Tugas Praktikum Algoritma dan Struktur Data

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Dosen:

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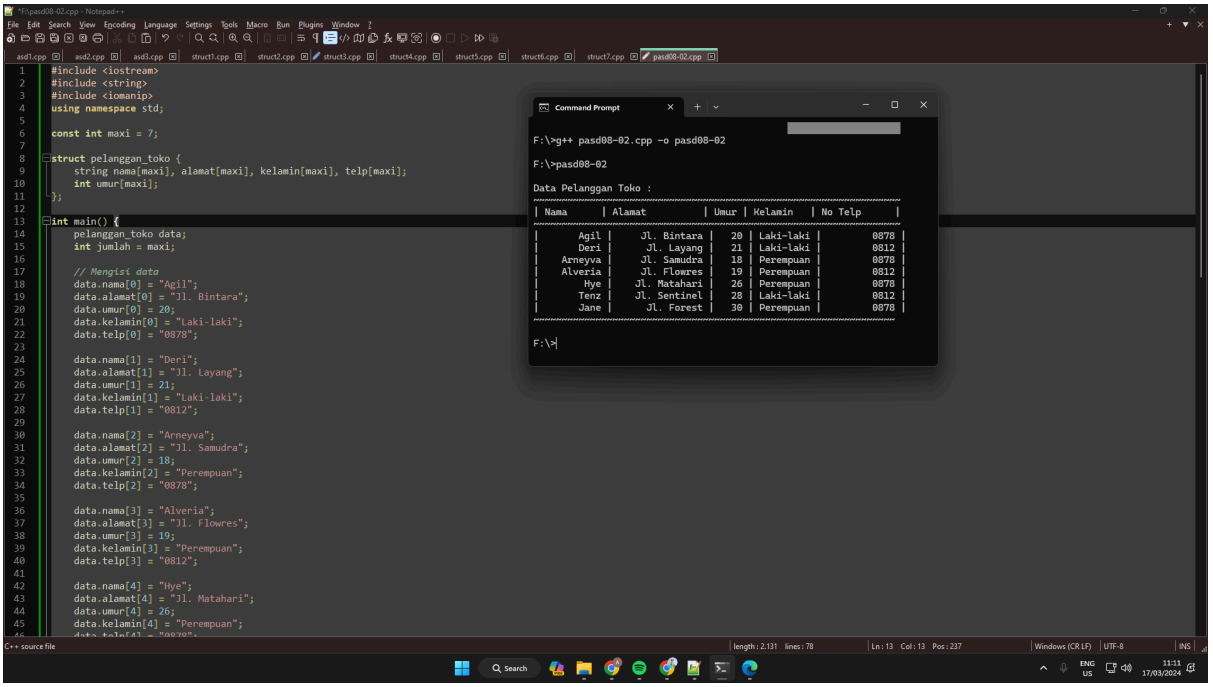
Prak. Algoritma dan Struktur Data - I

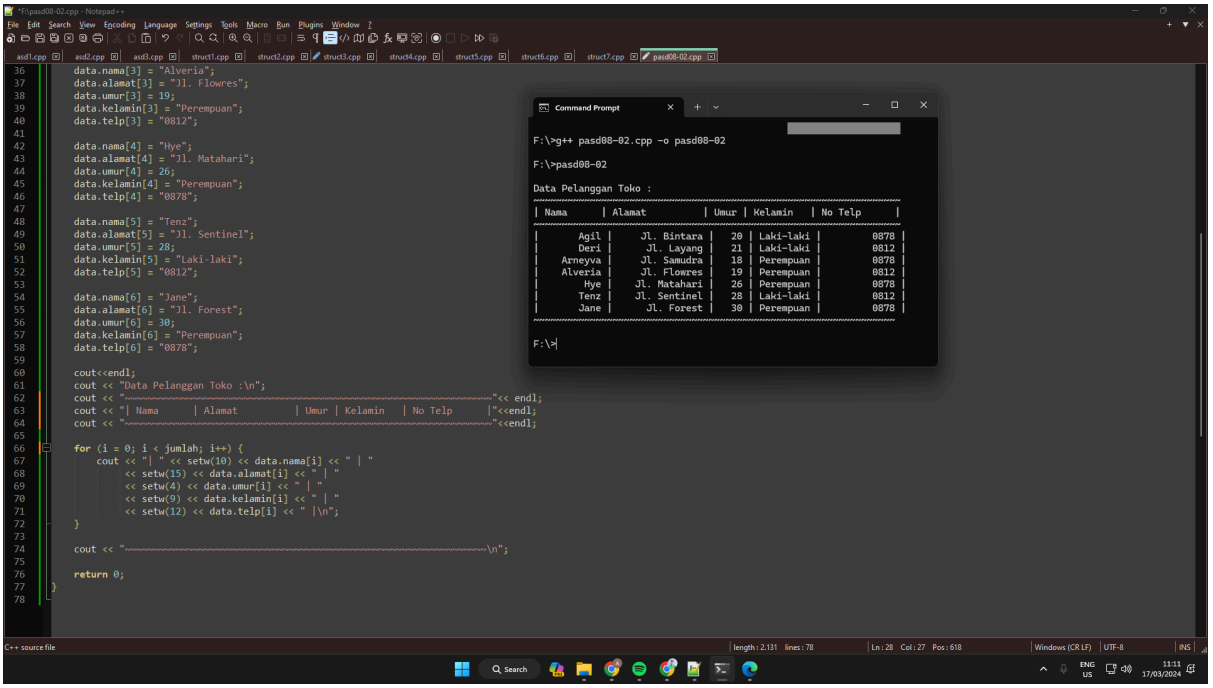
S1-Teknik Informatika
Fakultas Teknik
Universitas Pancasila 2023/2024

pasd08-02



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

const int maxi = 7;

struct pelanggan_toko {
    string nama[maxi], alamat[maxi], kelamin[maxi], telp[maxi];
    int umur[maxi];
};

int main() {
    pelanggan_toko data;
    int jumlah = maxi;

