

## WORKSHEET – MODUL 4

Identitas mahasiswa:

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Intruksi: Kerjakan semua percobaan dan *check points* yang ada pada Modul 4 dan tuliskan jawabannya pada worksheet ini.

### Percobaan 1: STRUCTURE

1. Ada berapa elemen yang ada pada structure pegawai?

3

2. Informasi Apakah yang dikeluarkan program di atas?

Nama pegawai, id pegawai, gaji pegawai

3. Modifikasilah program di atas untuk menambahkan 2 elemen structure, yaitu alamat dan umur pegawai

```

1  #include <iostream>
2  using namespace std;
3
4  struct pegawai {
5      char nama[20];
6      int id;
7      float gaji;
8      char alamat[50];
9      int umur;
10 };
11
12 int main () {
13     pegawai pgw;
14     cout << "Masukkan Nama: \n";
15     cin.get (pgw.nama,20);
16     cin.ignore();
17     cout << "Masukkan id Pegawai: \n";
18     cin >> pgw.id;
19     cout << "Masukkan gaji: \n";
20     cin >> pgw.gaji;
21     cin.ignore();
22     cout << "Masukkan alamat: \n";
23     cin.get (pgw.alamat,50);
24     cout << "Masukkan umur: \n";
25     cin >> pgw.umur;
26
27     cout << "\nTampilkan Information Pegawai" <<endl;
28     cout << "Nama:" << pgw.nama <<endl;
29     cout << "ID:" << pgw.id <<endl;
30     cout << "Gaji:" <<pgw.gaji <<endl;
31     cout << "Alamat:" <<pgw.alamat <<endl;
32     cout << "Umur:" <<pgw.umur <<endl;
33
34     return 0;
35 }

```

4. Modifikasi program sehingga keluarannya sesuai dengan jumlah elemen yang sudah dimodifikasi sebelumnya

```

1  #include <iostream>
2  using namespace std;
3
4  struct pegawai {
5      char nama[20];
6      int id;
7      float gaji;
8      char alamat[50];
9      int umur;
10 };
11
12 int main () {
13     pegawai pgw;
14     cout << "Masukkan Nama: \n";
15     cin.get (pgw.nama,20);
16     cin.ignore();
17     cout << "Masukkan id Pegawai: \n";
18     cin >> pgw.id;
19     cout << "Masukkan gaji: \n";
20     cin >> pgw.gaji;
21     cin.ignore();
22     cout << "Masukkan alamat: \n";
23     cin.get (pgw.alamat,50);
24     cout << "Masukkan umur: \n";
25     cin >> pgw.umur;
26
27     cout << "\nTampilkan Information Pegawai" <<endl;
28     cout << "Nama:" << pgw.nama <<endl;
29     cout << "ID:" << pgw.id <<endl;
30     cout << "Gaji:" <<pgw.gaji <<endl;
31     cout << "Alamat:" <<pgw.alamat <<endl;
32     cout << "Umur:" <<pgw.umur <<endl;
33
34     return 0;
35 }

```

Output :

```

Praktikan@CDSR3-33 MSYS /c/iam
$ ./cl.exe
Masukkan Nama:
iam
Masukkan id Pegawai:
13
Masukkan gaji:
10
Masukkan alamat:
mgl
Masukkan umur:
19

Tampilkan Information Pegawai
Nama:iam
ID:13
Gaji:10
Alamat:mgl
Umur:19

