

#2020/11/13(五) 109 學年第一學期 資料科學應用 R 作業(3)

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> #1.25(a)

> install.packages()

Warning in install.packages :

package 'readxl' is in use and will not be installed

> library(readxl)

> a <- read_excel("data/R-score.xlsx",skip=1)

New names:

* `0.15` -> `0.15...6`

* `0.15` -> `0.15...7`

> names(a) <- 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(a,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 點名
--	----	----	----	----	---------	---------	---------	----	-----------

	<dbl>	<chr>		<dbl>	<chr>	<dbl>	<dbl>	<dbl>	<dbl>
--	-------	-------	--	-------	-------	-------	-------	-------	-------

1	1	統計系 1	32578012	周小如	55	95	100	100	
---	---	-------	----------	-----	----	----	-----	-----	--

86 10

2	2	統計系 1	32578014	周抒如	30	65	70	100	
---	---	-------	----------	-----	----	----	----	-----	--

94 10

3	3	會計系 1	32578016	林育安	10	5	25	10	
---	---	-------	----------	-----	----	---	----	----	--

77 10

4	4	會計系 1	32578018	林育辰	10	20	45	40	
---	---	-------	----------	-----	----	----	----	----	--

87 10

5	5	會計系 1	32578020	黃季晴	5	15	20	25	
---	---	-------	----------	-----	---	----	----	----	--

86 0

> #1.25(b)

> mean(a\$"小考(1)")

[1] 25

> sd(a\$"小考(1)")

[1] 18.37117

> mean(a\$"小考(2)")

[1] 36.15385

> sd(a\$"小考(2)")

[1] 33.05008

```

> mean(a$"小考(3)")
[1] 51.15385
> sd(a$"小考(3)")
[1] 26.7047
> mean(a$"作業")
[1] 51.15385
> sd(a$"作業")
[1] 38.57643
> mean(a$"期末考")
[1] 77.23077
> sd(a$"期末考")
[1] 23.89963
> #1.25(c)
> a$"學期成績" <- (0.1*a$"小考(1)" + 0.15*a$"小考(2)" + 0.15*a$"小考(3)" +
0.2*a$"作業" + 0.4*a$"期末考")
> data.frame(a$"學號",a$"學期成績")
  a.學號 a.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
> #1.29(a)
> library(readxl)
> d <- read_excel("data/R-score.xlsx",skip=1)
New names:
* `0.15` -> `0.15...6`
* `0.15` -> `0.15...7`
> names(d) <- 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(d,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
點名
      <dbl> <chr>      <dbl> <chr>      <dbl>      <dbl>      <dbl> <dbl> <dbl>
<dbl>
1      1 統計系 1 32578012 周小如      55      95      100    100
86     10
2      2 統計系 1 32578014 周抒如      30      65      70    100
94     10
3      3 會計系 1 32578016 林育安      10       5      25     10
77     10
4      4 會計系 1 32578018 林育辰      10      20      45     40
87     10
5      5 會計系 1 32578020 黃季晴       5      15      20     25
86      0
```

```
> tail(d,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
點名
      <dbl> <chr>      <dbl> <chr>      <dbl>      <dbl>      <dbl> <dbl> <dbl>
<dbl>
1      9 統計系 1 32578030 黎奕璇      10      15      55     55
87      4
2     10 會計系 1 32474226 蕭恩賢      15       5      30     45
76      7
3     11 會計系 1 32475032 謝涵融      35      10       5      0
78     10
4     12 會計系 1 32578002 羅順寬      50     100      65    100
90     10
5     13 統計系 1 32578004 顧瀚薇      15      10      75     30
0     10
```

```
> #1.29(b)
> e <- read.delim("data/20140714-weather.txt",header=TRUE,sep="\t")
> head(e,5)
  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

```

```
> tail(e,5)
```

```

      locationName      lat      lon stationId TEMP ELEV
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

```

```
> #1.29(c)
```

```
> f <- read.csv("data/weather_delays14.csv")
```

```
> head(f,5)
```

```

      year month day dep_time arr_time carrier tailnum flight origin dest
1 2014      1   1    1733    2024      AA  N3HPAA    199   JFK
ORD
2 2014      1   1    1718    1840      B6  N324JB    1734   JFK  BTV
3 2014      1   1     624     946      DL  N3751B    479   JFK  ATL
4 2014      1   1     910    1203      DL  N910DL    1174   LGA  PBI
5 2014      1   1    1850    2052      MQ  N1EAMQ    2839   LGA
STL

```

```

      carrier_delay weather_delay nas_delay aircraft_delay
1              0              7              51              11
2              0             18              6              0
3              0              9             45              0
4              0             52              0              0
5              0             35             12              0

```

```
> tail(f,5)
```

```

      year month day dep_time arr_time carrier tailnum flight origin dest
4655 2014    10  26    1135    1451      VX  N836VA    409   JFK
LAX
4656 2014    10  27    1042    1416      VX  N642VA    187   EWR
SFO
4657 2014    10  29    1507    1808      DL  N321NB    1923   LGA
MIA
4658 2014    10  31    1500    1751      DL  N338NB    1685   LGA
MCO
4659 2014    10  31    1323    1502      AA  N3KNAA    329   LGA

```

ORD

	carrier_delay	weather_delay	nas_delay	aircraft_delay	
4655	5		11	0	0
4656	12		9	0	0
4657	0		81	0	0
4658	0		28	0	0
4659	0		113	4	0

> #2.10

> h <- sample(1:100, 50, replace = TRUE)

> if(any(h> 95)){cat("老師請同學吃飯")}else{cat("老師很生氣")}

老師請同學吃飯

> #2.21(a)

> g <- read.csv("data/score02.csv")

> head(g,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

> #2.21(b)

> names(g) <- c("id","mid","final")

> g

	id	mid	final
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
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

> #2.21(c)

> x<-g\$id[g\$final>g\$mid]

> cat(x)

410073023 410079121 410172016 410172027 410173072 410173136 410174210
410273014 410273016 410273042 410273048 410273062 410273067 410273073
410273076 410273108 410273116 410275016 410275029 410275051 410279018
410279049 410279054 410279063 410279075 49981011

>