2020/12/04(五)，109 學年第一學期 資料科學應用 R 作業(5)

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（請依照規定)貼上執行程式碼及執行結果。
詳見：R 程式作業繳交方式
http://www.hmwu.idv.tw/web/teaching/doc/R-how-homework.pdf
ex2.4(a)

```
> for(i in 1:5){
+    for(j in 1:i){
+       cat(j)
+    }
+    cat("\n")
+ }
1
12
123
1234
12345
> # ex2.4(b)
> j = 1
> for(i in 4:0){
+    for(j in j){
+       cat(rep("",each = i))
+       cat(rep((j), (each = j)))
+       j = j + 2
+    }
+    cat("\n")
+ }
    1
   3 3 3
  5 5 5 5 5
 7 7 7 7 7 7 7
9 9 9 9 9 9 9 9 9
> # ex2.50
> P <- c("a", "b", "c", "d", "e", "f", "g")
> S <- ifelse(P == "a", 25,
+                ifelse(P == "b", 49,
```

```
+                              ifelse(P == "c", 95,
+                                     ifelse(P == "d", 178,
+                                            ifelse(P == "e", 264,
+                                                   ifelse(P == "f", 327,
+                                                          ifelse(P == "g", 373,
NA)))))))
> A <- matrix(0, nrow = 7 ,ncol = 7)
> for(i in 1:7){
+     for(j in 1:7){
+         m <- S[i] - S[j]
+         N <- ifelse(m < 0,(-m),m)
+         X <- (N - 50)+100
+         o <-ifelse(50 >= N, 100,
+                    ifelse(300 >= N & N >50, X,
+                           ifelse(N > 300, 400, NA)))
+         A[i,j] <- o
+     }
+ }
> rownames(A) <- c("A", "B", "C", "D", "E", "F", "G")
> colnames(A) <- c("A", "B", "C", "D", "E", "F", "G")
> A
    A   B   C   D   E   F   G
A 100 100 120 203 289 400 400
B 100 100 100 179 265 328 400
C 120 100 100 133 219 282 328
D 203 179 133 100 136 199 245
E 289 265 219 136 100 113 159
F 400 328 282 199 113 100 100
G 400 400 328 245 159 100 100
```