學號:A106260020　　　姓名:楊鎵綺

```
> #exl1.25(a)
> score0 <- read_excel("data/R-score.xlsx", sheet = "工作表 1", na = "NA" ,skip = 1)
New names:
* `0.15` -> `0.15...6`
* `0.15` -> `0.15...7`
> head(score0)
# A tibble: 6 x 10
```

	No	系級	學號	姓名	`0.1`	`0.15...6`	`0.15...7`	`0.2`
	<dbl>	<chr>	<dbl>	<chr>	<dbl>	<dbl>	<dbl>	<dbl>
1	1	統計系 1…	3.26e7	周小如…	55	95	100	100
2	2	統計系 1…	3.26e7	周抒如…	30	65	70	100
3	3	會計系 1…	3.26e7	林育安…	10	5	25	10
4	4	會計系 1…	3.26e7	林育辰…	10	20	45	40
5	5	會計系 1…	3.26e7	黃季晴…	5	15	20	25
6	6	統計系 1…	3.26e7	詹宜瑄…	10	35	60	0

```
# … with 2 more variables: `0.4` <dbl>, `10 分` <dbl>

> #exl1.25(b)
> lapply(score0[5:9], mean)
$`0.1`
[1] 25

$`0.15...6`
[1] 36.15385

$`0.15...7`
[1] 51.15385

$`0.2`
[1] 51.15385

$`0.4`
[1] 77.23077

> lapply(score0[5:9], sd)
$`0.1`
```

[1] 18.37117

$`0.15...6`
[1] 33.05008

$`0.15...7`
[1] 26.7047

$`0.2`
[1] 38.57643

$`0.4`
[1] 23.89963

```
> #exl1.25(c)
> score1 <- 0.1*score0[,5]+0.15*score0[,6]+0.15*score0[,7]+0.20*score0[,8]
> +0.40*score0[,9]
       0.4
1   34.4
2   37.6
3   30.8
4   34.8
5   34.4
6   30.8
7   34.8
8   31.6
9   34.8
10 30.4
11 31.2
12 36.0
13   0.0
> total <- data.frame(score0[,3], score1)
> names(total) <- c("學號", "總平均")

> #exl1.29(a)
> r.score <- read_excel("data/R-score.xlsx", na = "NA" ,skip = 1)
New names:
* `0.15` -> `0.15...6`
* `0.15` -> `0.15...7`
> head(r.score)
```

```
# A tibble: 6 x 10
      No 系級      學號 姓名   `0.1` `0.15...6` `0.15...7` `0.2`
   <dbl> <chr>    <dbl> <chr> <dbl>      <dbl>      <dbl> <dbl>
1      1 統計系 1… 3.26e7 周小如…    55         95        100   100
2      2 統計系 1… 3.26e7 周抒如…    30         65         70   100
3      3 會計系 1… 3.26e7 林育安…    10          5         25    10
4      4 會計系 1… 3.26e7 林育辰…    10         20         45    40
5      5 會計系 1… 3.26e7 黃季晴…     5         15         20    25
6      6 統計系 1… 3.26e7 詹宜瑄…    10         35         60     0
# … with 2 more variables: `0.4` <dbl>, `10 分` <dbl>
> tail(r.score)
# A tibble: 6 x 10
      No 系級      學號 姓名   `0.1` `0.15...6` `0.15...7` `0.2`
   <dbl> <chr>    <dbl> <chr> <dbl>      <dbl>      <dbl> <dbl>
1      8 統計系 1… 3.26e7 蔡旻憫…    55         45         75   100
2      9 統計系 1… 3.26e7 黎奕璇…    10         15         55    55
3     10 會計系 1… 3.25e7 蕭偲賢…    15          5         30    45
4     11 會計系 1… 3.25e7 謝涵融…    35         10          5     0
5     12 會計系 1… 3.26e7 羅順霓…    50        100         65   100
6     13 統計系 1… 3.26e7 顧瀚薇…    15         10         75    30
# … with 2 more variables: `0.4` <dbl>, `10 分` <dbl>
> str(r.score)
tibble [13 × 10] (S3: tbl_df/tbl/data.frame)
 $ No       : num [1:13] 1 2 3 4 5 6 7 8 9 10 ...
 $ 系級     : chr [1:13] "統計系 1" "統計系 1" "會計系 1" "會計系 1" ...
 $ 學號     : num [1:13] 32578012 32578014 32578016 32578018 32578020 ...
 $ 姓名     : chr [1:13] "周小如" "周抒如" "林育安" "林育辰" ...
 $ 0.1      : num [1:13] 55 30 10 10 5 10 25 55 10 15 ...
 $ 0.15...6: num [1:13] 95 65 5 20 15 35 50 45 15 5 ...
 $ 0.15...7: num [1:13] 100 70 25 45 20 60 40 75 55 30 ...
 $ 0.2      : num [1:13] 100 100 10 40 25 0 60 100 55 45 ...
 $ 0.4      : num [1:13] 86 94 77 87 86 77 87 79 87 76 ...
 $ 10 分     : num [1:13] 10 10 10 10 0 0 10 10 4 7 ...

> #exl1.29(b)
> tdwether <- read.table("data/20140714-weather.txt", sep = "", header = T, fileEncoding = 'BIG5')
> head(tdwether)
  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
```

