

CS 1431 Assignment 5

Due on Fri., Mar. 23, 2001

Each student is required to do this assignment **individually**. Print or write down all of your source files, computer outputs and your inputs. Each page of your answer sheets should contain the following information clearly:

Name, Student Number, Assignment Number, Course Number (CS 1431)

All the answer sheets of your assignment should be stapled together.

Hand in the following:

- Paper work: Answers of the problems including source files of all the programs you used and the inputs and outputs of these problems. Also indicate the compile you used.
- A disk containing the files of programs: The source files and **executable** files which solve the problems.

Place these items in a 9" × 11" envelope, with the following information clearly marked on the outside of the envelope:

Name, Student Number, Course Number (CS 1431) and your email address.

Assignments which do not meet above rules will not be marked.

Deposit (submit) your assignment in Classroom on due date. The grade of the assignment will depend on:

Specification and documentation: 15 %

Format and readability: 15 %

Correctness: 70 %

Problem 1.

Develop a program that creates a binary file. The binary file records information about the students using the following structure:

```
struct mark
{
    char sub[8];
    float grade;
};
struct people
{ int id;
  char name[30];
  struct mark s[3];
} student;
```

The program will ask the user to input the information about a student: ID, name, names of three courses and the grades of these courses, and record the information in a binary file `marks.d`. Run your program and record information of at least 5 students.

Problem 2.

Develop a program that reads the binary file created in Problem 1 and outputs the student's name and ID, who has at least one failure course (grade < 50).

Problem 3.

Suppose the following is a text file which records the room number and the name of the professor using this room. You can find the file in course website.

```
1          R.Wei
2          X.Li
3      M.Benson
4      M.Hasegawa
5      F.Alliaire
6          R.Ahmed
```

Write a program which reads a name of professor from the keyboard and outputs the neighbours of that professor. For example, the following are the inputs and outputs. For simplicity, the program may only search one name each time.

```
Enter a name to search: R.Wei
```

```
The neighbours of R.Wei are:
X.Li
```

```
Enter a name to search: M.Benson
```

```
The neighbours of M.Benson are:
X.Li
M.Hasegawa
```

```
Enter a name to search: R.Ahmed
```

```
The neighbours of R.Ahmed are:
F.Alliaire
```