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> #2020/11/13(五), 109 學年第一學期 資料科學應用 R 作業(3)
> #學號: A107260036  姓名: 顏郁芹
> #ex1.25(a)
> library(readxl)
> x <- read_excel("R-score.xlsx", skip=1)
New names:
* `0.15` -> `0.15...6`
* `0.15` -> `0.15...7`
> names(x) <- c("NO", "系級", "學號", "姓名" ,"小考 1", "小考 2", "小考 3", "作業",
"期末考", "點名")
> head(x, 5)
# A tibble: 5 x 10
     NO 系級       學號 姓名   小考 1 小考 2 小考 3   作業 期末考
  <dbl> <chr>     <dbl> <chr>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
1     1 統計系 1… 3.26e7 周小如…      55     95    100    100     86
2     2 統計系 1… 3.26e7 周抒如…      30     65     70    100     94
3     3 會計系 1… 3.26e7 林育安…      10      5     25     10     77
4     4 會計系 1… 3.26e7 林育辰…      10     20     45     40     87
5     5 會計系 1… 3.26e7 黃季晴…       5     15     20     25     86
# … with 1 more variable: 點名 <dbl>
> #ex1.25(b)
> mean(x$"小考 1")
[1] 25
> mean(x$"小考 2")
[1] 36.15385
> mean(x$"小考 3")
[1] 51.15385
> mean(x$"期末考")
[1] 77.23077
> sd(x$"小考 1")
[1] 18.37117
> sd(x$"小考 2")
[1] 33.05008
> sd(x$"小考 3")
[1] 26.7047
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> sd(x$"期末考")
[1] 23.89963
> #ex1.25(c)
> x$"學期成績" <- (x$"小考 1"*0.1 + x$"小考 2"*0.15 + x$"小考 3"*0.15 + x$"作業
"*0.20 + x$"期末考"*0.40)
> data.frame("學號" = x$"學號","學期成績" =    x$"學期成績")
          學號  學期成績
1    32578012       89.15
2    32578014       80.85
3    32578016       38.30
4    32578018       53.55
5    32578020       45.15
6    32578022       46.05
7    32578026       62.80
8    32578028       75.10
9    32578030       57.30
10 32474226       46.15
11 32475032       36.95
12 32578002       85.75
13 32578004       20.25
> #ex1.29(a)
> x <- read_excel("R-score.xlsx", skip=1)
New names:
* `0.15` -> `0.15...6`
* `0.15` -> `0.15...7`
> names(x) <- c("NO", "系級", "學號", "姓名" ,"小考 1", "小考 2", "小考 3", "作業",
"期末考", "點名")
> head(x, 5, sep="\t")
# A tibble: 5 x 10
       NO  系級       學號  姓名    小考 1  小考 2  小考 3    作業  期末考
   <dbl> <chr>    <dbl> <chr> <dbl> <dbl> <dbl>    <dbl>
1        1  統計系 1…  3.26e7  周小如…       55       95      100      100        86
2        2  統計系 1…  3.26e7  周抒如…       30       65       70      100        94
3        3  會計系 1…  3.26e7  林育安…       10        5       25       10        77
4        4  會計系 1…  3.26e7  林育辰…       10       20       45       40        87
```

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5        5  會計系 1…  3.26e7  黃季晴…        5       15       20       25        86
#  …  with 1 more variable:  點名  <dbl>
> #ex1.29(b)
> y <- read.table("20140714-weather.txt", header=TRUE, sep="\t")
> head(y, 5, sep="\t")
   locationName        lat          lon stationId TEMP ELEV
1            基隆  25.1348 121.7321       466940 29.1    27
2            淡水  25.1656 121.4400       466900 28.5    19
3            板橋  24.9993 121.4338       466880 29.0    10
4          竹子湖  25.1650 121.5363       466930 25.2   607
5            新竹  24.8300 121.0061       467571 29.8    34
> #ex1.29(c)
> d <- read.csv("weather_delays14.csv")
> head(d, 5)
   year month day dep_time arr_time carrier tailnum flight
1 2014     1   1     1733     2024      AA  N3HPAA    199
2 2014     1   1     1718     1840      B6  N324JB   1734
3 2014     1   1      624      946      DL  N3751B    479
4 2014     1   1      910     1203      DL  N910DL   1174
5 2014     1   1     1850     2052      MQ  N1EAMQ   2839
   origin dest carrier_delay weather_delay nas_delay
1     JFK  ORD             0             7        51
2     JFK  BTV             0            18         6
3     JFK  ATL             0             9        45
4     LGA  PBI             0            52         0
5     LGA  STL             0            35        12
   aircraft_delay
1              11
2               0
3               0
4               0
5               0
> #ex2.10
> score <- sample(1:100, 50, replace = TRUE)
> if(any(score > 95)) cat("老師請同學吃飯") else cat("老師很生氣")
```

老師請同學吃飯

```
> #ex2.21(a)
> f <- read.csv("score02.csv", header = T)
> head(f, 7)
          學號 期中考 期末考
1 410073106     80     60
2 410073023     50     73
3 410079062     45     35
4 410079090     77     54
5 410079118     62     54
6 410079120     67     45
7 410079121     72     78
> #ex2.21(b)
> names(f) <- c("id", "mid", "final")
> f
                id mid final
1    410073106    80     60
2    410073023    50     73
3    410079062    45     35
4    410079090    77     54
5    410079118    62     54
6    410079120    67     45
7    410079121    72     78
8    410172016    62     75
9    410172027    82     95
10 410172103    92     66
11 410173029    42     11
12 410173072    55     73
13 410173101    82     64
14 410173134    92     78
15 410173135 100     55
16 410173136    80     88
17 410174210    50     63
18 410183004    95     90
19 410183012    67     35
```

