

# 프로그래밍 언어 (2) 실습

14주차

# 다중 상속

- ex1)

```
#include<iostream>
#include<string>

using namespace std;

class Employee{
private:
    int id;
    string name;

public:

    Employee(int , string);
    ~Employee();
    virtual int CalculatePay() const;
    virtual void Print() const;

};

Employee::Employee(int i, string n) : id(i),name(n){
}
Employee::~Employee(){
}
void Employee::Print() const{
    cout << "Id:" << id << " Name : " << name << " 급여 : " << CalculatePay() << endl;
}
int Employee::CalculatePay() const
{
    return 0;
}
```

# 다중 상속

- ex1) 계속

```
class SalariedEmp : public Employee{
private:
    int salary;
public:

    SalariedEmp(int i , string n, int s) : salary(s),Employee(i,n){

    }

    int CalculatePay() const{
        return salary;
    }

};
```

```
class HourlyEmp : public Employee{
private:
    int hours;
    int Payperhours;
public:

    HourlyEmp(int i , string n, int h, int p) : hours(h),Payperhours(p), Employee(i,n){

    }

    int CalculatePay() const{
        return hours * Payperhours ;
    }

};
```

# 다중 상속

- ex1) 계속

```
int main(){
    Employee* p[2] ;

    p[0] = new SalariedEmp(1, "홍길동", 100000);
    p[1] = new HourlyEmp(2, "박찬호", 30, 5000);

    for (int i = 0 ; i < 2 ; i ++){
        p[i]->Print();
    }

    for (int i = 0 ; i < 2 ; i ++){
        delete p[i];
    }

    return 0;
}
```

C:\Windows\system32\cmd.exe

Id:1 Name : 홍길동 급여 : 100000

Id:2 Name : 박찬호 급여 : 150000

계속하려면 아무 키나 누르십시오 . . .

# 다중 상속

- ex2)

```
#include<iostream>
#include<string>

using namespace std;

class Person
{
private:
    int id;
    string name;
public:
    Person() {
    }

    Person(int i, string n) : id(i),name(n) {
        cout << "Person Class // " << " id = " << i << " name = " << n << endl;
    }

};
```

# 다중 상속

- ex2) 계속

```
class Employee : virtual public Person{
private:
    int salary;
public:
    Employee(){
    }

    Employee(int id, string name, int sa): salary(sa),Person(id,name) {
    }
};

class Student :virtual public Person{
private:
    string major;

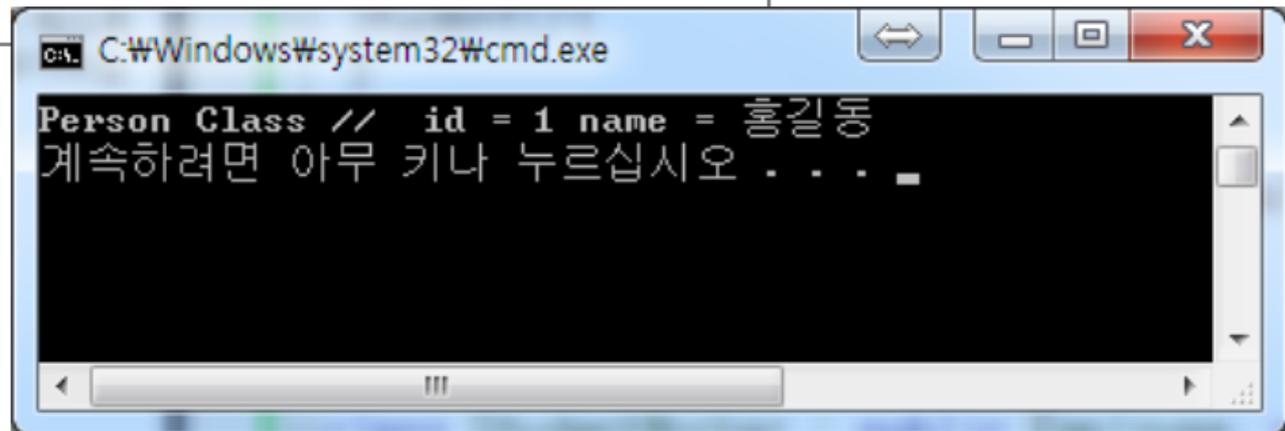
public:
    Student(){
    }

    Student(int id, string name, string ma): major(ma),Person(id,name) {
    }
};
```

# 다중 상속

- ex2) 계속

```
class StudentWorker : public Employee, public Student{  
  
public :  
    StudentWorker(int id, string name, int salary, string major)  
        :Student(id,name,major),Employee(id,name,salary),  
        Person(id,name) {  
    }  
};  
  
int main(){  
  
    StudentWorker sw(1,"홍길동",1000000,"수학과");  
}
```



```
C:\Windows\system32\cmd.exe  
Person Class // id = 1 name = 홍길동  
계속하려면 아무 키나 누르십시오 . . .
```

# 예외 처리

- ex3)

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

int main()
{
    int a, b;
    int div;

    try
    {
        cout << "숫자 입력 1 : " ;
        cin >> a;

        cout << "숫자 입력 2 : " ;
        cin >> b;

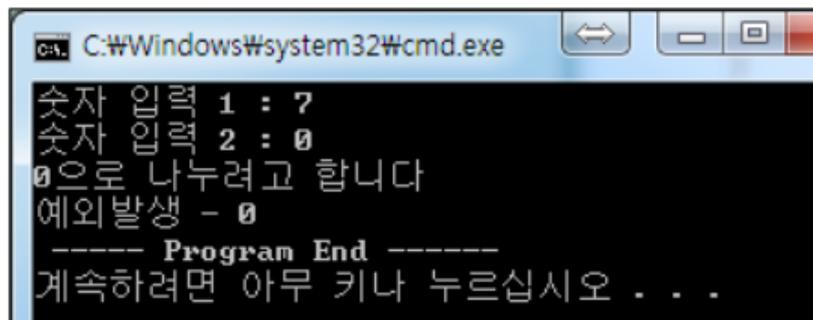
        if (b == 0)
        {
            throw 0;
        }

        div = a/b;

        cout << "나눈 값은 " << div << endl;
    }
}
```

```
catch(int i)
{
    if (i == 0)
        cout << "0으로 나누려고 합니다" << endl;

    cout << "예외발생 - " << i << endl;
}
catch(char *s)
{
    cout << "예외발생 - " << s << endl;
}
catch(...) //모든 예외 - 맨뒤에 ..
{
    cout << "예외발생" << endl;
}
cout << " ----- Program End -----" << endl;
}
```



```
C:\Windows\system32\cmd.exe
숫자 입력 1 : 7
숫자 입력 2 : 0
0으로 나누려고 합니다
예외발생 - 0
----- Program End -----
계속하려면 아무 키나 누르십시오 . . .
```

Q & A