

**DCO2310**

**Continuous Assessment**

## **1. Continuous Assessment (30% of total score) 2/2/2001**

### **1.1. Schedule**

*Quiz (15%): In week 8 during tutorial, Open book (Cover Chapters 1 to 6, last twenty minutes, questions are random.)*

*Assignment (10%): on/before week 12 to your tutor*

*Role Play (5%): from Week 6 to Week 12 during tutorial*

+ You should choose Assignment A or B but not both.

In your submission either assignment A or B, please state that

I declare this is my original work and I did not copy from my classmates.

## **2. Assignment**

### **2.1. Assignment A**

Assume that you have joined a company as a system administrator. Your boss requires you to transfer a large file from Hong Kong to Tibet. The line quality is not very good and speed is pretty low. You are asked to write a simple C program to compress this ASCII file (Don't use ZIP/UNZIP, as the purpose of this program is to train you how to compress data) to expedite file transfer.

1. Write two programs, namely compression and decompression.
2. Send the compression program to the remote site so that they can use it after having received the compressed program.

If you choose this assignment, you should submit to your tutor with a

- Program listing on the method you chosen together with a brief description stating your method and the executable program. The document to be compressed is just an ASCII file that is under <http://personal.cityu.edu/~dcykcho/dco2310/assign1.txt>.
- Test result includes the original program size, compressed program size.

+ *A 3 1/2 disk is used to hold the source program, and executable programs. The disk will be returned to you after marking.*

+ Note that the number of pages for assignment A should not exceed 5 including a cover page about your name, tutorial group and student ID with the declaration statement.

The program should use this standard format to compress a file (for method 1)

*compress infile outfile*

The standard format to decompress a file is:

*decomp infile outfile*

- *infile* : name of input ASCII file

- outfile : name of compressed file

Your grade is based on your compression rate and clear explanation to demonstrate your understanding. If the compression rate is over 50%, you will get a B+ or above. If your compression rate is only 5%, you might get a C-. 5% means that if the original file is 100 bytes, the file becomes 95 bytes after compression.

I do not expect you to write the program from scratch. You can use CUT and PASTE technique to select the program segment downloaded from the Internet.

## 2.2. Assignment B

Assume that you joined a company to look after the whole company network and require to design a small scale network or an Internet based business to enhance its operation or promote the business. Write a proposal to show to the top management that your idea can save money, increase efficiency or increase sales volume.

You could design the network using one of the following communications media offered by Pacific Century Cyber Works

- Circuit switched network through Public Switched Telephone Network (PSTN, voice network) (It charges you at 120 HKD per month and further assume that the initial set up cost is 600 HKD)
- Digital Leased Line (ISDN) (128K bps) (it charges you at about 3200 HKD per month and initial cost is 600 HKD.)
- The Internet (Some of the service are free if you have already got a telephone line. However, you still have to pay the P. Net and is charged roughly 1.8 HKD per hour.)
- Frame Relay (Digital switched line)
- Wireless network such as WAP or 2.5G

In your proposal, you have to choose one transmission medium and include the following:

- state the rationale behind of selecting the communication medium (why you choose this, for what reason. Please note that it is related to your business. There is no fixed solution.)
- list one related communications component within your design network and describe the role, characteristics etc. (For example, when you choose wireless network, you need to install the WAP gateway. State the importance of this component.)
- write down the estimated initial cost of setting up this network excluding the computers in the headquarters. You should include the cost required to set up the workstations or servers. The recurring cost per year for your network and deduce the years of breakdown. (With this network, it can help your business to increase the sales volume by 20% (or 200000 per year) and the cost of setting up is 100000 with a maintenance fee of 5000 per month, you can determine the breakdown.)
- list the risk factors and set up a contingency plan in case the network is down. (You should list what will cause the network to suspend the service. It also means what you should do in the contingency plan to keep the operations running.)
- state the business effectiveness of using your proposed method instead of using FAX, courier or voice system. (How effective is your proposed system when compared to FAX or voice system.)

Your assignment should be limited to five pages including the cover page.

In your assignment, you should ask yourself a few questions before you can start to write a **proposal**:

1. Who is the targetted user? (not me, as you are now employed.)
2. What is the motivation of writing such a proposal? (to show to your top management that they are lucky to recruit you to save money, earn money or ....)

3. What is the nature of your company? (If it is a small company with 10 employees, it might not justify to have a large network.)
4. How long is the breakdown of your proposal? (You might spend 200,000 and takes 10 years to recover, which is not effective.)
5. Your conclusion (Worth or not worth)

+ This assignment is in proposal format, which means that it is a formal format. If you can use for your job interview after graduation, this is a Grade A proposal.

+ *For Assignment A, the score is based on your programming capability and contribution. You might require to explain your program and the way of doing as part of your assessment to ascertain this is your own work. For Assignment B, you need to justify your proposal and your score is based on what benefit you can derive from your proposal. No presentation is required.*

### 2.3. Role Play

It is easier than presentation. The purpose is to enable you to understand the in-depth knowledge on the topic chosen by you. Form a team of three to four classmates and choose an area, protocol etc. related to data communication. You then use **two to three minutes** to show to your classmates. There are two marks (Group mark up to 2) and (Individual mark up to 3)

Group mark is given to the whole team based on the overall performance, while individual mark is based on individual's performance. In this case, I will ask individual students a question to demonstrate whether he/she understood or not.

For example, you can choose a topic on router. One student acts as the router, the other two students may act as two networks. The network send a packet to the router which then on-pass to the other network. Or you can act as a modem, one student acts the analogue signal, while other acts the digital signal. Of course, you can bring pictures to represent the signals.

#### 2.3.1. Schedule of role play

- Decide the team members in week 2
- Choose the topic in week 4
- List the schedule in week 5
- Start to perform from Week 6 (Please note that each tutorial can allow up to two teams per week only.)