```

## Percobaan 2: STRUCTURE

1. Ada berapa produk yang dikeluarkan program di atas?

Ada 2 produk yang dikeluarkan

2. Modifikasilah program di atas untuk menambahkan dan menampilkan 2 jenis produk lain

```
1  #include <iostream>
2  using namespace std;
3  struct Produk {
4      int kode;
5      float harga;
6  } peg1, peg2, peg3, peg4;
7
8  int main() {
9      cout << "Masukkan Produk Pertama : \n";
10     cout << "Masukkan kode Produk : \n";
11     cin >> peg1.kode;
12     cout << "Masukkan harga : \n";
13     cin >> peg1.harga;
14     cout << "Masukkan Produk Kedua: \n";
15     cout << "Masukkan kode Produk : \n";
16     cin >> peg2.kode;
17     cout << "Masukkan harga : \n";
18     cin >> peg2.harga;
19     cout << "Masukkan Produk Ketiga : \n";
20     cout << "Masukkan kode Produk : \n";
21     cin >> peg3.kode;
22     cout << "Masukkan harga : \n";
23     cin >> peg3.harga;
24     cout << "Masukkan Produk Keempat : \n";
25     cout << "Masukkan kode Produk : \n";
26     cin >> peg4.kode;
27     cout << "Masukkan harga : \n";
28     cin >> peg4.harga;
29
30
31     cout << "\nTampilkan Information Produk Pertama" << endl;
32     cout << "Kode: " << peg1.kode << endl;
33     cout << "Harga: " << peg1.harga;
34     cout << "\nTampilkan Information Produk Kedua" << endl;
35     cout << "Kode: " << peg2.kode << endl;
36     cout << "Harga: " << peg2.harga;
37     cout << "\nTampilkan Information Produk Ketiga" << endl;
38     cout << "Kode: " << peg3.kode << endl;
39     cout << "Harga: " << peg3.harga;
40     cout << "\nTampilkan Information Produk Keempat" << endl;
41     cout << "Kode: " << peg4.kode << endl;
42     cout << "Harga: " << peg4.harga;
43
44     return 0;
45 }
```

Output :

```
Praktikan@CDSR3-33 MSYS /c/iam
$ ./binary.exe
Masukkan Produk Pertama :
Masukkan kode Produk :
1
Masukkan harga :
10
Masukkan Produk Kedua:
Masukkan kode Produk :
2
Masukkan harga :
20
Masukkan Produk Ketiga :
Masukkan kode Produk :
3
Masukkan harga :
30
Masukkan Produk Keempat :
Masukkan kode Produk :
4
Masukkan harga :
40

Tampilkan Information Produk Pertama
Kode: 1
Harga: 10
Tampilkan Information Produk Kedua
Kode: 2
Harga: 20
Tampilkan Information Produk Ketiga
Kode: 3
Harga: 30
Tampilkan Information Produk Keempat
Kode: 4
Harga: 40
```

### Percobaan 3: STRUCTURE

1. Ada berapa buku yang dikeluarkan program di atas?

Ada dua buku yang menjadi keluaran program diatas. "Learn C++ Programming" dan "Telecom Billing".

2. Modifikasilah program di atas untuk menambahkan 2 elemen structure dan menampilkannya

```

1  #include <iostream>
2  #include <cstring>
3  using namespace std;
4  struct Books {
5      char title[50];
6      char author[50];
7      char publisher[50];
8      char subject[100];
9      int year;
10     int book_id;
11 };
12
13 int main() {
14     struct Books Book1; // Declare Book1 of type Book
15     struct Books Book2; // Declare Book2 of type Book
16
17     // book 1 specification
18     strcpy( Book1.title, "Learn C++ Programming");
19     strcpy( Book1.author, "Chand Miyan");
20     strcpy( Book1.publisher, "Gramedia");
21     strcpy( Book1.subject, "C++ Programming");
22     Book1.year = 2012;
23     Book1.book_id = 6495407;
24
25     // book 2 specification
26     strcpy( Book2.title, "Telecom Billing");
27     strcpy( Book2.author, "Yakit Singha");
28     strcpy( Book2.publisher, "PT Telkom");
29     strcpy( Book2.subject, "Telecom");
30     Book2.year = 2018;
31     Book2.book_id = 6495700;
32
33     // Print Book1 info
34     cout << "Book 1 title : " << Book1.title <<endl;
35     cout << "Book 1 author : " << Book1.author <<endl;
36     cout << "Book 1 publisher : " << Book1.publisher <<endl;
37     cout << "Book 1 subject : " << Book1.subject <<endl;
38     cout << "Book 1 year release : " << Book1.year <<endl;
39     cout << "Book 1 id : " << Book1.book_id <<endl;
40
41     // Print Book2 info
42     cout << "Book 2 title : " << Book2.title <<endl;
43     cout << "Book 2 author : " << Book2.author <<endl;
44     cout << "Book 2 publisher : " << Book2.publisher <<endl;
45     cout << "Book 2 subject : " << Book2.subject <<endl;
46     cout << "Book 2 year release : " << Book2.year <<endl;
47     cout << "Book 2 id : " << Book2.book_id <<endl;
48     return 0;
49 }