	locationName	lat	lon	stationId	TEMP	ELEV
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
6	臺中	24.1475	120.6759	467490	29.4	84

```
> tail(tdwether)
```

	locationName	lat	lon	stationId	TEMP	ELEV
24	新店	24.9608	121.5165	A0A9M0	26.8	24
25	臺北	25.0396	121.5067	466920	30.4	5
26	臺南	22.9952	120.1970	467410	30.0	41
27	金門	24.4074	118.2893	467110	28.4	48
28	馬祖	26.1694	119.9232	467990	28.0	98
29	新屋	25.0067	121.0475	467050	29.3	21

```
> str(tdwether)
'data.frame':   29 obs. of    6 variables:
 $ locationName: chr    "基隆" "淡水" "板橋" "竹子湖" ...
 $ lat         : num    25.1 25.2 25 25.2 24.8 ...
 $ lon         : num    122 121 121 122 121 ...
 $ stationId   : chr    "466940" "466900" "466880" "466930" ...
 $ TEMP        : num    29.1 28.5 29 25.2 29.8 29.4 29.2 27.8 22.8 14.4 ...
 $ ELEV        : int    27 19 10 607 34 84 7 11 1015 2413 ...


> #exl1.29(c)
> delayw <- read.csv("data/weather_delays14.csv", header = T)
> head(delayw)
```

	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
6	2014	1	2	2049	45	AA	N319AA	21

	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
6	JFK	LAX	0	87	41

	aircraft_delay
1	11

2	0
3	0
4	0
5	0
6	22

```
> tail(delayw)
```

	year	month	day	dep_time	arr_time	carrier	tailnum	flight
4654	2014	10	26	1039	1413	VX	N634VA	23
4655	2014	10	26	1135	1451	VX	N836VA	409
4656	2014	10	27	1042	1416	VX	N642VA	187
4657	2014	10	29	1507	1808	DL	N321NB	1923
4658	2014	10	31	1500	1751	DL	N338NB	1685
4659	2014	10	31	1323	1502	AA	N3KNAA	329

	origin	dest	carrier_delay	weather_delay	nas_delay
4654	JFK	SFO	0	9	9
4655	JFK	LAX	5	11	0
4656	EWR	SFO	12	9	0
4657	LGA	MIA	0	81	0
4658	LGA	MCO	0	28	0
4659	LGA	ORD	0	113	4

