

# 國立中山大學九十二學年度碩士班招生考試試題

科目：計算機概論（資訊管理學系碩士班 甲、乙組）

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## 一、單選題：(30%)

1.  $2^{100}$  除以 10 的餘數為  
A、0  
B、2  
C、4  
D、6  
E、8
2. 假設你有一台電腦其螢幕是  $800 \times 600$ ，且色彩設成 32 位元高彩。你有另一台黑白螢幕 PDA，其解析度是  $400 \times 200$ ，請問前者儲存螢幕資料所需的記憶體是後者的幾倍？  
A、6 倍  
B、48 倍  
C、96 倍  
D、192 倍  
E、以上皆非
3. BIG-5 的一個字是由兩個位元組所組成，其編碼原則是第一位元組的值在 16 進制的 A0~FE 之間，第二位元組在 40~7E 和 A1~FE 之間。請問，其最多可容納幾個字？  
A、40,227  
B、39,816  
C、24,964  
D、20,480  
E、以上皆非
4. 考慮以下的程式片段：  

```
int s=0;
for (k=1; k<=n, k++) {
    for (i=1; i<=n-k+1; i++) {
        j = i+k-1;
        A[i,j]=0;
        s++;
    }
}
```

請問若  $n=100$ ， $s=?$   
A、10,000  
B、5,000  
C、4,950  
D、5,050  
E、以上皆非

5. 在物件導向觀念裡，一個 subclass  $C$  裡可以定義一個跟 superclass  $S$  裡名稱一樣的 function  $f()$ 。假設此時有一個 object  $o$ ，定義如下：

$C\ o = \text{new } C();$

$S\ p = o;$

此時  $p.f()$  和  $o.f()$  所指的是同一個 function。這種觀念稱為

- A、encapsulation  
B、overloading  
C、inheritance  
D、polymorphism  
E、以上皆非
- 6-8 題：假設有四對夫婦出遊，每對夫婦均帶一位小孩同行。男生甲、乙、丙、丁，女生 A、B、C、D，小孩  $\alpha$ 、 $\beta$ 、 $\gamma$ 、 $\theta$ 。現在已知丁的太太是 B，甲的小孩是  $\alpha$ ，乙確定不是  $\beta$  的父親，且 A 的小孩是  $\theta$ ，D 的小孩是  $\beta$ 。

6. 請問甲的太太是？

A. A  
B. B  
C. C  
D. D

7. 請問乙的太太是？

A. A  
B. B  
C. C  
D. D

8. 請問丙的太太是？

A. A  
B. B  
C. C  
D. D

9. Which of the following Operating Systems requires more than one CPU?

(A) Real-time, (B) Multiprogramming, (C) Time-sharing, (D) None of the above.

10. The execution time of J1, J2, and J3 is 24, 3, and 3, respectively. Assume the arrival order of these three jobs is J1, J2, and J3 and their arrival time is the same. What is the average turnaround time if the First-come-first-served scheduling policy is used?

(A) 13, (B) 25, (C) 27, (D) None of the above.

11. A high-speed network is capable of transmitting 100Mbits per second. Consider a video file of 300 Gbytes. How long does it take to transmit the file without considering the overhead?

- (A) 3000 seconds, (B) 2400 minutes, (C) 400 minutes, (D) None of the above.
12. A memory cache of 256K bytes is added to a system with a main memory of 512 Mbytes. The price for the main memory is NT\$ 150 per 32Mbytes, while the price for the cache is NT\$ 4000 per 1Mbytes. How much money (in NT\$) do you pay for the total memory (including the main memory and the cache) in the system?  
(A) 6400, (B) 2400, (C) 3400, (D) None of the above.
13. Which of the following statements is false?  
(A) DMA needs a controller to access the PCI bus. (B) Semaphore is used to synchronize the resource access between processes. (C) I/O devices use the routing mechanism to signal the CPU upon the occurrence of an event. (D) None of above.
14. Which of the following is not a major function of an operating system kernel?  
(A) CPU scheduling, (B) Mutual exclusion, (C) Memory allocation, (D) Program compilation.
15. Which of the following statements about HTTP is false?  
(A) HTTP is a session-layer protocol. (B) HTTP uses progressive downloading in data streaming. (C) HTTP downloads data losslessly since it relies on TCP to transmit packets. (D) HTTP is suitable for long duration of streaming.