```

Output (saya menambahkan publisher dan year release):

```

Praktikan@CDSR3-33 MSYS /c/iam
$ ./binary.exe
Book 1 title : Learn C++ Programming
Book 1 author : Chand Miyan
Book 1 publisher : Gramedia
Book 1 subject : C++ Programming
Book 1 year release : 2012
Book 1 id : 6495407
Book 2 title : Telecom Billing
Book 2 author : Yakut Singha
Book 2 publisher : PT Telkom
Book 2 subject : Telecom
Book 2 year release : 2018
Book 2 id : 6495700

```

## Percobaan 4: STRUCTURE

1. Apakah terdapat kesalahan pada program tersebut? Tunjukkan kesalahan dan jelaskan

```

Praktikan@CDSR3-33 MSYS /c/iam
$ g++ strukturmhs.cpp -o strukturmhs.exe
strukturmhs.cpp: In function 'int main()':
strukturmhs.cpp:9:9: error: 'mhs' was not declared in this scope
   9 |         mhs;
     |         ^~~
strukturmhs.cpp:11:17: error: 'nama' was not declared in this scope
  11 |         cin.get(nama,40);
     |                   ^~~~~
strukturmhs.cpp:13:16: error: 'angkatan' was not declared in this scope
  13 |         cin >> angkatan;
     |                   ^~~~~~

```

Kesalahan pertama, belum ada pendeklarasian tipe data pada mhs (harusnya Mahasiswa mhs)

Kesalahan kedua, adanya penulisan input nama yang salah (seharusnya : cin.get(mhs.nama,40);)

Kesalahan ketiga, adanya penulisan input angkatan yang salah (seharusnya : cin >> mhs.angkatan;)

2. Bila terdapat kesalahan, cobalah perbaiki program tersebut hingga dapat di-*compile* dan memberikan hasil

```

1  #include <iostream>
2  using namespace std;
3  struct Mahasiswa{
4      char nama[40];
5      int angkatan;
6  };
7
8  int main(){
9      Mahasiswa mhs;
10     cout << "Masukkan Nama Mahasiswa :";
11     cin.get(mhs.nama,40);
12     cout << "Masukkan Angkatan :";
13     cin >> mhs.angkatan;
14     cout << "Data Mahasiswa" <<endl;
15     cout << "Nama :" <<mhs.nama <<endl;
16     cout << "Angkatan :" <<mhs.angkatan <<endl;
17
18     return 0;
19 }

```

Output :

```

Praktikan@CDSR3-33 MSYS /c/iam
$ ./strukturmhs.exe
Masukkan Nama Mahasiswa :iam
Masukkan Angkatan :2024
Data Mahasiswa
Nama :iam
Angkatan :2024

```

## Percobaan 5: UNION

Apakah tujuan dari program di atas? Jelaskan

Tujuan program yang menggunakan union di atas adalah untuk memberikan informasi

mengenai data mahasiswa. Program ini menggunakan Union, artinya, seluruh alokasi memori untuk setiap elemen akan sama. Selain itu, ukuran dari variabel union akan diambil hanya dari ukuran terbesar seluruh elemen. Penggunaan Union ini juga berarti bahwa setiap penyimpanan data di setiap elemen akan saling mempengaruhi satu sama lain.

## Percobaan 6: TYPEDEF

1. Apakah maksud dari program di atas?

Memberikan informasi data mahasiswa dengan menggunakan struct yang penulisannya diubah/disingkat menggunakan typedef, dimana nanti penulisan deklarasi tipe data mahasiswa disingkat menjadi mhs saja

2. Buatlah bentuk typedef dari yang lainnya

```
1  #include <iostream>
2  using namespace std;
3  typedef struct mahasiswa{
4      typedef char x;
5      typedef int y;
6      x nama[40]; // modifikasi x menjadi nama
7      y angkatan; // modifikasi y menjadi angkatan
8  }mhs;
9
10 int main(){
11     mhs aku;
12     cout << "Masukkan Nama Mahasiswa : ";
13     cin.get(aku.nama,40);
14     cout << "Masukkan Angkatan : "<<endl;
15     cin >> aku.angkatan;
16     cout << "Data Mahasiswa"<<endl;
17     cout << "Nama : "<< aku.nama <<endl;
18     cout << "Angkatan : "<< aku.angkatan <<endl;
19
20     return 0;
21 }
```

Output :

```
Praktikan@CDSR3-33 MSYS /c/iam
$ ./p6.exe
Masukkan Nama Mahasiswa :iam
Masukkan Angkatan :
2024
Data Mahasiswa
Nama :iam
Angkatan :2024
```

