Exercises for Laboratory Work 11

The topic of the laboratory work 11: structures.

The aim of the laboratory work 11: to write a C++ program for solving a task using structures.

Write a C++ program for solving this task, using a structure with several members.

1. Given the information about the student group: student name, the student's date of birth, place of birth. Print the information about each student.

2. Given the information on the results of certification: Student name, names of five subjects and marks obtained in each subject. Print the names of students certified in all subjects.

3. Given the information on the results of certification, as in the previous exercise. Print the names of students who are not certified in any subject.

4. Given the information about the books received in the library: author's name, book title, publisher, year of publication, the date of receipt of the book to the library. Display information about the books published by the publishing house "Language", which are in the library for the past five years.

5. Given the results of the session information: student name, names of four subjects and grades received for each subject. Print all the information about the student.

6. Given information on employees of the company: name of the employee, date of birth, address, telephone number. Display information about employees, whose age does not exceed the average age of employees.

7. Given the information about the car: name of the owner, price, brand and license plate number. Find the number of cars of each brand.

8. Given the information about the books received in the library: author's name, book title, publisher, year of publication, the date of receipt of the book to the library. Display information about the books published by the publishing house "World", which are in the library for the past five years.

9. Given the information about the car: name of the owner, the cost, brand and license plate number. Find the number of cars of the same price.

10. Given the information on the results of certification: student name, names of five subjects and marks obtained in each subject. Print the names of students who are not certified in English.

11. Given the information on the results of certification, as in the previous exercise. Print the names of students who are not certified in Mathematics.

12. Given information on employees of the company: name of the employee, date of birth, address, telephone number. Display information about employees.

13. Given the information about the books received in the library: author's name, book title, publisher, year of publication, the date of receipt of the book to the library. Display information about the books published by the publishing house "Best", which are in the library for the past five years.

14. Given the information about cars: name of the owner, price, color, brand and license plate number. Find the number of cars of the same color.

15. Given the information about toys for children: name, price, color, size. Print the information about the cheapest toy.

16. Given the information about toys for children: name, price, color, size. Print the information about the most expensive toy.

17. Given the information about winter coats: brand, price, color, size. Print the information about the cheapest coat.

18. Given the information about coats for children: brand, price, color, size. Print the information about the most expensive coat.

19. Given the information about house: address, price, size, telethon number of owner. Print the information about the cheapest house.

20. Given the information about house: address, price, size, telethon number of owner. Print the information about the most expensive house.

11.4 Examples

Exercise 1.

Given the information about apples: weight, price, name. Print the information apples of name “Gold”.

Solution:

#include <iostream>

#include <string>

using namespace std;

struct product

{

int weight;

double price;

string name;

};

int main()

{

product apple[3];

int n;

for (n = 0; n < 3; ++n)

{ cout << "Enter name:" << endl;

cin >> apple[n].name;

cout << "Enter weight:" << endl;

cin >> apple[n].weight;

cout << "Enter price:" << endl;

cin >> apple[n].price;

}

for (n = 0; n < 3; ++n)

if (apple[n].name == "Gold")

{

cout << "Information:" << endl;

cout <<"Name:" << apple[n].name << endl;

cout << " Price:" <<apple[n].price << endl;

cout << " Weight:" << apple[n]. weight << endl;

}

return 0;

}

Run the program and you will see on the screen of monitor:

Enter name:

Gold

Enter weight:

200

Enter price:

32

Enter name:

Gala

Enter weight:

400

Enter price:

23

Enter name:

Diana

Enter weight:

356

Enter price:

32

Information:

Name:Gold

Price:32

Weight:200