**address list design Experiment Report**

Experiment Date:2021.10.15

Class: 计科201

Student ID 1：20401010108 Name 1：黄荣帅

Student ID 2：20401010107 Name 2：叶宇轩

Student ID 3：20401010105 Name 3：王子昂

1. **Experimental purpose**

1、Use the basic operations to implement the specific operations for the linear table;

2、Master the application of file operations;

3、Improve the understanding of the data structure of linked storage structure, and gradually cultivate the programming ability to solve practical problems.

1. **Experimental environment**

A computer with Visual C ++ 6.0 / CFree.

This experiment has 4 class hours in all.

1. **Experimental content**

Design a classmate's address list, requested as follows:

 Each student in the address list contains the following information: student id、name、telephone number. If you need more fields, please add them yourself.

 The program has a main menu containing the following functions:

（1） Add a record: Add a student record from the input.

（2） Delete a record: Delete a student record according to the student id from the input.

（3） Output all records: Display all the records in the address list.

（4） Search by name: Input the student name and then output the whole information of the student.

（5） Save records: Save all the records in the address list to a certain file.

（6） Clear records: Delete all the records in the address list and then delete the file.

（7） Quit

hint：

 When the program starts, it should be determined whether there is a record file. If the file exists, read each record from it to the list.

 After the user selects and completes a function of the main menu, the program should return to the main menu.

 When a record is added, it should be inserted into the tail of the list.

 If a record does not exist when performing delete or and search operation, the program should output some information to the user.

 You do not need to write files when adding records or deleting records.

 When you want to save a record you’d better overwrite the file. (Or delete the original file first, and then save all the records)

 Each module is written in the form of a function, called by the main function.

optional：

 Add a sorting function in the main menu, the sorting result should be in an ascending order according to the student number. Sorting methods can be done by bubble sort or insert sort.

1. **Important data structures**

线性表

1. **Implementation analysis**

通过文件的保存和读取将学生个人信息读取到线性表中，通过结构体和函数的运用进行学生个人信息的相关操作。

1. **Debugging problem analysis**

刚开始未用文件读取与存入，发现数据输入完经过操作后就消失了，后改用文件进行读取与保存。

1. **Summary**

通过通讯录的设计逐渐掌握了结构体和线性表相关操作。

1. **Crew Division**

|  |  |  |
| --- | --- | --- |
| **Group division** | | |
| **Member name** | **Work done** | **Completion situation** |
| **黄荣帅** | **学生结构体的设计，学生信息的添加与删除** | **完成** |
| **叶宇轩** | **学生信息搜索与输出** | **完成** |
| **王子昂** | **学生信息的清除与保存** | **完成** |