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> #2020/12/11(五), 109 學年第一學期 資料科學應用 R 期中考
>
> #學號:A107260102            姓名:熊家濬
> #ex1(a)
> study(x,y)
13 8 10000 2613 9 10600 29.2513 10 11200 32.513 11 11800 35.7513 12 12400 39
14 8 10400 2814 9 11000 31.514 10 11600 3514 11 12200 38.514 12 12800 42
15 8 10800 3015 9 11400 33.7515 10 12000 37.515 11 12600 41.2515 12 13200 45
16 8 11200 3216 9 11800 3616 10 12400 4016 11 13000 4416 12 13600 48
17 8 11600 3417 9 12200 38.2517 10 12800 42.517 11 13400 46.7517 12 14000 51
> data.frame(x,y, U , Tuition, Fit)
      ID Calculus English    ID.1 Calculus.1 English.1    U Tuition Fit
1 No.1          72      62 No.71          69          96 26    10000   *
2 No.2          88      97 No.72          51         100 26    10000   *
3 No.3          76      66 No.73          37          50 26    10000   *
4 No.4          89      51 No.74          33          92 26    10000   *
5 No.5          46      15 No.75           4          37 26    10000   *
> list(Eng.hr=x, Comp.hr=y, Tuition=Tuition, U=U )
$Eng.hr
      ID Calculus English
1 No.1          72      62
2 No.2          88      97
3 No.3          76      66
4 No.4          89      51
5 No.5          46      15

$Comp.hr
       ID Calculus English
1 No.71          69      96
2 No.72          51     100
3 No.73          37      50
4 No.74          33      92
5 No.75           4      37

$Tuition
[1] 10000

$U
```

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[1] 26

> study <- function(x,y){
+     #    x <-c(13:17)
+     #    y <-c(8:12)
+     a <-matrix(0, 25, 5)
+     for(x in 13:17){
+         for(y in 8:12){
+             U <- x*(0.5)*y*(0.5)
+             Tuition <- 400*x+600*y
+             fit <- ifelse(Tuition <= 12000, "*", "")
+             cat(x,y, Tuition, U)
+         }
+           cat("\n")
+     }
+ }
> library(readxl)
> readxl_example()
 [1] "clippy.xls"       "clippy.xlsx"      "datasets.xls"     "datasets.xlsx"
 [5] "deaths.xls"       "deaths.xlsx"      "geometry.xls"     "geometry.xlsx"
 [9] "type-me.xls"      "type-me.xlsx"
> #ex2(a)
> xlsx_file<- "Score-109.xlsx"
> excel_sheets(xlsx_file)
[1] "score"
> mydata2<-read_excel(xlsx_file,sheet="score",na="NA",skip=1)

> x<-as.data.frame(head(mydata2, 5))
> y<-as.data.frame(tail(mydata2, 5))
> x
      ID Calculus English
1 No.1          72      62
2 No.2          88      97
3 No.3          76      66
4 No.4          89      51
5 No.5          46      15
> y
        ID Calculus English
```

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1 No.71            69          96
2 No.72            51         100
3 No.73            37          50
4 No.74            33          92
5 No.75             4          37
> #ex2(b)
> mydata2[is.na(mydata2)] <- 0
> ss <- which(mydata2[,2] < 60 & mydata2[,3] < 60)
> mydata2[ss,]
# A tibble: 23 x 3
     ID        Calculus English
     <chr>        <dbl>   <dbl>
  1 No.5             46      15
  2 No.7             32      51
  3 No.8             51       0
  4 No.11             3       0
  5 No.15            39       6
  6 No.18            40       0
  7 No.21            45      51
  8 No.26            39      29
  9 No.30            48      52
10 No.33            18       0
# … with 13 more rows
> # ex2(c)
> x1 <- sum(mydata2[,2])/75
> y1 <- sum(mydata2[,3])/75
> my.cor <-for(i in 1:75){
+      k <- (mydata2[i,2] - x1)*(mydata2[i,3] - y1)
+      g <- (mydata2[i,2] - x1)*2*0.5
+      m <- (mydata2[i,3] - y1)*2*0.5
+      p <- k/(g*m)
+      p
+ }
> # ex2(d)
> cor(mydata2[,2:3])
                  Calculus     English
Calculus    1.00000000 -0.02334661
English    -0.02334661  1.00000000
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