二、複選題：(30%)

1. 以下何者可以用來測量一 CPU 的效能？  
A. FLOPS  
B. MIPS  
C. MB  
D. USB  
E. SCSI
2. 考慮以下的 IE 瀏覽器介面，請問何種圖形元件沒有出現在該畫面？



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National Sun Yat-sen University Library

- A. Text field  
B. Pull-down list  
C. Menu bar

- D. Check box
  - E. button
3. 以下有關 PDF 文件的敘述何者為非？
- A. 相對於 WORD，其檔案較小
  - B. 在任何平台上的顯示結果是相同的
  - C. 文件裡的文字必然可以搜尋
  - D. 可以加密、限制列印
  - E. 是 HP 雷射印表機的專屬格式
4. 請由檔名來辨識以下哪些檔案為圖形檔
- A. test1.tif
  - B. test2.wmv
  - C. test3.jpg
  - D. test4.wav
  - E. test5.bmp
5. Which of the following descriptions about web services are incorrect?
- A. Web services use html as a vehicle for issuing requests and receiving messages.
  - B. Web services use HTTP as the communication protocol.
  - C. Web services intend to ease business to business services.
  - D. Web services intend to enable automatic business to customer services.
  - E. Web services always involve databases.
6. Which of the following protocols are not in the category of MAC (Medium Access Control) sublayer?
- (A) Token Ring, (B) IEEE 802.11, (C) SSL, (D) Ethernet, (E) HTTP.
7. Which of the following statements about TCP and UDP are false?
- (A) They both are transport-layer protocols. (B) TCP relies on the IP to transmit packets while UDP relies on RTP to transmit. (C) They both are connection-oriented protocols. (D) UDP re-transmits packets while TCP does not upon a transmission error.
8. Which of the following components are not inside a CPU?
- (A) ALU, (B) PCB, (C) Disk, (D) Registers, (E) Decoder.
9. Which of the following mechanisms are feasible for the CPU to communicate with I/O devices?
- (A) Interrupt, (B) Polling, (C) Spooling, (D) Mailbox.
10. Which of the following media are used in transmitting data?
- (A) Optical Fiber, (B) Twisted-Pair Wire, (C) Radio, (D) Silk, (E) Infra-Red Beam.

## 三、問答題

1. (15%) 考慮以下的演算法 INSERTION-SORT() 將一個陣列 A 做排序。假設 A 有  $n$  個元素 (elements)，請問此演算法的第 6 行最少會被執行幾次？最多會被執行幾次？平均會被執行幾次？請寫出具體數字，不可以只寫 order。

行數	INSERTION-SORT(A)
1	For $j \leftarrow 2$ to length[A]
2	$key \leftarrow A[j]$
3	/* insert $A[j]$ into the sorted sequence $A[1..j-1]$ */
4	$i \leftarrow j-1$
5	While $i > 0$ and $A[i] > key$
6	$A[i+1] \leftarrow A[i]$
7	$i \leftarrow i-1$
8	$A[i+1] \leftarrow key$

2. (10%) 試著提出另一種排序的方法，這個方法比 INSERTION-SORT 的平均執行效率高。請描述此方法並計算其時間複雜度。
3. (15%) According to the statistics, 30% of the network users logon to the Internet for 10 minutes daily. 25% of the users logon for 20 minutes. 15% of the users logon for 30 minutes. 30% of the users logon for 40 minutes. Please compute the average access time for the Internet in the given population. In addition, what is the variance of the access time?

1. 資訊科技引進組織後，常常會對組織結構產生影響。有些學者認為這種影響是必定存在的，但有些學者則認為不一定、且影響結果的方向對各組織也都不相同。就你個人的看法，以組織層級的扁平化為例，你認為資訊科技引進後，會不會造成組織層級的扁平化：(1)會、(2)不會、(3)不一定。請詳述你的理由與背後的理論思考。(25%)
2. 簡答題
  - (1) 何謂虛擬式組織(virtual organization or corporation)，其主要特性與優點為何？(8%)
  - (2) 何謂電子市集(e-marketplace)，其有那些主要分類？(8%)
  - (3) 使用者抗拒資訊系統主要的原因有那些？(9%)
3. Study the following data requirements for ABC Inc. and produce an entity relationship diagram for this application. In your entity relationship diagram, you also need to specify cardinalities on relationship types. If necessary, you can make assumptions to complete the data requirements. All assumptions must be reasonable and clearly documented. (25%)

