1. **Cattle**

Kenward (1987) reported an experiment in which cattle were assigned randomly to two treatment groups A and B, and their body weights were recorded in kilogram. Thirty animals received treatment A and another 30 received treatment B. The animals were weighted 11 times over a 133-day period; the first 10 measurements for each animal were made at two-week intervals and the last measurement was made one week later. Since no observation was missing, it is considered to be a balanced longitudinal dataset.

1. **Cattle.txt**

**(R code)**

library(nlme)

cattle = read.table("cattle.txt")

cattle.data = data.frame(cattle)

Y = cattle.data[, 2:12]

weight = matrix(t(Y), ncol = 1)

subject = matrix(rep(1:60, each = 11), ncol = 1)

treatment = factor(rep(c("A", "B"), each = 330))

treatment = relevel(treatment, ref = "B")

days.large = rep(c(0, 14, 28, 42, 56, 70, 84, 98, 112, 126, 133), 60)

time1 = poly(days.large, 3)[, 1]

time2 = poly(days.large, 3)[, 2]

time3 = poly(days.large, 3)[, 3]

cattledata =data.frame(subject,weight,treatment,days.large,time1,time2,time3)

cattledata[1:10, ]

A number and numbers on a white background

Description automatically generated

1. **cattle.rda**

\item id: subject id

\item day: measurement time

\item group: Treatment A or Treatment B

\item weight: cattle weight

1. **aids.rda**

The aids dataset comprises a total of 2376 CD4+ cell counts for 369 HIV infected men with a follow up period of approximately eight and half year. The number of measurements for each individual varies from 1 to 12 and the times are not equally spaced. The CD4+ cell data are highly unbalanced.

\item id: subject id

\item time: measurement time

\item cd4: CD4+ cell count

1. **orthodontic data.txt**
2. **anorexia.txt**
3. Investment Data between 01/10/2012- 30/09/2016

**AVL.csv; BAL.csv; NGL.csv; UUL.csv; AVL.csv**

Open, High, Low, Close, Volume and Adj Close of four investment products (AV.L; BA.L; NG.L; UU.L)

1. Six Company Stock

Log return of 6 companys(IPfizer, Intel, Citigroup, AmerExp, Exxon and GenMotor) between 01.08.2000 and 01.11.2005.

**d-logret-6stocks.txt; d-logret-6stocks.xlsx**