Package 'KMsurv'

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Title Data sets from Klein and Moeschberger (1997), Survival Analysis

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Description Data sets and functions for Klein and Moeschberger (1997), ``Survival Analysis, Techniques for Censored and Truncated Data", Springer.

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Contents

`aids` *data from Section 1.19*

Description

The `aids` data frame has 295 rows and 3 columns.

Format

This data frame contains the following columns:

infect Infection time for AIDS, years

induct Induction time for AIDS, years

adult Indicator of adult (1=adult, 0=child)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Lagakos et al. Biometrika 68 (1981): 515-523.

Examples

```
data(aids)
```

alloauto *data from Section 1.9*

Description

The alloauto data frame has 90 rows and 5 columns.

Format

This data frame contains the following columns:

time Time to death or relapse, months

type Type of transplant (1=allogeneic, 2=autologous)

delta Leukemia-free survival indicator (0=alive without relapse, 1=dead or relapse)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Kardaun Stat. Nederlandica 37 (1983), 103-126.

Examples

```
data(alloauto)
```

allograft *data from Exercise 13.1, p418*

Description

The allograft data frame has 34 rows and 4 columns.

Format

This data frame contains the following columns:

patient Patient

time Time to graft rejection, days

rejection Indicator of graft rejection (1=yes, 0=no)

match Good HLA skin match (1=yes, 0=no)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Batchelor and Hackett Lancet 2 (1970): 581-583.

Examples

```
data(allograft)
```

azt *data from Exercise 4.7, p122*

Description

The azt data frame has 45 rows and 4 columns.

Format

This data frame contains the following columns:

patient Patient number

ageentry Age at entry into AZT study, months

age Age at death or censoring time, months

death Death indicator (1=dead, 0=alive)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(azt)
```

baboon *data from Exercise 5.8, p147*

Description

The baboon data frame has 25 rows and 2 columns.

Format

This data frame contains the following columns:

date Date (day/month/year)

time Descent time (military time)

observed Indicator of observed or not (1=observed, 0=not observed)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(baboon)
```

bcdeter *data from Section 1.18*

Description

The bcdeter data frame has 92 rows and 3 columns.

Format

This data frame contains the following columns:

lower Lower limit of interval, months

upper Upper limit of interval, months

treat Treatment regimen (1=radiotherapy only, 2=radiotherapy + chemotherapy)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Beadle et al Cancer 54 (1984):2911-2918.

Examples

```
data(bcdeter)
```

bfeed *data from Section 1.14*

Description

The bfeed data frame has 927 rows and 10 columns.

Format

This data frame contains the following columns:

duration Duration of breast feeding, weeks

delta Indicator of completed breast feeding (1=yes, 0=no)

race Race of mother (1=white, 2=black, 3=other)

poverty Mother in poverty (1=yes, 0=no)

smoke Mother smoked at birth of child (1=yes, 0=no)

alcohol Mother used alcohol at birth of child (1=yes, 0=no)

agemth Age of mother at birth of child

ybirth Year of birth

yschool Education level of mother (years of school)

pc3mth Prenatal care after 3rd month (1=yes, 0=no)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. *National Longitudinal Survey of Youth Handbook* The Ohio State University, 1995.

Examples

```
data(bfeed)
```

`bmt` *data from Section 1.3*

Description

The `bmt` data frame has 137 rows and 22 columns.

Format

This data frame contains the following columns:

group Disease Group 1-ALL, 2-AML Low Risk, 3-AML High Risk

t1 Time To Death Or On Study Time

t2 Disease Free Survival Time (Time To Relapse, Death Or End Of Study)

d1 Death Indicator 1-Dead 0-Alive

d2 Relapse Indicator 1-Relapsed, 0-Disease Free

d3 Disease Free Survival Indicator 1-Dead Or Relapsed, 0-Alive Disease Free)

ta Time To Acute Graft-Versus-Host Disease

da Acute GVHD Indicator 1-Developed Acute GVHD 0-Never Developed Acute GVHD)

tc Time To Chronic Graft-Versus-Host Disease

dc Chronic GVHD Indicator 1-Developed Chronic GVHD 0-Never Developed Chronic GVHD

tp Time To Chronic Graft-Versus-Host Disease

dp Platelet Recovery Indicator 1-Platelets Returned To Normal, 0-Platelets Never Returned to Normal

z1 Patient Age In Years

z2 Donor Age In Years

z3 Patient Sex: 1-Male, 0-Female

z4 Donor Sex: 1-Male, 0-Female

z5 Patient CMV Status: 1-CMV Positive, 0-CMV Negative

z6 Donor CMV Status: 1-CMV Positive, 0-CMV Negative

z7 Waiting Time to Transplant In Days

z8 FAB: 1-FAB Grade 4 Or 5 and AML, 0-Otherwise

z9 Hospital: 1-The Ohio State University, 2-Alferd , 3-St. Vincent, 4-Hahnemann

z10 MTX Used as a Graft-Versus-Host- Prophylactic: 1-Yes 0-No

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(bmt)
```

`bnct` *data from Exercise 7.7, p223*

Description

The `bnct` data frame has 34 rows and 3 columns.

Format

This data frame contains the following columns:

trt Treatment (1=untreated, 2=radiated, 3=radiated + BPA)

time Death time or on-study time, days

death Death indicator (1=dead, 0=alive)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(bnct)
```

`btrial` *data from Section 1.5*

Description

The `btrial` data frame has 45 rows and 3 columns.

