kelamin[3] = "Perempuan";
40     data.telp[3] = "0812";
41
42     data.nama[4] = "Hye";
43     data.alamat[4] = "Jl. Matahari";
44     data.umur[4] = 26;
45     data.kelamin[4] = "Perempuan";
46     data.telp[4] = "0878";
47
48     data.nama[5] = "Tenz";
49     data.alamat[5] = "Jl. Sentinel";
50     data.umur[5] = 28;
51     data.kelamin[5] = "Laki-laki";
52     data.telp[5] = "0812";
53
54     data.nama[6] = "Jane";
55     data.alamat[6] = "Jl. Forest";
56     data.umur[6] = 30;
57     data.kelamin[6] = "Perempuan";
58     data.telp[6] = "0878";
59
60     cout<<endl;
61     cout<<"Data Pelanggan Toko :";
62     cout<<"\n";
63     cout<<" | Nama | Alamat | Umur | Kelamin | No Telp |";
64     cout<<"\n";
65
66     for (i = 0; i < jumlah; i++) {
67         cout<<" | " << setw(10) << data.nama[i] <<" | "
68             << setw(15) << data.alamat[i] <<" | "
69             << setw(4) << data.umur[i] <<" | "
70             << setw(9) << data.kelamin[i] <<" | "
71             << setw(12) << data.telp[i] <<"\n";
72     }
73
74     cout<<"\n";
75
76     return 0;
77 }
78
```

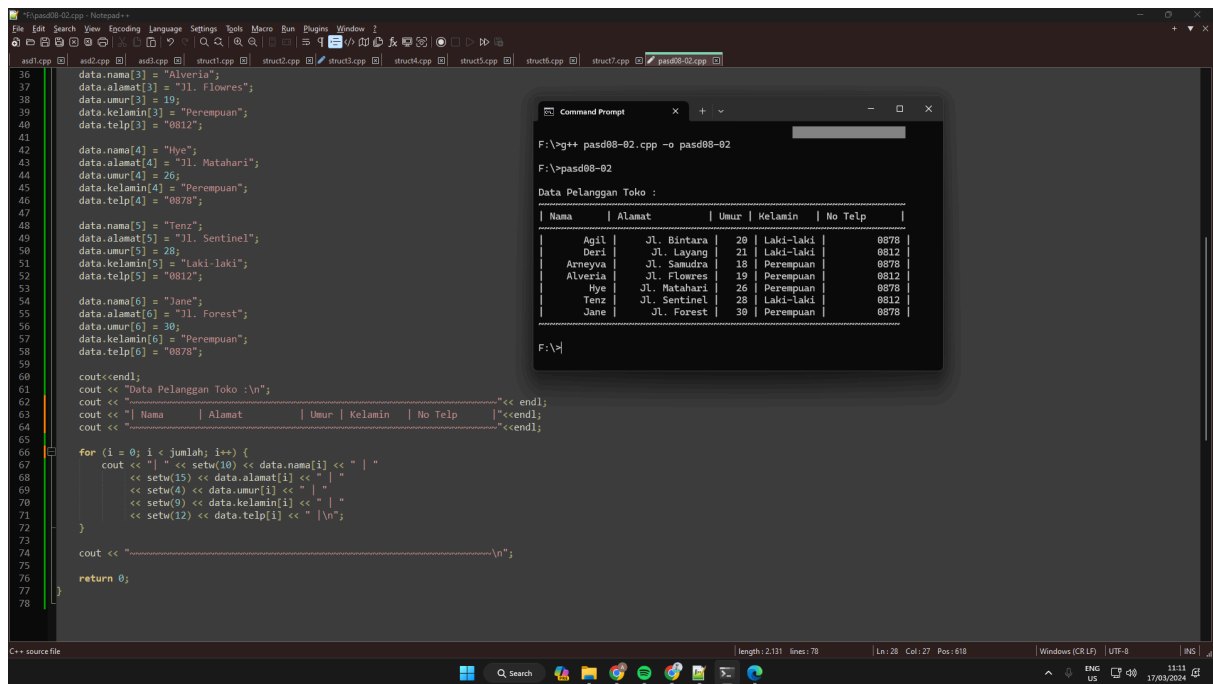
Command Prompt

```
F:\>g++ pasd08-02.cpp -o pasd08-02
F:\>.pasd08-02

Data Pelanggan Toko :

 | Nama | Alamat | Umur | Kelamin | No Telp |
 |-----|-----|-----|-----|-----|
 | Agil | Jl. Bintara | 20 | Laki-laki | 0878 |
 | Deri | Jl. Layang | 21 | Laki-laki | 0812 |
 | Arneyva | Jl. Samudra | 18 | Perempuan | 0878 |
 | Alveria | Jl. Flowres | 19 | Perempuan | 0812 |
 | Hye | Jl. Matahari | 26 | Perempuan | 0878 |
 | Tenz | Jl. Sentinel | 28 | Laki-laki | 0812 |
 | Jane | Jl. Forest | 30 | Perempuan | 0878 |

