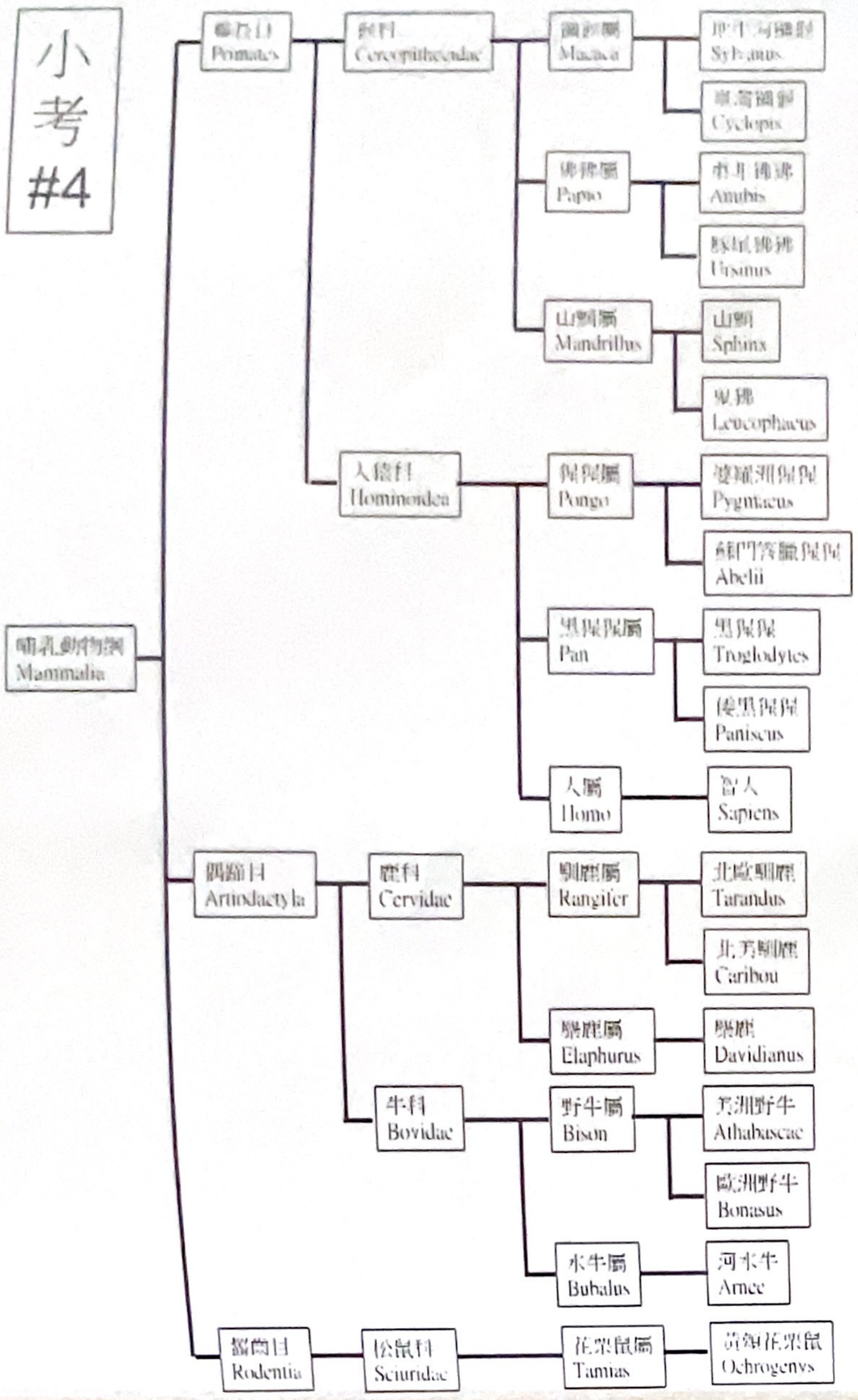
小考 #4



哺乳動物綱的分類架構如左圖，請輸入任何兩個目、科、屬、或種，找出其關係距離大小

- 關係距離為最短路徑的關係數目，鬼狒和黑猩猩為6，猩猩屬和麋鹿為7，靈長目和齧齒目為2，鹿科和水牛屬則為3
- 請到雲端學院下載動物分類.txt(初始事實)

```
CLIPS> (run)
Enter sort #1: Leucophaeus
Enter sort #2: Troglodytes
The relationship distance is 6
```

```
(deftemplate sort
  (slot super)
  (slot sub))

(deftemplate relationship
  (multislot sort01)
  (multislot sort02))

(deffacts initial
  (sort (super Mammalia) (sub Primates))
  (sort (super Mammalia) (sub Artiodactyla))
  (sort (super Mammalia) (sub Rodentia))
  (sort (super Primates) (sub Cercopithecidae))
  (sort (super Primates) (sub Hominoidea))
  (sort (super Artiodactyla) (sub Cervidae))
  (sort (super Artiodactyla) (sub Bovidae))
  (sort (super Rodentia) (sub Sciuridae))
  (sort (super Cercopithecidae) (sub Macaca))
  (sort (super Cercopithecidae) (sub Papio))
  (sort (super Cercopithecidae) (sub Mandrillus))
        :
  (sort (super Tamias) (sub Ochrogenys))
  (phase input)
)
```



```
(defrule input
  (phase input)
  =>
  (printout t "Enter sort #1: ")
  (bind ?input1 (read))
  (printout t "Enter sort #2: ")
  (bind ?input2 (read))
  (assert (relationship (sort01 ?input1) (sort02 ?input2))))
```

(read) 可以從鍵盤輸入一個symbol
bind會將輸入的symbol設定給?input1變數

```
(defrule change-phase
  (declare (salience -10))
  ?f1 <- (phase input)
  =>
  (retract ?f1)
  (assert (phase erase)))
```

(declare (salience -10)) 設定此規則的優先權為-10，
未設定者為0，優先權越大的規則越先執行，
優先權的設定範圍為 -10000~10000

(length$ $?multi) 可以傳回 $?multi 變數中值的個數

Enter sort #1: Pan 黑猩猩屬
Enter sort #2: Abelii 蘇門答臘猩猩

↓

(relationship (sort01 Pan) (race02 Abelii))

↓

(relationship (sort01 Mammalia Primates Hominoidea Pan)
(sort02 Mammalia Primates Hominoidea Pongo Abelii))

↓

(relationship (sort01 Pan) (sort02 Pongo Abelii))

↓

(printout t "The relationship distance is "
(+ (length$ $?sort01) (length$ $?sort02)) crlf))

↓

The relationship distance is 3