*ABC Inc. is an engineering firm with approximately 500 employees. A database is required to keep track of all employees, their skills, projects assigned, and departments worked in. Every employee has a unique employee number assigned by the firm, required to store his or her name and date of birth. If an employee is currently married to another employee of ABC Inc., the date of marriage and who is married to whom must be stored; however, no record of marriage is required if an employee's spouse is not an employee of ABC Inc. Each employee is given a job title (for example, engineer, secretary, and so on). An employee does only one type of job at any given time, and we only need to retain information for an employee's current job.*

*There are 11 different departments, each with a unique name. An employee can report to only one department. Each department has a phone number.*

*To procure various kinds of equipment, each department deals with many vendors. A vendor typically supplies equipment to many departments. We are required to store the name and address of each vendor.*

*Many employees can work on a project. An employee can work on many projects. An employee can have many skills, but she or he may use only a given set of skills on a particular project. Employees use each skill that they possess in at least one project. Each skill is assigned a number, and we must store a short description of each skill. Projects are distinguished by project numbers, and we must store the estimated cost of each project.*

4. If a company adopts the "product innovation" strategy as her core competence, what are the major design focuses of her Customer Relationship Management (CRM) system in order to support this strategy? What kinds of data or information need to be collected by this target CRM system? Please also propose a system architecture appropriate for this target CRM system. (25%)

(一)、單選題：(每題 5 分)

- 四位女生和三位男生排成一列，有多少種排列方法：(a) 5040 (b) 144 (c) 128 (d) 35 (e) 12
- 四位女生和三位男生，以代號 G 代表女生，代號 B 代表男生，以代號排成一列，有多少種排列方法：(a) 5040 (b) 144 (c) 128 (d) 35 (e) 12
- 如果虛無假設 ( $H_0$ ) 在統計檢定運算後被推翻，則下列何者為真？(a) 可能會有型一錯誤 (type I error) (b) 可能會有型二錯誤 (type II error) (c) 不可能發生型一錯誤 (d) 縮小棄絕域 (critical region)，即可增加  $p$ -value (e) 資訊不足，無法判斷
- 在某次選舉中有三位候選人（分別以甲、乙、丙代表之），某民意調查單位於選舉前兩週公佈其民意調查結果，有效樣本為 982 人，在顯著水準 5% 的情況下，誤差範圍是 3.5%，甲、乙、丙的支持率分別是 33%、30%、11%。就統計的顯著性而言，以下的解讀何者較為合理？(a) 甲領先乙 (b) 甲和乙沒有差距 (c) 甲、乙、丙之間沒有差距 (d) 丙應該放棄 (e) 資料不足，難以判斷
- 令  $X_1, X_2, X_3$  為下列機率分佈的隨機樣本，則何者為真？

$$f(x) = \begin{cases} \left(\frac{1}{\theta}\right)e^{-x/\theta} & x > 0 \\ 0 & \text{elsewhere} \end{cases}$$