F:\>
```



```
36 data.nama[3] = "Alveria";
37 data.alamat[3] = "Jl. Flowres";
38 data.umur[3] = 19;
39 data.kelamin[3] = "Perempuan";
40 data.telp[3] = "0812";
41
42 data.nama[4] = "Hye";
43 data.alamat[4] = "Jl. Matahari";
44 data.umur[4] = 26;
45 data.kelamin[4] = "Perempuan";
46 data.telp[4] = "0878";
47
48 data.nama[5] = "Tenz";
49 data.alamat[5] = "Jl. Sentinel";
50 data.umur[5] = 28;
51 data.kelamin[5] = "Laki-laki";
52 data.telp[5] = "0812";
53
54 data.nama[6] = "Jane";
55 data.alamat[6] = "Jl. Forest";
56 data.umur[6] = 30;
57 data.kelamin[6] = "Perempuan";
58 data.telp[6] = "0878";
59
60 cout<<endl;
61 cout<<"Data Pelanggan Toko :";
62 cout<<"\n";
63 cout<<" | Nama | Alamat | Umur | Kelamin | No Telp |";
64 cout<<"\n";
65
66 for (i = 0; i < jumlah; i++) {
67     cout<<" | " << setw(10) << data.nama[i] <<" | "
68         << setw(15) << data.alamat[i] <<" | "
69         << setw(4) << data.umur[i] <<" | "
70         << setw(9) << data.kelamin[i] <<" | "
71         << setw(12) << data.telp[i] <<"\n";
72 }
73
74 cout<<"\n";
75
76 return 0;
77 }
78
```

Command Prompt

```
F:\>g++ pasd08-02.cpp -o pasd08-02
F:\>.pasd08-02

Data Pelanggan Toko :

 | Nama | Alamat | Umur | Kelamin | No Telp |
 |-----|-----|-----|-----|-----|
 | Agil | Jl. Bintara | 20 | Laki-laki | 0878 |
 | Deri | Jl. Layang | 21 | Laki-laki | 0812 |
 | Arneyva | Jl. Samudra | 18 | Perempuan | 0878 |
 | Alveria | Jl. Flowres | 19 | Perempuan | 0812 |
 | Hye | Jl. Matahari | 26 | Perempuan | 0878 |
 | Tenz | Jl. Sentinel | 28 | Laki-laki | 0812 |
 | Jane | Jl. Forest | 30 | Perempuan | 0878 |

F:\>
```

Pseudocode

Program Struktur 1

Kamus/Deklarasi Variabel
nama[maxi], alamat[maxi],
kelamin[maxi], telp[maxi] = string
umur[maxi] = int
jumlah : maxi = int

```
data.nama[0] = "Agil"  
data.alamat[0] = "Jl. Bintara"  
data.umur[0] = 20  
data.kelamin[0] = "Laki-laki"  
data.telp[0] = "0878"
```

```
data.nama[1] = "Deri"  
data.alamat[1] = "Jl. Layang"  
data.umur[1] = 21  
data.kelamin[1] = "Laki-laki"  
data.telp[1] = "0812"
```

```
data.nama[2] = "Arneyva"  
data.alamat[2] = "Jl. Samudra"  
data.umur[2] = 18  
data.kelamin[2] = "Perempuan"  
data.telp[2] = "0878"
```

```
data.nama[3] = "Alveria";  
data.alamat[3] = "Jl. Flowres";  
data.umur[3] = 19;  
data.kelamin[3] = "Perempuan";  
data.telp[3] = "0812";
```

```
data.nama[4] = "Hye"  
data.alamat[4] = "Jl. Matahari"  
data.umur[4] = 26  
data.kelamin[4] = "Perempuan"  
data.telp[4] = "0878"
```

```
data.nama[5] = "Tenz"  
data.alamat[5] = "Jl. Sentinel"  
data.umur[5] = 28  
data.kelamin[5] = "Laki-laki"  
data.telp[5] = "0812"
```

```
data.nama[6] = "Jane"  
data.alamat[6] = "Jl. Forest";  
data.umur[6] = 30  
data.kelamin[6] = "Perempuan"  
data.telp[6] = "0878"
```

```
for (i = 0; i < jumlah; i++)  
    print(data.nama[i])  
    print(data.alamat[i])  
    print(data.umur[i])  
    print(data.kelamin[i])  
    print(data.telp[i])  
endfor
```

Algoritma

1. Deklarasi struktur pelanggan_toko
2. Mendefinisikan struktur (pelanggan_toko data)
3. Selama (i=0) maka kerjakan 55 s.d 59
4. Menampilkan/Mencetak Nilai data.no[i]
5. Menampilkan/Mencetak Nilai data.nama[i]
6. Menampilkan/Mencetak Nilai data.alamat[i]
7. Menampilkan/Mencetak Nilai data.umur[i]
8. Menampilkan/Mencetak Nilai data.kelamin[i]
9. Menampilkan/Mencetak Nilai data.telp[i]
10. Selesai

pasd14-02

The screenshot shows a C++ IDE with a source file on the left and a command prompt window on the right. The source file contains C++ code for a program that takes student data and prints it in a structured format. The command prompt shows the output of the program, which includes student details and a table of course grades.

