## Season 1: Struct

Define Struct Player, enter the number of players and each player information, then print the names of the players with the most goals

#include <math.h>

#include <iostream>

#include <vector>

using namespace std;

struct Player {

string ten;

float cao;

float canNang;

int tuoi;

int score;

float getBmi() {

return canNang / (cao \* cao);

}

};

int sum(vector<int> a) {

int res = 0;

for (int i = 0; i < a.size(); i++) {

res += a.at(i);

}

return res;

}

int main() {

vector<Player> a;

Player x;

int n;

cout << "Input number player: ";

cin >> n;

for (int i = 0; i < n; i++) {

printf("Input name player %d: ", i + 1);

cin.ignore();

getline(cin, x.ten);

cout << "Input the number of goals: ";

cin >> x.score;

a.push\_back(x);

}

int MAX = 0;

for (int i = 0; i < n; i++){

if (MAX < a[i].score) MAX = a[i].score;

}

for (int i = 0; i < n; i++) {

if (MAX == a[i].score) cout<< a[i].ten<< "\n";

}

return 0;

}

## Season 2: Pointer

An access example

#include <iostream>

using namespace std;

int main() {

int a = 10;

int &b = a;

b++;

cout << a << " " << b << endl;

int pi = 10;

int \*i = &pi;

(\*i)++;

int \*j = &(\*i);

cout << \*j;

return 0;

}

The output from this program is shown here:

11 11

11

## Season 3: Using command-line arguments

Using command line arguments to enter name and age

#include <iostream>

using namespace std;

int main(int argc, char\* argv[]) {

string name;

int age;

for (int i = 1; i < argc; ++i) {

if (string(argv[i]) == string("-n")) {

name = argv[i + 1];

} else if (string(argv[i]) == string("-a")) {

age = stoi(argv[i + 1]);

}

}

cout << "hello " << name << " " << 10 + age << " tuoi" << endl;

return 0;

}

Try executing this program, as shown here:

g++ bai2.cpp -o a

./a -n phat -a 10

The output from this program is shown here:

hello phat 20 tuoi

## Season 4: StringStream

An access example

#include <fstream>

#include <iostream>

#include <sstream>

#include <string>

using namespace std;

int main(int argc, char\* agrv[]) {

string s = "1, 2, 3, 4, 5, 6, 8 ";

istringstream iss(s);

int num, sum = 0;

string s1;

while (getline(iss, s1, ',')) {

num = stoi(s1);

sum += num;

}

cout << sum << endl;

ostringstream oss;

oss << "hello";

oss << " abc\n";

string ss = oss.str();

cout << ss << "\n";

return 0;

}

## Season 5: InFile, OutFile

Create a data.txt file written in the format (cc, dmm, 10) per line. Print to file result.txt is the sum of the 3rd numbers of each line

#include <fstream>

#include <iostream>

#include <sstream>

#include <string>

using namespace std;

int main(int argc, char\* agrv[]) {

ifstream inFile; inFile.open("/PHENIKAA/Ki4/LapTrinhCNangCao/14\_2\_2023/data.txt");

if (!inFile.is\_open()) { // inFile.fail()

cout << "unable to open file!\n";

exit(0);

}

string line;

int sum = 0;

while (getline(inFile, line)) {

istringstream iss(line);

string token, ss;

int num;

while (getline(iss, token, ',')) {

}

num = stoi(token);

sum += num;

}

inFile.close();

ofstream outFile; outFile.open("/PHENIKAA/Ki4/LapTrinhCNangCao/14\_2\_2023/result.txt");

outFile << "Sum = " << sum << endl;

outFile.close();

}

## Season 6: Class

Create a Dog class that has some properties and methods

#include <iostream>

#include <string>

using namespace std;

class Dog {

private:

string ownerName;

public:

string name;

int age;

const char sex = 'f';

float height;

float weight;

string breed;

void setOwner(string ownerName) {

this->ownerName = ownerName;

}

void sua() {

cout << "gau gau gau\n";

}

void displayInfo() {

cout << "hello " << name << " tuoi " << age << " sex " << sex << " height " << height << " weight " << weight << " breed " << breed << " Owner Name " << ownerName << endl;

}

void TangTuoi() {

age++;

}

Dog() {}

Dog(string name, int age, float height, float weight, string breed) : name(name), age(age), height(height), weight(weight), breed(breed) {

cout << "Mot con cho vua ra doi\n";

}

string getOwnerName() { return ownerName; }

friend void display(const Dog& d);

};

void display(const Dog& d) {

cout << d.ownerName << endl;

}

int main() {

Dog dog("meo", 1, 50, 5, "alaska");

dog.setOwner("phat");

dog.displayInfo();

display(dog);

}

Copy constructor