

CS 1431 Assignment 6

Due on Wed., Apr 4, 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 compiler 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 is able to answer some simple questions. When the program is run, computer first outputs: **Please ask a question: (Bye to stop)** and waits for the question. After the user types in a question, it will give some answer. The following are some examples of inputs and outputs.

```
Please ask a question: (Bye to stop)
Are you a student of my class?
Yes, I am a student of your class .
```

```
Please ask a question: (Bye to stop)
Do you want to learn computer with me?
Yes, I want to learn computer with you .
```

Please ask a question: (Bye to stop)
Could you tell me what is your name?
Sure.

Please ask a question: (Bye to stop)
What?
Sorry, I don't know how to answer this question.

Please ask a question: (Bye to stop)
Bye

(**hint:** Try to use string tokens. For a simple question, you need to substitute me by you, your by my, ..., etc. For other questions, you might simply answer **Sorry, I don't know how to answer this question.**)

Problem 2.

Suppose a sequence $s_1, s_2, \dots, s_n, \dots$ is defined as follows:

$$s_1 = 1, s_2 = 2$$

For $n \geq 3$,

$$s_n = s_{n-1} + 2 \times s_{n-2}.$$

Write a recursive function to find the value of s_n , where n is inputted from the keyboard.