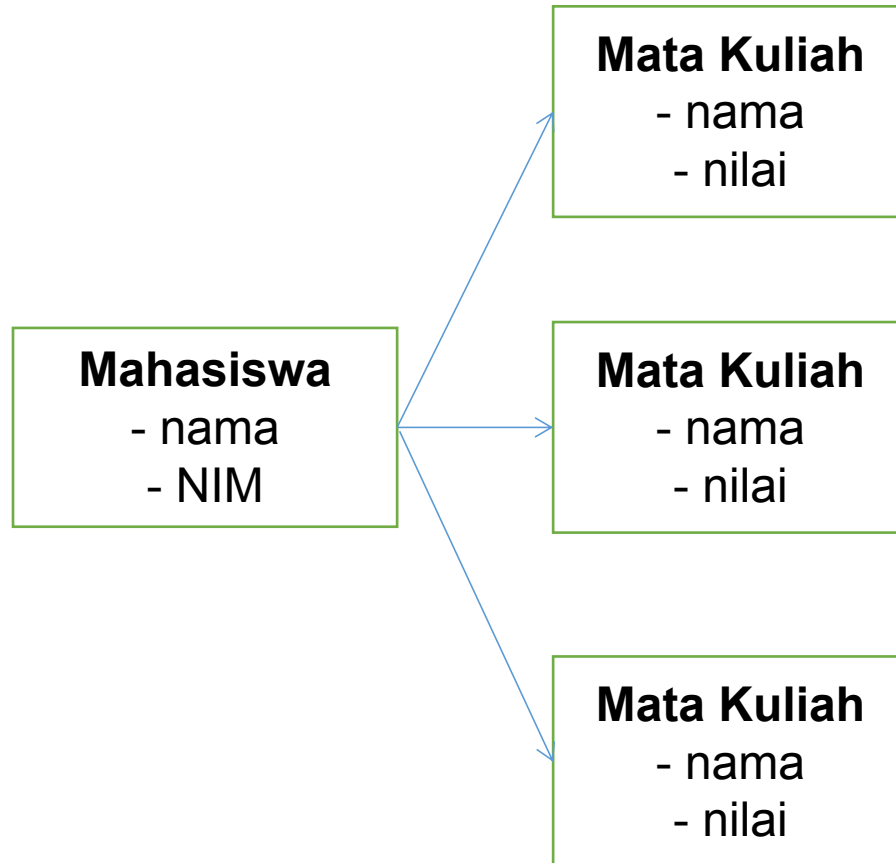


Record / Struct

Contoh kasus

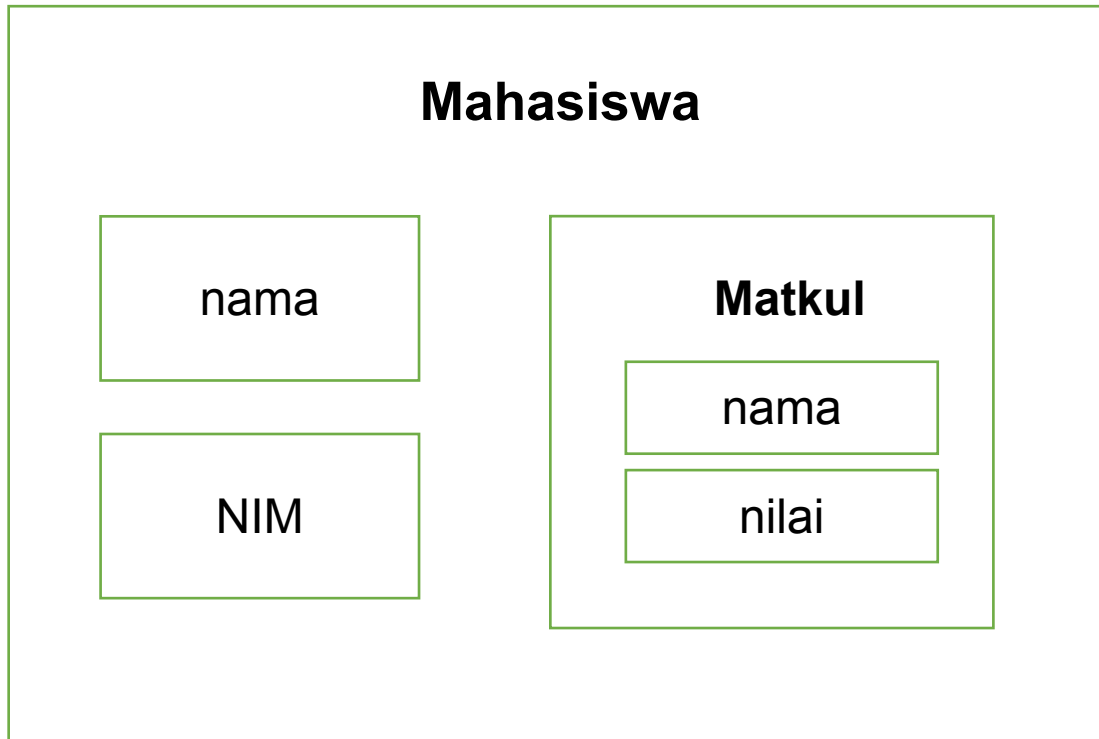


Struktur Dalam Array

```
// [banyak]
string namaMhs[10];
// [banyak]
int NIM[10];
// [mhs][banyak]
string namaMatkul[10][10];
// [mhs][matkul][banyak]
int nilaiMatkul[10][10][10];
```

BINGUNG!

Thanks to struct....



Struktur Dalam Struct

```
typedef struct {  
    string nama;  
    int nilai;  
}Matkul;
```

```
typedef struct {  
    int NIM;  
    string nama;  
    Matkul matkul[10];  
}Mahasiswa;
```

Array

90	11	32	23	14
----	----	----	----	----

Struct

Nama	NIM
IPK	Alamat

Deklarasi

```
typedef struct {  
    int nim;  
    string nama;  
}Mahasiswa;
```

```
Mahasiswa mhs;
```

```
struct Mahasiswa{  
    int nim;  
    string nama;  
};
```

```
struct Mahasiswa mhs;
```

Read dan Write data

```
typedef struct {  
    int nim;  
    string nama;  
}Mahasiswa;
```

```
struct Mahasiswa{  
    int nim;  
    string nama;  
};
```

```
Mahasiswa mhs;  
mhs.nim = 123;  
mhs.nama = "nama";  
cout << mhs.nim;
```

```
struct Mahasiswa mhs;  
mhs.nim = 123;  
mhs.nama = "nama";  
cout << mhs.nim;
```

Array of Struct

```
typedef struct {  
    int nim;  