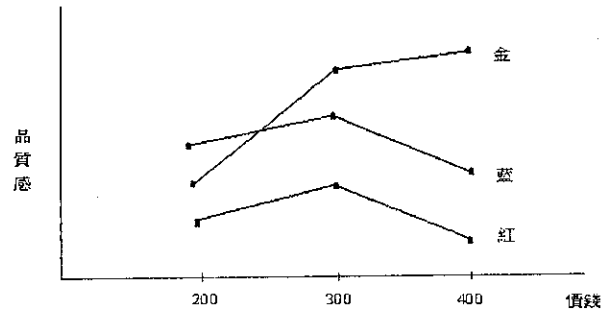
- 此機率分佈之 MLE 為  $(X_1 + X_2 + X_3)/3$ ，而且是不偏估計 (unbiased estimator)
  - 此機率分佈之 MLE 為  $(X_1 + X_2 + X_3)/3$ ，而且是偏誤的估計 (biased estimator)
  - 此機率分佈之 MLE 為  $\min(X_1, X_2, X_3)$ ，而且是不偏估計
  - 此機率分佈之 MLE 為  $\min(X_1, X_2, X_3)$ ，而且是偏誤的估計
  - 此機率分佈沒有 MLE
- 今年第一季 N 品牌手機銷售之市場佔有率為 38%，分析人員認為第二季的表現更好，市場佔有率應該上升。若是根據此假設做抽樣檢定，應該表示為
    - $H_0: P = 38\%$ ，採用 t 檢定 (b)  $H_0: \bar{X} = 38\%$ ，採用 t 檢定  
 $H_1: P < 38\%$  (c)  $H_0: \bar{X} < 38\%$
    - $H_0: P = 38\%$ ，採用 Z 檢定 (d)  $H_0: \bar{X} = 38\%$ ，採用 Z 檢定  
 $H_1: P > 38\%$  (e)  $H_1: \bar{X} > 38\%$
    - $H_0: \mu = 38\%$ ，採用 t 檢定  
 $H_1: \mu < 38\%$
  - 某網路書局定期檢視其行銷策略，最近一次的討論中，王經理根據公司內部的銷售資料庫，提出以下各年齡族群購買書籍種類的數量：

年 齡 族 群		書籍種類			
		科學與技術	財經與管理	語言與學習	小說與散文
15~24		57	12	270	138
23~35		169	356	127	267
36~50		60	123	24	54

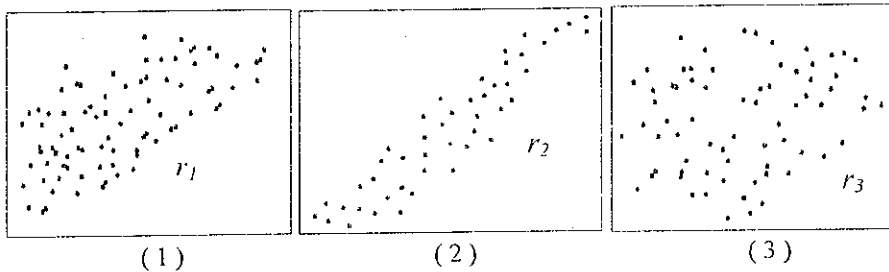
若王經理想要利用以上數據來檢測「年齡族群」與「書籍種類」是否互相獨立，需要使用哪一種假設檢定之技術？(a) Z 檢定 (b) t 檢定 (c) F 檢定 (d)  $\chi^2$  檢定 (e) ANOVA

- 某研究機構對國內技術創業的創業者做調查，主題是「創業最重要的因素」。調查結果認為「管理團隊」最重要者佔 30%，「對產業的瞭解」佔 20%，「人脈關係」佔 25%，「財務健全」佔 35%，以及其他 5%。某研究生根據以上結果，隨機訪問南部 6 家在最近兩年內創業之技術創業者，則沒有任何一位創業者認為「人脈關係」最重要之機率為 (a) 0.75 (b) 0.5 (c) 0.36 (d) 0.25 (e) 0.18

9. 某糖果公司之行銷部門測試不同顏色的包裝和標價是否會影響消費者的品質感，實施一個  $3 \times 3$  的因子設計之實驗，結果顯示於下圖，何者為真？(a) 紅色包裝的品質感最差 (b) 金色包裝的品質感最好 (c) 不同的標價對於品質感有影響 (d) 包裝與標價對於品質感沒有交互作用 (e) 以上皆非



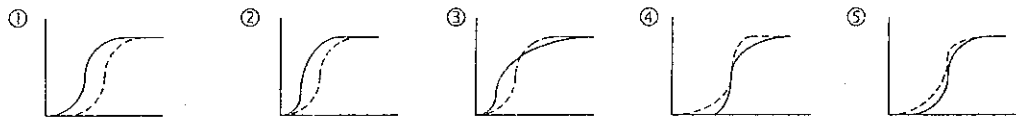
10. 下列三個圖中，縱軸與橫軸的變數間的相关係數可以  $r_1$ 、 $r_2$ 、 $r_3$  表示，何者為真？(a)  $r_1 > r_2 > r_3$  (b)  $r_3 > r_1 > r_2$  (c)  $r_3 > r_2 > r_1$  (d)  $r_2 > r_3 > r_1$  (e)  $r_2 > r_1 > r_3$



(二)、計算題

1. Some scientists discover a new probability distribution to describe a number of seemingly random events instead of employing the normal probability distribution. The shape of the new distribution is skewed to one side or the other. It is broader and more gently sloping on the skewed side than the normal curve. (15 分)

- (a) Draw the new curve and the normal curve on the same graph with similar quantities. You may arbitrarily choose the skewed side for the new curve.  
 (b) Which one of the following figures best describes the cumulative distribution functions of the new curve (solid-line) and the normal curve (dotted-line)?