## Check poin 1

Screenshot dan masukkan ke *worksheet* hasil kerja anda.



```

1  #include <iostream>
2  using namespace std;
3
4  struct Mahasiswa{
5      char nama[40];
6      int angkatan;
7  };
8
9  int main(){
10     Mahasiswa mhs;
11     cout << "Masukkan Nama Mahasiswa : ";
12     cin.get(mhs.nama,40);
13     cout << "Masukkan Angkatan : ";
14     cin >> mhs.angkatan;
15
16     cout << "Data Mahasiswa" <<endl;
17     cout << "Nama : " <<mhs.nama <<endl;
18     cout << "Angkatan : " <<mhs.angkatan <<endl;
19
20     cout << "Alokasi memori untuk elemen nama :" <<&mhs.nama <<endl;
21     cout << "Alokasi memori untuk elemen angkatan :" <<&mhs.angkatan <<endl;
22
23     cout << "Ukuran dari variabel union :" <<sizeof(Mahasiswa) <<endl;
24
25     return 0;
26 }

```

Output :

```

Praktikan@CDSR3-33 MSYS /c/iam
$ ./c1.exe
Masukkan Nama Mahasiswa : iam
Masukkan Angkatan : 2024
Data Mahasiswa
Nama : iam
Angkatan : 2024
Alokasi memori untuk elemen nama :0x7ffffcc10
Alokasi memori untuk elemen angkatan :0x7ffffcc38
Ukuran dari variabel union :44

```

## Check poin 2

Screenshot dan masukkan ke *worksheet* hasil kerja anda.

```

1  #include <iostream>
2  #include <cstring>
3  using namespace std;
4  struct Books {
5      char title[50];
6      char author[50];
7      char publisher[50];
8      char subject[100];
9      int year;
10     int book_id;
11     double price;
12     float page;
13 };
14
15 int main() {
16     struct Books Book1;
17     struct Books Book2;
18     struct Books Book3;
19     struct Books Book4;
20     struct Books Book5;
21
22     // book 1 specification
23     strcpy( Book1.title, "Cara Jago Main Valo");
24     strcpy( Book1.author, "Wikan");
25     strcpy( Book1.publisher, "terobietia");
26     strcpy( Book1.subject, "Hiburan");
27     Book1.year = 2023;
28     Book1.book_id = 03102006;
29     Book1.price = 100000;
30     Book1.page = 135;
31
32     // book 2 specification
33     strcpy( Book2.title, "FFKG EZ A");
34     strcpy( Book2.author, "Tutor FFKG");
35     strcpy( Book2.publisher, "Adkesma KMTETI");
36     strcpy( Book2.subject, "Edukasi");
37     Book2.year = 2024;
38     Book2.book_id = 10000000;
39     Book2.price = 500000;
40     Book2.page = 732;
41
42     // book 3 specification
43     strcpy( Book3.title, "Fenomena Buka Bersama saat Ramadan");
44     strcpy( Book3.author, "Roni sang Pengamat");
45     strcpy( Book3.publisher, "Gramedia");
46     strcpy( Book3.subject, "Sosial dan Budaya");
47     Book3.year = 2020;
48     Book3.book_id = 01032020;
49     Book3.price = 65000;
50     Book3.page = 74;
51