    // Mengisi data
    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";
```

```
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:\>
```



```
    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";

    cout<<endl;
    cout << "Data Pelanggan Toko :\n";
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<< endl;
    cout << "| Nama       | Alamat          | Umur | Kelamin   | No Telp      |"<<endl;
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<<endl;

    for (i = 0; i < jumlah; i++) {
        cout << "| " << setw(10) << data.nama[i] << " | "
             << setw(15) << data.alamat[i] << " | "
             << setw(4) << data.umur[i] << " | "
             << setw(9) << data.kelamin[i] << " | "
             << setw(12) << data.telp[i] << " |\n";
    }

    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~\n";

    return 0;
}
```

```
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"
```

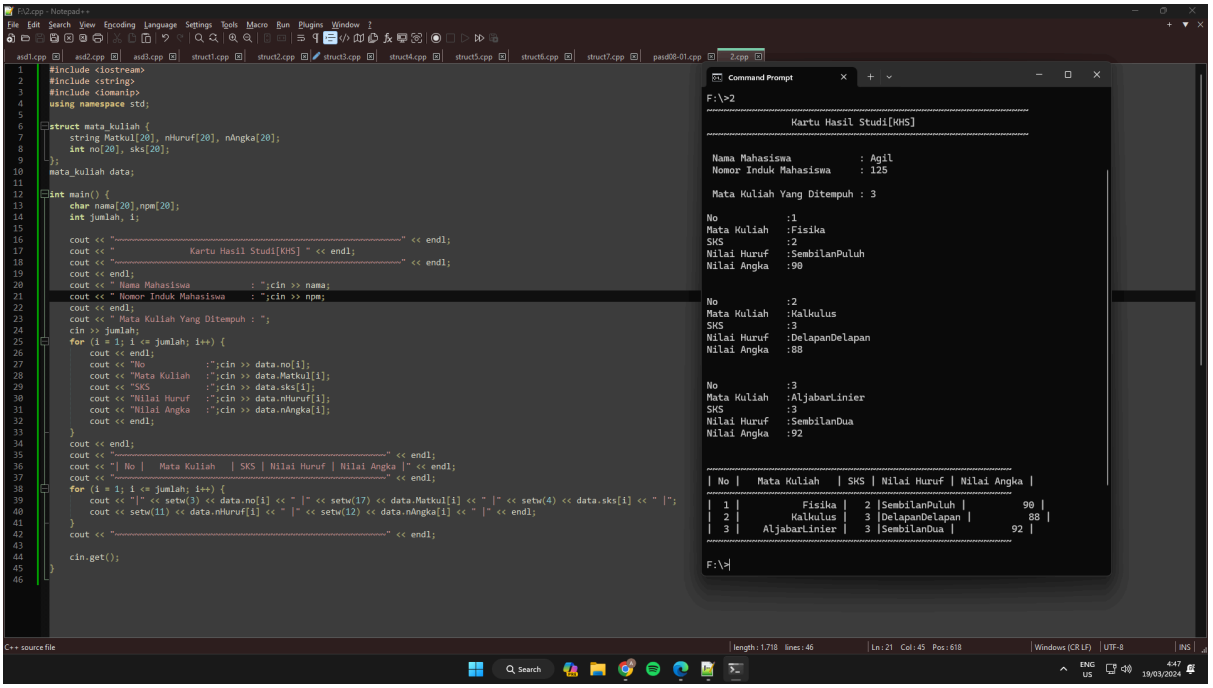
```
data.nama[3] = "Alveria";
data.alamat[3] = "Jl. Flowres";
data.umur[3] = 19;
data.kelamin[3] ="Perempuan";
data.telp[3] = "0812";

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



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

struct mata_kuliah {
    string Matkul[20], nHuruf[20], nAngka[20];
    int no[20], sks[20];
};
mata_kuliah data;

int main() {
    char nama[20],npm[20];
    int jumlah, i;

    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~" << endl;
    cout << "               Kartu Hasil Studi[KHS] " << endl;
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~" << endl;
    cout << endl;
    cout << " Nama Mahasiswa            : ";cin >> nama;
    cout << " Nomor Induk Mahasiswa     : ";cin >> npm;
    cout << endl;
    cout << " Mata Kuliah Yang Ditempuh : ";
    cin >> jumlah;
    for (i = 1; i <= jumlah; i++) {
        cout << endl;
        cout << "No            :";cin >> data.no[i];
        cout << "Mata Kuliah   :";cin >> data.Matkul[i];
        cout << "SKS           :";cin >> data.sks[i];
        cout << "Nilai Huruf   :";cin >> data.nHuruf[i];
        cout << "Nilai Angka   :";cin >> data.nAngka[i];
        cout << endl;
    }
    cout << endl;
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~" << endl;
    cout << "| No |    Mata Kuliah    | SKS | Nilai Huruf | Nilai Angka |" << endl;
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~" << endl;
    for (i = 1; i <= jumlah; i++) {
        cout << "|" << setw(3) << data.no[i] << " |" << setw(17) << data.Matkul[i] << " |" << setw(4) << data.sks[i] << " |";
        cout << setw(11) << data.nHuruf[i] << " |" << setw(12) << data.nAngka[i] << " |" << endl;
    }
    cout << "~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~" << endl;

    cin.get();
}
```

```
Command Prompt
F:\>2
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
               Kartu Hasil Studi[KHS]
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

 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 |
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

F:\>
```

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

Pesudocode

```
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
```