- (c) If the new curve is employed to model the number of natural disaster occurrences, then  
 (1) To what side is the curve skewed?  
 (2) Explain why insurance companies that rely on normal models to pay for the claims due to natural disaster run greater risks than expected if models based on the new curve are more appropriate.  
 (3) Do you think the central limit theorem still applies for the sample mean if the population distribution resembles the new curve?



2. Suppose that you are considering two investments. It is known that the expected rate of return for investment I is 10% with standard deviation 5%, and the expected rate of return for investment II is 16% with standard deviation 12%. (20 分)
- (a) Is it suitable to choose one of the investments solely based on the expected rate of return? Why?
- (b) Suppose that both rates of return are independently and normally distributed. We can calculate the probability that rate of return for investment I is larger than that for investment II, on which the choice is based. Which investment should be chosen in this case?
- (c) Discuss whether criterion in (b) is really different from that in (a).
- (d) If you set the goal for the rate of return to be 15%, think of an appropriate criterion to judge which investment is better and make the choice accordingly.
3. The Index of Economic Freedom is an annual index rating the level of government participation in national economics. "Economic freedom" is equated with low levels of government activity, differentiating between free and controlled markets. To observe the trend from 1995 to 2000, we randomly select 9 countries and obtain the data as follows (maximum score is 10): (15 分)

Index	Bahamas	Czech	Egypt	Honduras	Jordan	New Zealand	Peru	S. Korea	Thailand
1995	6.2	5.8	5.8	6.7	6.1	8.6	6.2	6.4	7.1
2000	7.1	7.0	6.7	6.3	7.3	8.2	6.9	7.0	6.6

- (a) Construct box plots for both index data. Compare the results.
- (b) Use t test to determine whether the mean economic freedom index has increased from 1995 to 2000. Set  $\alpha = 0.05$
- (c) We can also perform an ANOVA test to determine whether the mean economic freedom indices are different between 1995 and 2000. What experimental design is this? Calculate the variation reduction amount due to this particular design.

Degree of freedom	8	9	16	17	18
$t_{0.05}$	1.86	1.833	1.746	1.740	1.734
$t_{0.025}$	2.306	2.228	2.120	2.110	2.093

# 國立中山大學九十二學年度碩士班招生考試試題

科目：離散數學 (資訊管理學系碩士班乙組)

共 / 頁第 頁

- 請回答下列問題
  - (5%) Domain 為  $\{1, 2\}$ , Co-Domain 為  $\{a, b, c\}$  的 function 共有幾個?
  - (5%) 請將它們全部寫出來。
- 請回答下列問題
  - (5%) 在邏輯裡, What is "Deduction Theorem"?
  - (5%) 請用 Deduction Theorem 方法證明  $(P \rightarrow Q) \wedge (\neg Q) \wedge P$  is inconsistent。
- 請回答下列問題
  - (5%) 什麼是 Context-Free Language?
  - (5%) 為何下列 Grammar 是 Ambiguous?  $E \rightarrow E+E \mid E^*E \mid (E) \mid a$
- 請回答下列問題
  - (5%) 請將 1 到 9 的正整數填入下列 9 個空格內使得其每一 column 和每一 row 的加總值都相等。
  - (5%) 請說明你解答本問題的方法。

註: ( $\rightarrow$  表示 imply,  $\wedge$  表示 and,  $\neg$  表示 not)