```

```

52 // book 4 specification
53 strcpy( Book4.title, "Tidur");
54 strcpy( Book4.author, "Fransiscus");
55 strcpy( Book4.publisher, "Mandiri");
56 strcpy( Book4.subject, "Opini");
57 Book4.year = 2025;
58 Book4.book_id = 12032025;
59 Book4.price = 50000;
60 Book4.page = 37;
61
62 // book 5 specification
63 strcpy( Book5.title, "Sang Raja Jawa");
64 strcpy( Book5.author, "Mulyono");
65 strcpy( Book5.publisher, "Pemerintah Jawa");
66 strcpy( Book5.subject, "Opini");
67 Book5.year = 2024;
68 Book5.book_id = 01012024;
69 Book5.price = 235000;
70 Book5.page = 354;
71
72 // Print Book1 info
73 cout << "Book 1 title : " << Book1.title <<endl;
74 cout << "Book 1 author : " << Book1.author <<endl;
75 cout << "Book 1 publisher : " << Book1.publisher <<endl;
76 cout << "Book 1 subject : " << Book1.subject <<endl;
77 cout << "Book 1 year release : " << Book1.year <<endl;
78 cout << "Book 1 page : " << Book1.page <<endl;
79 cout << "Book 1 price : " << Book1.price <<endl;
80 cout << "Book 1 id : " << Book1.book_id <<endl;
81
82 // Print Book2 info
83 cout << "Book 2 title : " << Book2.title <<endl;
84 cout << "Book 2 author : " << Book2.author <<endl;
85 cout << "Book 2 publisher : " << Book2.publisher <<endl;
86 cout << "Book 2 subject : " << Book2.subject <<endl;
87 cout << "Book 2 page : " << Book2.page <<endl;
88 cout << "Book 2 price : " << Book2.price <<endl;
89 cout << "Book 2 year release : " << Book2.year <<endl;
90 cout << "Book 2 id : " << Book2.book_id <<endl;
91
92 // Print Book3 info
93 cout << "Book 3 title : " << Book3.title <<endl;
94 cout << "Book 3 author : " << Book3.author <<endl;
95 cout << "Book 3 publisher : " << Book3.publisher <<endl;
96 cout << "Book 3 subject : " << Book3.subject <<endl;
97 cout << "Book 3 year release : " << Book3.year <<endl;
98 cout << "Book 3 page : " << Book3.page <<endl;
99 cout << "Book 3 price : " << Book3.price <<endl;
100 cout << "Book 3 id : " << Book3.book_id <<endl;
101
102 // Print Book4 info
103 cout << "Book 4 title : " << Book4.title <<endl;
104 cout << "Book 4 author : " << Book4.author <<endl;
105 cout << "Book 4 publisher : " << Book4.publisher <<endl;
106 cout << "Book 4 subject : " << Book4.subject <<endl;
107 cout << "Book 4 year release : " << Book4.year <<endl;
108 cout << "Book 4 page : " << Book4.page <<endl;
109 cout << "Book 4 price : " << Book4.price <<endl;
110 cout << "Book 4 id : " << Book4.book_id <<endl;
111
112 // Print Book5 info
113 cout << "Book 5 title : " << Book5.title <<endl;
114 cout << "Book 5 author : " << Book5.author <<endl;
115 cout << "Book 5 publisher : " << Book5.publisher <<endl;
116 cout << "Book 5 subject : " << Book5.subject <<endl;
117 cout << "Book 5 year release : " << Book5.year <<endl;
118 cout << "Book 5 page : " << Book5.page <<endl;
119 cout << "Book 5 price : " << Book5.price <<endl;
120 cout << "Book 5 id : " << Book5.book_id <<endl;
121
122 return 0;
123 }

```

Output :

```
Praktikan@CDSR3-33 MSYS /c/iam
$ ./c2.exe
Book 1 title : Cara Jago Main Valo
Book 1 author : Wikan
Book 1 publisher : terobietia
Book 1 subject : Hiburan
Book 1 year release : 2023
Book 1 page : 135
Book 1 price : 100000
Book 1 id : 820230
Book 2 title : FFKG EZ A
Book 2 author : Tutor FFKG
Book 2 publisher : Adkesma KMTETI
Book 2 subject : Edukasi
Book 2 page : 732
Book 2 price : 500000
Book 2 year release : 2024
Book 2 id : 10000000
Book 3 title : Fenomena Buka Bersama saat Ramadan
Book 3 author : Roni sang Pengamat
Book 3 publisher : Gramedia
Book 3 subject : Sosial dan Budaya
Book 3 year release : 2020
Book 3 page : 74
Book 3 price : 65000
Book 3 id : 275472
Book 4 title : Tidur
Book 4 author : Fransiscus
Book 4 publisher : Mandiri
Book 4 subject : Opini
Book 4 year release : 2025
Book 4 page : 37
Book 4 price : 50000
Book 4 id : 12032025
Book 5 title : Sang Raja Jawa
Book 5 author : Mulyono
Book 5 publisher : Pemerintah Jawa
Book 5 subject : Opini
Book 5 year release : 2024
Book 5 page : 354
Book 5 price : 235000
Book 5 id : 267284
```

