

Phill-CPP-0621

Struct 結構

- 陣列 只放同質資料
- 異質的資料

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

struct Address{
    const char *name;
    int number;
    const char *street;
    const char *city;
    const char *zip;
};

int main()
{
    Address a ={
        "Phill Liu",
        1,
        "chung hsiao",
        "Taipei",
        "123"
    };

    cout << a.name <<endl;
    cout << a.number << endl;

    return 0;
}
```

struct 與指標結合

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

struct Address{
```

```

const char *name;
int number;
const char *street;
const char *city;
const char *zip;
};

int main()
{
    Address a = {
        "Phill Liu",
        1,
        "chung hsiao",
        "Taipei",
        "123"
    };

    Address* p= &a;

    cout << a.name <<endl;
    cout << a.number << endl;

    cout << p->name <<endl;
    cout << p->number << endl;

    return 0;
}

```

結構跟陣列

```

#include <iostream>
using namespace std;

struct SportsCar {
    const char *brand;
    const char *model;
    int topSpeed;
};

int main()
{
    const int ARRAY_SIZE =3;

    SportsCar sportsCars[ARRAY_SIZE]={
        {"Ferrari", "F8 Tributo", 340},
        {"Lamborghini", "Huracan EV0", 325},
        {"Porche", "911 GT3", 310}
    };
}

```

```

    for(int i=0; i< ARRAY_SIZE; ++i){
        cout << "Brand:" << sportsCars[i].brand << endl;
        cout << "model:" << sportsCars[i].model << endl;
        cout << "topSpeed:" << sportsCars[i].topSpeed << endl;
        cout << "-----" <<endl;
    }

    return 0;
}

```

改成指標版

SportCar *ptr

```

#include <iostream>
using namespace std;

struct SportsCar {
    const char *brand;
    const char *model;
    int topSpeed;
};

int main()
{
    const int ARRAY_SIZE =3;

    SportsCar sportsCars[ARRAY_SIZE]={
        {"Ferrari", "F8 Tributo", 340},
        {"Lamborghini", "Huracan EV0", 325},
        {"Porche", "911 GT3", 310}
    };

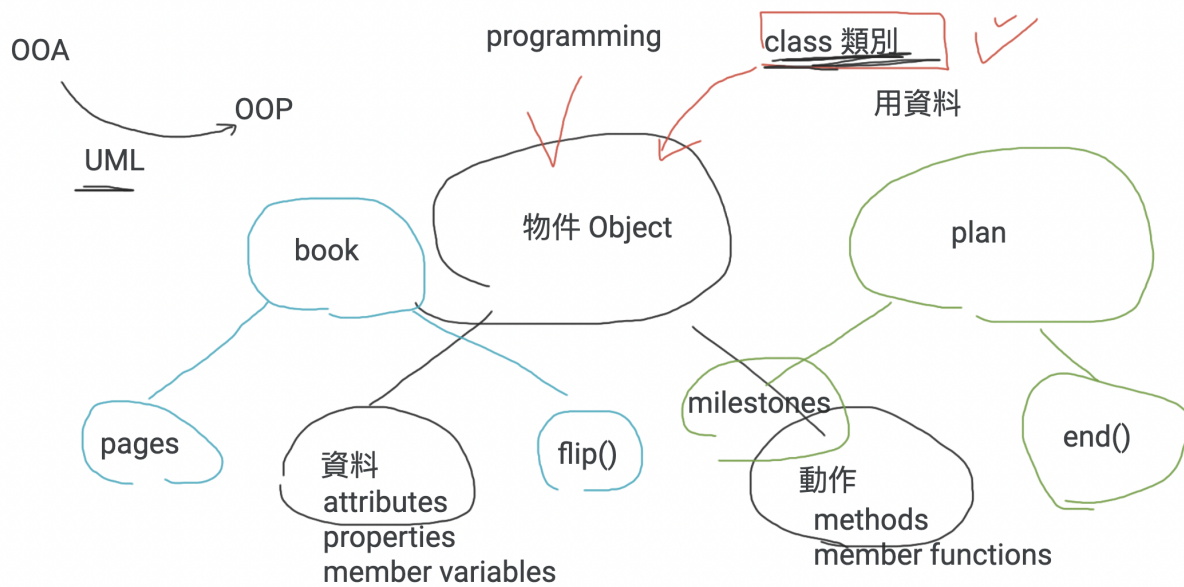
    for(int i=0; i< ARRAY_SIZE; ++i){
        cout << "Brand:" << sportsCars[i].brand << endl;
        cout << "model:" << sportsCars[i].model << endl;
        cout << "topSpeed:" << sportsCars[i].topSpeed << endl;
        cout << "-----" <<endl;
    }

    SportsCar* ptr= sportsCars;
    for(int i=0 ;i< ARRAY_SIZE; ++i){
        cout << "Brand=" << ptr-> brand <<endl;
        ++ptr;
    }
}

```

```
    return 0;  
}
```

C++ → OOP 物件導向



- class
- object

OOP 四大觀念

- abstraction
- data encapsulation
- inheritance
- polymorphism

Class 類別

