

Практическая работа №12
Вариант №2 – Счет в банке.

Автор: Николаев-Аксенов И. С.

Группа: ИКБО-20-19

Код программы:

BankAccount.cpp:

```
1. #include <iostream>
2. #include <string>
3. #include <fstream>
4. #include <vector>
5. using namespace std;
6.
7. struct bank_account
8. {
9.     int num;
10.    string name;
11.    string surname;
12.    string second_name;
13.    string address;
14. };
15. vector<bank_account>bk;
16.
17. void print_data(bank_account a)
18. {
19.     cout << "Number : " << a.num << "\nName : " << a.name << "\nSurname : " << a.surname
    << "\nSecond Name : " << a.second_name << "\nAddress : " << a.address << endl;
20.     cout << "_____ \n";
21. }
22.
23. void write_data_to_file()
24. {
25.     ofstream ou("bank.txt");
26.
27.     if (ou.is_open())
28.     {
29.         for (int i = 0; i < bk.size(); i++)
30.         {
31.             bank_account temp = bk[i];
32.             ou << temp.num << " " << temp.name << " " << temp.surname << " " <<
temp.second_name << " " << temp.address << "\n";
33.         }
34.     }
35.     ou.close();
36. }
37.
38. void write_data_to_binary()
39. {
40.     bank_account temp;
41.     ofstream out("binary.txt", ostream::binary);
42.     for (int i = 0; i < bk.size(); ++i)
43.         out.write((char*)&bk.at(i), sizeof(bank_account));
44.
45.     out.close();
46. }
47.
48. void read_data_from_binary_file()
49. {
50.     ifstream fin("binary.txt", istream::binary);
51.     bank_account temp;
52.     for (int i = 0; i < bk.size(); i++)
```

```

53.         fin.read((char*)&bk.at(i), sizeof(bank_account));
54.
55.     fin.close();
56. }
57.
58. void print_all_data()
59. {
60.     for (int i = 0; i < bk.size(); i++)
61.         print_data(bk[i]);
62. }
63.
64. void find()
65. {
66.     int a;
67.     cout << "Input number of account, which you want to find: ";
68.     cin >> a;
69.     cout << endl;
70.     for (int i = 0; i < bk.size(); i++)
71.     {
72.         if (bk[i].num == a)
73.             print_data(bk[i]);
74.     }
75. }
76.
77. void change()
78. {
79.     int a;
80.     string b;
81.     cout << "Input number of account, which you want to change : ";
82.     cin >> a;
83.     cout << endl;
84.
85.     cout << "Input new name : ";
86.     cin >> b;
87.     cout << endl;
88.
89.     read_data_from_binary_file();
90.     for (int i = 0; i < bk.size(); i++)
91.     {
92.         if (bk[i].num == a)
93.             bk[i].name = b;
94.     }
95.     write_data_to_binary();
96. }
97.
98. void del()
99. {
100.    int a;
101.    cout << "Input number of account, which you want to delete : ";
102.    cin >> a;
103.    cout << endl;
104.    read_data_from_binary_file();
105.
106.    for (int i = 0; i < bk.size(); i++){
107.        if (bk[i].num == a)
108.            bk.erase(bk.begin() + i);
109.    }
110.    write_data_to_binary();
111. }
112.
113. int main()
114. {
115.     bank_account first{1234567, "Ivan", "Ivanov", "Ivanov", "Perm"};
116.     bk.push_back(first);
117.
118.     bank_account second{7654321, "Alex", "Alexandrov", "Sergeevich", "Moscow"};
119.     bk.push_back(second);
120.
121.     write_data_to_file();

```

```
122.     print_all_data();
123.     cout << "_____ \n";
124.
125.     write_data_to_binary();
126.     read_data_from_binary_file();
127.     find();
128.     cout << "_____ \n";
129.
130.     change();
131.     print_all_data();
132.     cout << "_____ \n";
133.
134.     del();
135.     print_all_data();
136. }
```

Результат выполнения программы:

```
Number : 1234567
Name : Ivan
Surname : Ivanov
Second Name : Ivanov
Address : Perm

Number : 7654321
Name : Alex
Surname : Alexandrov
Second Name : Sergeevich
Address : Moscow

Input number of account, which you want to find: 1234567

Number : 1234567
Name : Ivan
Surname : Ivanov
Second Name : Ivanov
Address : Perm

Input number of account, which you want to change : 1234567

Input new name : Petr

Number : 1234567
Name : Petr
Surname : Ivanov
Second Name : Ivanov
Address : Perm

Number : 7654321
Name : Alex
Surname : Alexandrov
Second Name : Sergeevich
Address : Moscow

Input number of account, which you want to delete : 7654321

Number : 1234567
Name : Petr
Surname : Ivanov
Second Name : Ivanov
Address : Perm
```