### *Check poin 3*

*Screenshot* dan masukkan ke *worksheet* hasil kerja anda.

```

1  #include <iostream>
2  #include <cstring>
3  using namespace std;
4
5  union FilmData {
6      char title[50];
7      char genre[20];
8      char language[20];
9      int release_year;
10     double imdb_rating;
11 };
12
13 struct Film {
14     FilmData title;
15     FilmData genre;
16     FilmData language;
17     FilmData release_year;
18     FilmData imdb_rating;
19 };
20
21 int main() {
22     Film movie1, movie2, movie3;
23
24     // Movie 1 specification
25     strcpy(movie1.title.title, "KKN di Desa Penari");
26     strcpy(movie1.genre.genre, "Horror");
27     strcpy(movie1.language.language, "Bahasa Indonesia");
28     movie1.release_year.release_year = 2023;
29     movie1.imdb_rating.imdb_rating = 5.9;
30
31     // Movie 2 specification
32     strcpy(movie2.title.title, "Sewu Dino");
33     strcpy(movie2.genre.genre, "Horror");
34     strcpy(movie2.language.language, "Bahasa Indonesia");
35     movie2.release_year.release_year = 2023;
36     movie2.imdb_rating.imdb_rating = 8.5;
37
38     // Movie 3 specification
39     strcpy(movie3.title.title, "Angry Birds");
40     strcpy(movie3.genre.genre, "Animation");
41     strcpy(movie3.language.language, "Bahasa Inggris");
42     movie3.release_year.release_year = 2015;
43     movie3.imdb_rating.imdb_rating = 9.1;
44
45     // Print movie info
46     cout << "\n==== Film 1 Information =====\n";
47     cout << "Title       : " << movie1.title.title << endl;
48     cout << "Genre        : " << movie1.genre.genre << endl;
49     cout << "Language     : " << movie1.language.language << endl;
50     cout << "Year         : " << movie1.release_year.release_year << endl;
51     cout << "IMDB Rating  : " << movie1.imdb_rating.imdb_rating << endl;
52
53     cout << "\n==== Film 2 Information =====\n";
54     cout << "Title       : " << movie2.title.title << endl;
55     cout << "Genre        : " << movie2.genre.genre << endl;
56     cout << "Language     : " << movie2.language.language << endl;
57     cout << "Year         : " << movie2.release_year.release_year << endl;
58     cout << "IMDB Rating  : " << movie2.imdb_rating.imdb_rating << endl;
59
60     cout << "\n==== Film 3 Information =====\n";
61     cout << "Title       : " << movie3.title.title << endl;
62     cout << "Genre        : " << movie3.genre.genre << endl;
63     cout << "Language     : " << movie3.language.language << endl;
64     cout << "Year         : " << movie3.release_year.release_year << endl;
65     cout << "IMDB Rating  : " << movie3.imdb_rating.imdb_rating << endl;
66     cout << "\n==== Size Information =====\n";
67     cout << "Size of FilmData (union): " << sizeof(FilmData) << " bytes\n";
68     cout << "Size of each element in FilmData:\n";
69     cout << " Size of title       : " << sizeof(movie1.title) << " bytes\n";
70     cout << " Size of genre       : " << sizeof(movie1.genre) << " bytes\n";
71     cout << " Size of language    : " << sizeof(movie1.language) << " bytes\n";
72     cout << " Size of release_year: " << sizeof(movie1.release_year) << " bytes\n";
73     cout << " Size of imdb_rating : " << sizeof(movie1.imdb_rating) << " bytes\n";
74     // Size of Film struct
75     cout << "\nSize of Film struct : " << sizeof(Film) << " bytes\n";
76
77     return 0;
78 }

```

OUTPUT

```
Praktikan@CDSR3-33 MSYS /c/iam
$ ./c3.exe

===== Film 1 Information =====
Title       : KKN di Desa Penari
Genre       : Horror
Language    : Bahasa Indonesia
Year        : 2023
IMDB Rating : 5.9

===== Film 2 Information =====
Title       : Sewu Dino
Genre       : Horror
Language    : Bahasa Indonesia
Year        : 2023
IMDB Rating : 8.5

===== Film 3 Information =====
Title       : Angry Birds
Genre       : Animation
Language    : Bahasa Inggris
Year        : 2015
IMDB Rating : 9.1

===== Size Information =====
Size of FilmData (union): 56 bytes
Size of each element in FilmData:
  Size of title       : 56 bytes
  Size of genre       : 56 bytes
  Size of language    : 56 bytes
  Size of release_year: 56 bytes
  Size of imdb_rating : 56 bytes

Size of Film struct : 280 bytes
```