- 請回答下列問題
  - (5%) 什麼是八后問題?
  - (5%) 請劃出一個八后問題的解答。
- 一付撲克牌發 5 張
  - (5%) 拿到 0 張老 K 的概率是多少?
  - (5%) 拿到 1 張老 K 的概率是多少?
- 三對夫婦在旅途中過一條河, 他們找到一條可以乘載兩人的小船。由於先生們都非常善妒, 因此不允許太太在沒有他們陪伴之下與其它男人同在一起。
  - (8%) 請將此一問題繪成圖形 (Graph), 並說明如何從圖中找出可以解決問題的路徑;
  - (7%) 試著證明若夫婦共有四對時, 本問題無解。
- (10%) A tree has two vertices of degree 2, one vertex of degree 3, and three vertices of degree 4. How many vertices of degree one does it have? Explain how do you calculate the answer?
- (15%) Let  $N$  be the set of all natural numbers. For each of the following, determine whether  $*$  is an associative operation:
  - $a * b = \max(a, b)$
  - $a * b = \min(a, 2)$
  - $a * b = a + b + 3$
  - $a * b = a + 2b$
  - $a * b = \begin{cases} \min(a, b) & \text{if } \min(a, b) < 10 \\ \max(a, b) & \text{if } \max(a, b) \geq 10 \end{cases}$

1. (15%) The scientists of Space Lab want to sort their remote sensing data to reconstruct the 3-D images of the surface of Mars. They have one million 64-bit integers to sort.
  - a) If they use quicksort, estimate the number of key value comparisons performed. (*Hint*: consider the average time complexity of quicksort.)
  - b) If they treat these integers as four-digit, radix- $2^{16}$  numbers and use straight radix sort based on the radix- $2^{16}$  notation, how many sorting passes are required to do the sorting? (A radix- $r$  number means that each digit represents  $r$  values. For example, decimal numbers are radix-10 because each digit has values 0-9. Similarly, binary numbers are radix-2 because each digit has values 0 or 1.)
  - c) Unfortunately, the computer in the Space Lab has only 9 megabytes of available memory for running the sorting task. Is it practical to choose bucket sort to be the stable sorting method in the implementation of the above straight radix sort? Explain your answer.
2. (10%) Let  $T$  be a binary search tree, and let  $x$  be a key. Give an efficient algorithm for finding the smallest key  $y$  in  $T$  such that  $y > x$ . Note that  $x$  may or may not be in  $T$ . Explain why your algorithm has the running time it does.
3. (15%) For each of the following, either draw a graph satisfying the given criteria or explain why it can't be done. Your graphs should not have any multi-edges (more than one edge between the same pair of vertices) or self-loops (edges with both ends at the same vertex).
  - a) Draw a graph with 3 connected components, 12 vertices, and 18 edges.
  - b) Draw a graph with 3 connected components, 12 vertices, and 8 edges.
  - c) Draw a graph with three vertices of degree 3, and four vertices of degree 2.
4. (10%) Please answer the following questions about AVL tree operations.
  - a) Draw the AVL tree resulting from the insertion of an item with a key 52 into the AVL tree of Figure 1 (show the tree after each rotation, if any).
  - b) Draw the AVL tree resulting from the removal of the item with key 62 from the AVL tree of Figure 1 (show the tree after each rotation, if any).

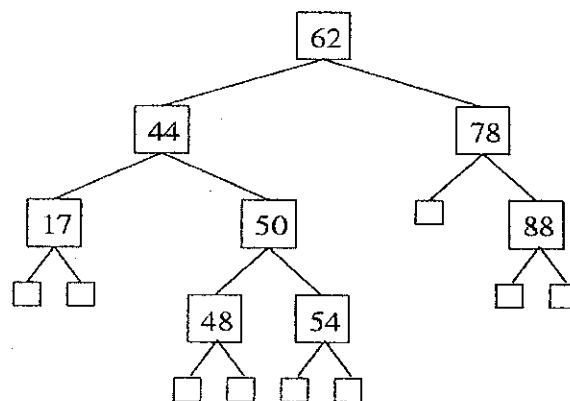


Figure 1: AVL tree for problems (a) and 2(b)

5.(10%)大家都知道 UNIX 是個多工的作業系統，使用者可以同時執行多個程式。請先看懂以下所列出的九行指令，並回答以下五個小問題。

```
1 TempDir=/home/temp
2 TempFile=$TempDir/local.$$
3 cat $TempFile | grep password
4 ftp -n ftp.nsysu.edu.tw << end
5 user anonymous guest@edu.tw
6 put $TempFile prn
7 bye
8 end
9 rm $TempFile
```