| | | | |
|---|---|---|---|
| 20 | 410184012 | 75 | 16 |
| 21 | 410184015 | 52 | 45 |
| 22 | 410273002 | 100 | 25 |
| 23 | 410273004 | 99 | 56 |
| 24 | 410273005 | 60 | 55 |
| 25 | 410273007 | 100 | 76 |
| 26 | 410273010 | 72 | 40 |
| 27 | 410273011 | 55 | 45 |
| 28 | 410273014 | 45 | 57 |
| 29 | 410273016 | 62 | 100 |
| 30 | 410273018 | 100 | 25 |
| 31 | 410273019 | 70 | 67 |
| 32 | 410273020 | 95 | 55 |
| 33 | 410273024 | 75 | 55 |
| 34 | 410273031 | 85 | 68 |
| 35 | 410273032 | 75 | 64 |
| 36 | 410273034 | 70 | 47 |
| 37 | 410273040 | 67 | 56 |
| 38 | 410273041 | 57 | 28 |
| 39 | 410273042 | 70 | 85 |
| 40 | 410273048 | 52 | 62 |
| 41 | 410273049 | 72 | 40 |
| 42 | 410273050 | 57 | 42 |
| 43 | 410273051 | 47 | 6 |
| 44 | 410273057 | 80 | 70 |
| 45 | 410273060 | 50 | 40 |
| 46 | 410273062 | 60 | 76 |
| 47 | 410273065 | 85 | 70 |
| 48 | 410273067 | 70 | 86 |
| 49 | 410273069 | 82 | 65 |
| 50 | 410273070 | 100 | 72 |
| 51 | 410273073 | 75 | 88 |
| 52 | 410273075 | 87 | 40 |
| 53 | 410273076 | 47 | 75 |
| 54 | 410273081 | 90 | 31 |

| | | | |
|---|---|---|---|
| 55 | 410273094 | 100 | 8 |
| 56 | 410273095 | 90 | 64 |
| 57 | 410273096 | 87 | 70 |
| 58 | 410273102 | 100 | 100 |
| 59 | 410273105 | 85 | 52 |
| 60 | 410273106 | 80 | 71 |
| 61 | 410273108 | 90 | 94 |
| 62 | 410273109 | 90 | 80 |
| 63 | 410273110 | 87 | 87 |
| 64 | 410273116 | 82 | 100 |
| 65 | 410275001 | 61 | 9 |
| 66 | 410275005 | 92 | 73 |
| 67 | 410275015 | 52 | 43 |
| 68 | 410275016 | 55 | 60 |
| 69 | 410275017 | 57 | 47 |
| 70 | 410275020 | 95 | 81 |
| 71 | 410275029 | 79 | 93 |
| 72 | 410275032 | 85 | 33 |
| 73 | 410275033 | 60 | 29 |
| 74 | 410275034 | 85 | 81 |
| 75 | 410275036 | 72 | 26 |
| 76 | 410275040 | 70 | 57 |
| 77 | 410275051 | 35 | 90 |
| 78 | 410275055 | 85 | 53 |
| 79 | 410275058 | 100 | 100 |
| 80 | 410279001 | 100 | 48 |
| 81 | 410279006 | 32 | 14 |
| 82 | 410279018 | 47 | 55 |
| 83 | 410279021 | 42 | 32 |
| 84 | 410279039 | 90 | 41 |
| 85 | 410279049 | 47 | 60 |
| 86 | 410279054 | 32 | 54 |
| 87 | 410279063 | 72 | 82 |
| 88 | 410279075 | 38 | 90 |
| 89 | 410279080 | 90 | 36 |

```
90    49973086    82        76
91    49979003    85        25
92    49979046    82        55
93    49981006    82        55
94    49981011    95        98
> #ex2.21(c)
> id <- (f$id)
> id[f$final>f$mid]
  [1] 410073023 410079121 410172016 410172027 410173072
  [6] 410173136 410174210 410273014 410273016 410273042
[11] 410273048 410273062 410273067 410273073 410273076
[16] 410273108 410273116 410275016 410275029 410275051
[21] 410279018 410279049 410279054 410279063 410279075
[26]    49981011
> #ex2.21(d)
> length(id[f$final>=60 & f$mid>=60])
[1] 38
> length(id[f$final>=60 & f$mid<60])
[1] 9
> length(id[f$final<60 & f$mid>=60])
[1] 32
> length(id[f$final<60 & f$mid<60])
[1] 15
> #ex2.21(e)
> f$"學期成績" <- ((f$"mid"+f$"final")/2)
> sort(f$"學期成績", decreasing=T)
  [1] 100.0 100.0  96.5  92.5  92.0  91.0  88.5  88.0  88.0
[10]  87.0  86.0  86.0  85.0  85.0  84.0  83.0  82.5  81.5
[19]  81.0  79.0  79.0  78.5  78.0  77.5  77.5  77.5  77.5
[28]  77.0  77.0  76.5  75.5  75.0  75.0  75.0  74.0  73.5
[37]  73.0  70.0  69.5  69.0  68.5  68.5  68.5  68.5  68.5
[46]  68.0  65.5  65.5  65.0  64.0  64.0  63.5  63.5  63.0
[55]  62.5  62.5  62.5  61.5  61.5  61.0  60.5  59.0  58.5
[64]  58.0  57.5  57.5  57.0  56.5  56.0  56.0  56.0  55.0
[73]  54.0  53.5  52.0  51.0  51.0  51.0  50.0  49.5  49.0
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[82]  48.5  47.5  45.5  45.0  44.5  43.0  42.5  40.0  37.0
[91]  35.0  26.5  26.5  23.0
>
```