    string nama;  
}Mahasiswa;
```

```
Mahasiswa mhs[10];  
mhs[0].nim = 123;  
mhs[0].nama = "nama";  
cout << mhs[0].nim;
```

```
typedef struct {  
    string nama;  
    string matkul[10]  
}Mahasiswa;
```

```
Mahasiswa mhs[10];  
mhs[0].matkul[0]="A";  
mhs[0].matkul[1]="B";  
cout << mhs[0].matkul[0];
```


Struct as function parameter

```
typedef struct {  
    int nim;  
    string nama;  
}Mahasiswa;
```

```
void printMhs(Mahasiswa mhs) {  
    cout << "Nama: " << mhs.nama << endl;  
    cout << "NIM : " << mhs.nim << endl;  
}
```

Pass by Value

```
void tes(int num) {  
    num = 99;  
}
```

```
int main() {  
    int n = 0;  
    test(n);  
    cout << n; // 0  
}
```

Pass by Reference

```
void tes(int *num) {  
    *num = 99;  
}
```

```
int main() {  
    int n = 0;  
    test(&n);  
    cout << n; // 99  
}
```

Pass by Value

```
void tes(Mhs mhs) {  
    mhs.nim = 99;  
}
```

```
int main() {  
    Mhs mhs={99, "A"};  
    test(mhs);  
    // 0  
    cout << mhs.nim;  
}
```

Pass by Reference

```
void tes(Mhs *mhs) {  
    (*mhs).nim = 99;  
}
```

```
int main() {  
    Mhs mhs={99, "A"};  
    test(&mhs);  
    // 99  
    cout << mhs.nim;  
}
```