- 由於處理 process 與 process 之間大量資訊傳送的需要，UNIX 提供了一個稱為 pipe 的機制，請解釋 pipe 的符號為何，並說明其意義與用途。
- 請說明 TempFile 的內容為何
- 請解釋第三行指令: cat \$TempFile | grep password 的意義
- 請解釋第六行指令: put \$TempFile prn 的意義
- 請解釋第九行指令: rm \$TempFile 的意義

6.(10%)下圖是在 FreeBSD 執行完 ls -la 後所得到的結果，請回答下列問題。

```
total 550
drwxr-xr-x  5 root  wheel   512 Apr 17 11:57 .
drwxr-xr-x 23 root  wheel   512 Apr 16 20:47 ..
-r--r--r--  1 root  wheel   512 Apr 16 19:24 boot0
-r--r--r--  1 root  wheel   512 Apr 16 19:24 boot1
-r--r--r--  1 root  wheel  7680 Apr 16 19:24 boot2
-r-xr-xr-x  1 root  wheel  1136 Apr 16 19:24 cdboot
drwxr-xr-x  2 root  wheel   512 Feb 18 16:59 defaults
-r--r--rw-  1 root  wheel   338 Apr 17 11:49 load
-r-xr-xr-x  1 root  wheel 159744 Apr 16 19:24 loader
-r--r--r--  1 root  wheel   9237 Oct  9 2002 loader.4th
-rw-r--r--  1 root  wheel    67 Oct 29 03:27 loader.conf
-r--r--r--  1 root  wheel  11969 Mar 17 16:00 loader.help
-r-xr-xr-x  1 root  wheel 159744 Mar 27 23:41 loader.old
-r--r--r--  1 root  wheel   338 Oct  9 2002 loader.rc
dr--r--rw-  2 root  wheel   512 Apr 17 11:11 login
drwxr-xr-x  2 root  wheel   512 Apr 17 11:57 logout
-r--r--r--  1 root  wheel   512 Apr 16 19:24 mbr
-r-xr-xr-x  1 root  wheel 161792 Apr 16 19:24 pxeboot
-r--r--r--  1 root  wheel 25121 Oct  9 2002 support.4th
```

- 請解釋第一行中 total 550 的意義為何
- 請寫出權限符合 446 的目錄名稱
- 請寫出 login 對於 wheel 這個群組的成員來說有哪些權限可以使用
- 如果 logout 是一個最新被建立的目錄請問 umask 是多少
- 請問下了 chmod ug+x login/之後 login 的權限為何(用數字表示)

7.(10%)以下是一台網路伺服器的 LOG 紀錄，請說明其中每一行記錄所代表的意義是什麼？

```
(1) 03-10 00:06:33 140.117.240.140 - 140.117.xx.xx 80 GET /scripts/root.exe /c+dir 404 -
(2) 03-10 00:06:33 140.117.240.140 - 140.117.xx.xx 80 GET /c/winnt/system32/cmd.exe /c+dir 404 -
(3) 03-10 01:54:17 140.117.187.210 - 140.117.xx.xx 80 GET /scripts/root.exe /c+dir 404 -
(4) 03-10 01:55:39 140.117.93.34 - 140.117.xx.xx 80 GET /scripts/root.exe /c+dir 404 -
(5) 03-10 02:09:30 218.164.26.125 - 140.117.xx.xx 80 CONNECT -- 501 -
(6) 03-10 02:36:16 140.117.93.34 - 140.117.xx.xx 80 GET /scripts/root.exe /c+dir 404 -
(7) 03-10 02:36:16 140.117.93.34 - 140.117.xx.xx 80 GET /MSADC/root.exe /c+dir 403 -
(8) 03-10 04:52:59 140.117.93.34 - 140.117.xx.xx 80 GET /c/winnt/system32/cmd.exe /c+dir 404 -
(9) 03-10 04:52:59 140.117.93.34 - 140.117.xx.xx 80 GET /scripts/.%5c../winnt/system32/cmd.exe /c+dir 500
(10) 03-10 06:03:56 140.115.217.155 - 140.117.xx.xx 80 OPTIONS / - 200 Microsoft-WebDAV-MiniRedir/5.1.2600
```

8.(20%)請解釋下列名詞

- (a) SQL Injection (b) Mobile Computing (c) Buffer Overflow (d) Deadlock (e) Thrashing