	aircraft_delay
4654	0
4655	0
4656	0
4657	0
4658	0
4659	0

```
> str(delayw)
'data.frame':   4659 obs. of    14 variables:
 $ year         : int   2014 2014 2014 2014 2014 2014 2014 2014 2014 2014 ...
 $ month        : int   1 1 1 1 1 1 1 1 1 1 ...
 $ day          : int   1 1 1 1 1 2 2 2 2 2 ...
 $ dep_time     : int   1733 1718 624 910 1850 2049 738 5 1618 1657 ...
 $ arr_time     : int   2024 1840 946 1203 2052 45 1124 339 1958 2050 ...
 $ carrier      : chr   "AA" "B6" "DL" "DL" ...
 $ tailnum      : chr   "N3HPAA" "N324JB" "N3751B" "N910DL" ...
 $ flight       : int   199 1734 479 1174 2839 21 33 185 133 145 ...
 $ origin       : chr   "JFK" "JFK" "JFK" "LGA" ...
 $ dest         : chr   "ORD" "BTV" "ATL" "PBI" ...
 $ carrier_delay : int   0 0 0 0 0 0 0 0 0 0 ...
```

```
 $ weather_delay : int   7 18 9 52 35 87 8 53 32 6 ...
 $ nas_delay     : int   51 6 45 0 12 41 26 14 5 18 ...
 $ aircraft_delay: int   11 0 0 0 0 22 0 97 1 101 ...

> #exl2.10
> score <- sample(1:100, 50, replace = TRUE)
> score
 [1]  47  79  47  79  59  62  33  62  90  69  14  75  67  31   8
[16]  46  86  60  62  66   1  86  74  38  77  88  87  56  15  10
[31]  82  94  81   4  40  34 100  67  63  67  59  45  57  95  73
[46]  12  31  40   8  24
> 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>
> #exl2.21(a)
> score02 <- read.csv("data/score02.csv", header = T, fileEncoding = 'BIG5')
> score02[1:7,]
          學號 期中考 期末考
1 410072106      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

> #exl2.21(b)
> names(score02) <- c("id", "mid", "final")
> names(score02)
[1] "id"     "mid"     "final"

> #exl2.21(c)
> progress <- subset(score02, final > mid)
> progress$id
 [1] 410073023 410079121 410172016 410172027 410173072 410173136
 [7] 410174210 410273014 410273016 410273042 410273048 410273062
[13] 410273067 410273073 410273076 410273108 410273116 410275016
[19] 410275029 410275051 410279018 410279049 410279054 410279063
```

[25] 410279075   49981011

```r
> #exl2.21(d)
> A <- nrow(subset(score02, mid >= 60 & final >=60))
> B <- nrow(subset(score02, mid >= 60 & final <=60))
> C <- nrow(subset(score02, mid <= 60 & final >=60))
> D <- nrow(subset(score02, mid <= 60 & final <=60))
> library(Hmisc)
> label(A) <- "期中期末都及格"
> label(B) <- "期中及格，期末不及格"
> label(C) <- "期中不及格，期末及格"
> label(D) <- "期中不及格，期末不及格"
> A
期中期末都及格
[1] 38
> B
期中及格，期末不及格
[1] 33
> C
期中不及格，期末及格
[1] 10
> D
期中不及格，期末不及格
[1] 19

> #exl2.21(e)
> meanscore <- 0.5*score02[,2]+0.5*score02[,3]
> sort(meanscore, decreasing = T)
 [1] 100.0 100.0  96.5  92.5  92.0  91.0  88.5  88.0  88.0  87.0
[11]  86.0  86.0  85.0  85.0  84.0  83.0  82.5  81.5  81.0  79.0
[21]  79.0  78.5  78.0  77.5  77.5  77.5  77.5  77.0  77.0  76.5
[31]  75.5  75.0  75.0  75.0  74.0  73.5  73.0  70.0  69.5  69.0
[41]  68.5  68.5  68.5  68.5  68.5  68.0  65.5  65.5  65.0  64.0
[51]  64.0  63.5  63.5  63.0  62.5  62.5  62.5  61.5  61.5  61.0
[61]  60.5  59.0  58.5  58.0  57.5  57.5  57.0  56.5  56.0  56.0
[71]  56.0  55.0  54.0  53.5  52.0  51.0  51.0  51.0  50.0  49.5
[81]  49.0  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
>
```