```

1 #include <iostream>
2 #include <string>
3 #include <iomanip>
4 using namespace std;
5
6 struct mata_kuliah {
7     string Matkul[20], nHuruf[20], nAngka[20];
8     int no[20], sks[20];
9 };
10
11 mata_kuliah data;
12
13 int main() {
14     char nama[20], npm[20];
15     int jumlah, i;
16
17     cout << "-----" << endl;
18     cout << "Kartu Hasil Studi[OHS]" << endl;
19     cout << "-----" << endl;
20
21     cout << "Nama Mahasiswa : "; cin >> nama;
22     cout << "Nomor Induk Mahasiswa : "; cin >> npm;
23
24     cout << endl;
25     cout << "Mata Kuliah Yang Ditempuh : ";
26     cin >> jumlah;
27
28     for (i = 1; i <= jumlah; i++) {
29         cout << endl;
30         cout << "No : "; cin >> data.no[i];
31         cout << "Mata Kuliah : "; cin >> data.Matkul[i];
32         cout << "SKS : "; cin >> data.sks[i];
33         cout << "Nilai Huruf : "; cin >> data.nHuruf[i];
34         cout << "Nilai Angka : "; cin >> data.nAngka[i];
35         cout << endl;
36     }
37
38     cout << endl;
39     cout << "-----" << endl;
40     cout << "No | Mata Kuliah | SKS | Nilai Huruf | Nilai Angka" << endl;
41     cout << "-----" << endl;
42     for (i = 1; i <= jumlah; i++) {
43         cout << " | " << setw(3) << data.no[i] << " | " << setw(17) << data.Matkul[i] << " | " << setw(4) << data.sks[i] << " | ";
44         cout << setw(11) << data.nHuruf[i] << " | " << setw(12) << data.nAngka[i] << " | " << endl;
45     }
46     cout << "-----" << endl;
47
48     cin.get();
49 }

```

The command prompt output shows the following data:

```

F:\>2

Kartu Hasil Studi[OHS]

Nama Mahasiswa : Agil
Nomor Induk Mahasiswa : 125

Mata Kuliah Yang Ditempuh : 3

No :1
Mata Kuliah :Fisika
SKS :2
Nilai Huruf :SembilanPuluh
Nilai Angka :90

No :2
Mata Kuliah :Kalkulus
SKS :3
Nilai Huruf :DelapanDelapan
Nilai Angka :88

No :3
Mata Kuliah :AljabarLinier
SKS :3
Nilai Huruf :SembilanDua
Nilai Angka :92

| No | Mata Kuliah | SKS | Nilai Huruf | Nilai Angka |
| 1 | Fisika | 2 | SembilanPuluh | 90 |
| 2 | Kalkulus | 3 | DelapanDelapan | 88 |
| 3 | AljabarLinier | 3 | SembilanDua | 92 |

```

Algoritma

1. Deklarasi struktur mata_kuliah (matkul, nHuruf, nAngka, no, sks)
2. Deklarasi struktur (mata_kuliah data)
3. Memasukkan Nilai Variabel nama
4. Memasukkan Nilai Variabel npm
5. Memasukkan Nilai Variabel jumlah
6. Selama (i = 1) maka kerjakan baris 7 s.d 10
7. Memasukkan Nilai Variabel data.no[i]
8. Memasukkan Nilai Variabel data.matkul[i]
9. Memasukkan Nilai Variabel data.sks[i]
10. Memasukkan Nilai Variabel data.nHuruf[i]
11. Memasukkan Nilai Variabel data.nAngka[i]
12. i++
13. Selama (i = 1) maka kerjakan baris 20 s.d 21
14. Mencetak/Menampilkan Nilai data.no[i]
15. Mencetak/Menampilkan Nilai data.matkul[i]
16. Mencetak/Menampilkan Nilai data.sks[i]
17. Mencetak/Menampilkan Nilai data.nHuruf[i]
18. Mencetak/Menampilkan Nilai data.nAngka[i]
19. i++
20. Selesai

Pseudocode

Kamus/Deklarasi Variabel:
 matkul[20], nHuruf[20], nAngka[20]: string
 no[3], sks[20] : int
 no[20],ssks[20] : char
 jumlah, i: int

Algoritma/Deskripsi:
 Mata_kuliah {matkul[20], nHuruf[20], nAngka[20],
 no[20], sks[20]}
 input(data.no[i])
 input(data.matkul[i])
 input(data.sks[i])
 input(data.nHuruf[i])
 input(data.nAngka[i])
 endfor

for (i dari 1 sampai jumlah+1)
 print(data.no[i])
 print(data.matkul[i])
 print(data.sks[i])
 print(data.nHuruf[i])
 print(data.nAngka[i])
 endfor