Министерство образования Республики Беларусь

Учреждение образования

«Брестский Государственный технический университет»

Кафедра ИИТ

**Лабораторная работа №5**

По дисциплине «Проектирование программного обеспечения интеллектуальных систем»

Тема: «Ссылочный тип. Инициализация классов, конструкторы и деструкторы»

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**Цель:** научиться использовать ссылочный тип в классах.

**Ход работы:**

#include <iostream>

using namespace std;

class First {

public :

int amount;

int& amountref = amount;

First(int amount, int& amountref) {

this->amount = amount;

this->amountref = amountref;

}

First() {

amount = 0;

}

First(First& dan) {

this->amount = dan.amount;

}

void TO\_SET(int a) {

this->amount = a;

}

void TO\_SHOW() {

cout << "amount = " << amount << endl;

cout << "amountref = " << amountref << endl;

}

int& TO\_GET\_AMOUNT(int amount) {

int a = amount;

return a;

}

void TO\_NULL(First & obj) {

obj.amount = 0;

}

void TO\_SQR(First &obj, int &a) {

obj.amount = a \* a;

}

~First() {

cout << "1st elelement was deleted" << endl;

}

};

class Second {

public:

int num;

int& num\_ref = num;

Second(int num) {

this->num = num;

}

Second() {

num = 0;

}

Second(Second& obj) {

this->num = obj.num;

}

void TO\_SHOW() {

cout << "amount : " << num << endl;

cout << "amountref : " << num\_ref << endl;

}

void To\_Set(int a) {

this->num = a;

}

int &GetSecondtype\_plus1(int &a) {

int b = a+1;

int &c = b;

this->num = c;

return c;

}

void power(Second &obj, int &a) {

obj.num = a \* a;

}

void TO\_NULL(Second& obj) {

obj.num = 0;

}

~Second() {

cout << "2st elelement was deleted" << endl;

}

};

class Employee {

public:

int age;

string name;

int workexperience;

int &score = workexperience ;

Employee() { age = 0; name = ""; workexperience = 0; }

Employee(Employee& sample) {

age = sample.age;

#include <iostream>

using namespace std;

class First {

public :

int amount;

int& amountref = amount;

First(int amount, int& amountref) {

this->amount = amount;

this->amountref = amountref;

}

First() {

amount = 0;

}

First(First& dan) {

this->amount = dan.amount;

}

void TO\_SET(int a) {

this->amount = a;

}

void TO\_SHOW() {

cout << "amount = " << amount << endl;

cout << "amountref = " << amountref << endl;

}

int& TO\_GET\_AMOUNT(int amount) {

int a = amount;

return a;

}

void TO\_NULL(First & obj) {

obj.amount = 0;

}

void TO\_SQR(First &obj, int &a) {

obj.amount = a \* a;

}

~First() {

cout << "1st elelement was deleted" << endl;

}

};

class Second {

public:

int num;

int& num\_ref = num;

Second(int num) {

this->num = num;

}

Second() {

num = 0;

}

Second(Second& obj) {

this->num = obj.num;

}

void TO\_SHOW() {

cout << "amount : " << num << endl;

cout << "amountref : " << num\_ref << endl;

}

void To\_Set(int a) {

this->num = a;

}

int &GetSecondtype\_plus1(int &a) {

int b = a+1;

int &c = b;

this->num = c;

return c;

}

void power(Second &obj, int &a) {

obj.num = a \* a;

}

void TO\_NULL(Second& obj) {

obj.num = 0;

}

~Second() {

cout << "2st elelement was deleted" << endl;

}

};

class Employee {

public:

int age;

string name;

int workexperience;

int &score = workexperience ;

Employee() { age = 0; name = ""; workexperience = 0; }

Employee(Employee& sample) {

age = sample.age;

name = sample.name;

workexperience = sample.workexperience;

}

Employee(int age , string name, int workexpirience) {

this->age = age;

this->name = name;

this->workexperience = workexpirience;

}

void TO\_SHOW() {

cout << "information about Employee " << name<<endl;

cout << "age: " << age << endl;

cout << "Work experience: " << workexperience<<endl;

cout << "score :" << score<<endl<<endl;

}

int TO\_GET\_EXPERIANCE() { return workexperience; }

void TO\_SET\_EXPERIANCE(int a) { this-> workexperience = a; }

void UpPoints(Employee& Promoted, int up) { Promoted.workexperience = Promoted.workexperience + up; }

~Employee() {

cout << "3st elelement was deleted" << endl;

}

};

int main() {

int a = 5;

First first(a,a);

cout << "FIRST\n";

first.TO\_SHOW();

first.TO\_SET(6);

first.TO\_SHOW();

first.TO\_NULL(first);

first.TO\_SHOW();

cout << endl << endl;

cout << a <<endl << endl << "#####################################" << endl;

Second second(80);

cout << "SECOND\n";

second.GetSecondtype\_plus1(a);

second.TO\_SHOW();

second.power(second, a);

second.TO\_SHOW();

second.TO\_NULL(second);

second.TO\_SHOW();

Employee VASYA(5, "VASYA", 5);

cout << "THIRD\n";

VASYA.TO\_SHOW();

VASYA.TO\_SET\_EXPERIANCE(6);

VASYA.TO\_SHOW();

VASYA.UpPoints(VASYA, 20);

VASYA.TO\_SHOW();}

**Вывод:** в ходе лабораторной работы я научился использовать ссылочный тип в классах.