

2020/11/06(五), 109 學年第一學期 資料科學應用 R 作業(2)

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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>

> #ex1.13(a)

```
> lm.obj <- lm(airquality$Wind ~ airquality$Temp)
```

```
> lm.anova <- anova(lm.obj)
```

```
> class(lm.anova)
```

```
[1] "anova"            "data.frame"
```

```
> str(lm.anova)
```

```
Classes 'anova' and 'data.frame': 2 obs. of 5 variables:
```

```
 $ Df        : int 1 151
```

```
 $ Sum Sq : num 396 1491
```

```
 $ Mean Sq: num 395.71 9.87
```

```
 $ F value: num 40.1 NA
```

```
 $ Pr(>F) : num 2.64e-09 NA
```

```
 - attr(*, "heading")= chr [1:2] "Analysis of Variance Table\n" "Response:  
airquality$Wind"
```

> #ex1.13(b)

```
> lm.summary <- summary(lm.obj)
```

```
> attributes(lm.summary)
```

```
$names
```

```
[1] "call"
```

```
[2] "terms"
```

```
[3] "residuals"
```

```
[4] "coefficients"
```

```
[5] "aliased"
```

```
[6] "sigma"
```

```
[7] "df"
```

```
[8] "r.squared"
```

```
[9] "adj.r.squared"
```

```
[10] "fstatistic"
```

```
[11] "cov.unscaled"
```

```
$class
```

```
[1] "summary.lm"
```

```
> lm.summary$r.squared
```

```
[1] 0.2097529
```

> #ex1.33(a)

```
> Dates <- c("180924", "181112", "181231", "181105", "180604",  
"180219", "180416", "180611", "180813", "181029")
```

```
> Time <- c("01:00", "04:00", "16:00", "23:00", "08:00", "09:00",  
"07:00", "17:00", "03:00", "14:00")
```

```
> g <- paste(Dates, Time)
```

```
> DateTime <- as.POSIXct(strptime(g, format = "%y%m%d %H%M"))
```

```
> class(DateTime)
```

```
[1] "POSIXct" "POSIXt"
```

```
> Items <- as.factor( c("shirt", "shirt", "pants", "jacket", "jacket", "shirt",  
"jacket", "jacket", "shoes", "shirt"))
```

```
> class(Items)
```

```
[1] "factor"
```

```
> Volume <- c("7951", "159", "1958", "6848", "3762", "3678", "8696",  
"9045", "6208", "1425")
```

```
> class(Volume)
```

```
[1] "character"
```

```
> mySale <- data.frame(DateTime, Items, Volume)
```

```
> print(mySale)
```

	DateTime	Items	Volume
1	<NA>	shirt	7951
2	<NA>	shirt	159
3	<NA>	pants	1958
4	<NA>	jacket	6848
5	<NA>	jacket	3762
6	<NA>	shirt	3678
7	<NA>	jacket	8696
8	<NA>	jacket	9045
9	<NA>	shoes	6208

10 <NA> shirt 1425

> #ex1.33(b)

> Items[Dates >= "180700"]

[1] shirt shirt pants jacket shoes

[6] shirt

Levels: jacket pants shirt shoes