Multivariate Analysis for the Behavioral Sciences, Second Edition (Chapman and Hall/CRC, 2019)

Exercises of Chapter 8: Analysis of Longitudinal Data I: Graphical Displays and Summary Measure Approach

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Exercises

Exercise 8.1

See Table 8.2 in the book and use the BPRS data, modifying the related R code given in the **Examples of Chapter 8**.

Exercise 8.2

Use the PAIN data, modifying the related R code given in the **Examples of Chapter 8**.

Exercise 8.3

Use the skin resistance data (see below) and modify the R codes given in the **Examples of Chapter 8** to create suitable graphics and to analyse the data.

```
library(tidyr); library(dplyr); library(ggplot2)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
SKIN <- read.table("data/skin.txt", header = TRUE, sep = "\t")

glimpse(SKIN)
```

```
## Observations: 16
## Variables: 6
## $ subject <int> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
## $ type1   <int> 500, 660, 250, 135, 27, 100, 105, 90, 200, 15, 160, 25...
## $ type2   <int> 400, 600, 370, 300, 84, 50, 180, 180, 290, 45, 200, 40...
```

```
## $ type3   <int> 98, 600, 220, 450, 135, 82, 32, 220, 320, 75, 300, 50,...
## $ type4   <int> 200, 75, 250, 430, 190, 73, 58, 34, 280, 88, 300, 50, ...
## $ type5   <int> 250, 310, 220, 70, 180, 78, 32, 64, 135, 80, 220, 92, ...
```

```
SKIN
```

```
##    subject type1 type2 type3 type4 type5
## 1        1   500   400    98   200   250
## 2        2   660   600   600    75   310
## 3        3   250   370   220   250   220
## 4        4   135   300   450   430    70
## 5        5    27    84   135   190   180
## 6        6   100    50    82    73    78
## 7        7   105   180    32    58    32
## 8        8    90   180   220    34    64
## 9        9   200   290   320   280   135
## 10      10    15    45    75    88    80
## 11      11   160   200   300   300   220
## 12      12   250   400    50    50    92
## 13      13   170   310   230    20   150
## 14      14    66  1000  1050   280   220
## 15      15   107    48    26    45    51
## 16      16   100    80   230   280   150
```