Format

This data frame contains the following columns:

time Time to death or on-study time, months

death Death indicator (0=alive, 1=dead)

im Immunohistochemical response (1=negative, 2=positive)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Sedmak el al. Modern Pathology 2 (1989): 516-520.

Examples

```
data(btrial)
```

`burn` *data from Section 1.6*

Description

The `burn` data frame has 154 rows and 17 columns.

Format

This data frame contains the following columns:

Obs Observation number
Z1 Treatment: 0-routine bathing 1-Body cleansing
Z2 Gender (0=male 1=female)
Z3 Race: 0=nonwhite 1=white
Z4 Percentage of total surface area burned
Z5 Burn site indicator: head 1=yes, 0=no
Z6 Burn site indicator: buttock 1=yes, 0=no
Z7 Burn site indicator: trunk 1=yes, 0=no
Z8 Burn site indicator: upper leg 1=yes, 0=no
Z9 Burn site indicator: lower leg 1=yes, 0=no
Z10 Burn site indicator: respiratory tract 1=yes, 0=no
Z11 Type of burn: 1=chemical, 2=scald, 3=electric, 4=flame
T1 Time to excision or on study time
D1 Excision indicator: 1=yes 0=no
T2 Time to prophylactic antibiotic treatment or on study time
D2 Prophylactic antibiotic treatment: 1=yes 0=no
T3 Time to straphylocous aureaus infection or on study time
D3 Straphylocous aureaus infection: 1=yes 0=no

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Ichida et al. Stat. Med. 12 (1993): 301-310.

Examples

```
data(burn)
```

channing *data from Section 1.16*

Description

The channing data frame has 462 rows and 6 columns.

Format

This data frame contains the following columns:

obs Observation number

death Death status (1=dead, 0=alive)

ageentry Age of entry into retirement home, months

age Age of death or left retirement home, months

time Difference between the above two ages, months

gender Gender (1=male, 2=female)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Hyde Biometrika (1977), 225-230.

Examples

```
data(channing)
```

drug6mp *data from Section 1.2*

Description

The drug6mp data frame has 21 rows and 5 columns.

Format

This data frame contains the following columns:

pair pair number

remstat Remission status at randomization (1=partial, 2=complete)

t1 Time to relapse for placebo patients, months

t2 Time to relapse for 6-MP patients, months

relapse Relapse indicator (0=censored, 1=relapse) for 6-MP patients

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Freireich et al. (1963) *Blood* 21: 699-716.

Examples

```
data(drug6mp)
```

---

drughiv *data from Exercise 7.6, p222*

Description

The drughiv data frame has 34 rows and 3 columns.

Format

This data frame contains the following columns:

drug Drug combination (1=AZT + zalcitabine, 2=AZT + zalcitabine + saquinavir)

time Time after drug administration to CD4 count at a specified level, days

delta Indicator of CD4 count reaching specified level (1=yes, 0=no)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(drughiv)
```

---

hodg *data from Section 1.10*

Description

The hodg data frame has 43 rows and 6 columns.

Format

This data frame contains the following columns:

gtype Graft type (1=allogenic, 2=autologous)

dtype Disease type (1=Non Hodgkin lymphoma, 2=Hodgkins disease)

time Time to death or relapse, days

delta Death/relapse indicator (0=alive, 1=dead)

score Karnofsky score

wtime Waiting time to transplant in months

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Avalos et al. Bone Marrow Transplantation 13(1993):133-138.

Examples

```
data(hodg)
```

---

kidney *data from Section 1.4*

Description

The kidney data frame has 119 rows and 3 columns.

Format

This data frame contains the following columns:

time Time to infection, months

delta Infection indicator (0=no, 1=yes)

type Catheter placement (1=surgically, 2=percutaneously)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Nahman el at. J. Am Soc. Nephrology 3 (1992): 103-107.

Examples

```
data(kidney)
```

kidrecurr *Data on 38 individuals using a kidney dialysis machine*

Description

Data on 38 individuals using a kidney dialysis machine See Problem 13.5.2

Usage

```
data(kidrecurr)
```

Format

A data frame with 38 observations on the following 10 variables.

patient Patient number

time1 Time one of recurrence of infection, days

infect1 Indicator infection one (1=yes, 0=no)

time2 Time two of recurrence of infection, days

infect2 Indicator infection two (1=yes, 0=no)

age Patient's age

gender Patient's gender

gn Disease type GN (1=yes, 0=no)

an Disease type AN (1=yes, 0=no)

pkd Disease type PKD (1=yes, 0=no)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. McGilchrist and Aisbett 47 (1991):461-466.

Examples

```
data(kidrecurr)
```

kidtran *data from Section 1.7*

Description

The kidtran data frame has 863 rows and 6 columns.

Format

This data frame contains the following columns:

obs Observation number

time Time to death or on-study time

delta Death indicator (0=alive, 1=dead)

gender 1=male, 2=female

race 1=white, 2=black

age Age in years

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(kidtran)
```

larynx *data from Section 1.8*

Description

The larynx data frame has 90 rows and 5 columns.

Format

This data frame contains the following columns:

stage Stage of disease (1=stage 1, 2=stage2, 3=stage 3, 4=stage 4)

time Time to death or on-study time, months

age Age at diagnosis of larynx cancer

diagyr Year of diagnosis of larynx cancer

delta Death indicator (0=alive, 1=dead)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Kardaun Stat. Nederlandica 37 (1983), 103-126.

Examples

```
data(larynx)
```

`lifetab` *Create cohort life table*

Description

Create cohort life table.

Usage

```
lifetab(tis, ninit, nlost, nevent)
```

Arguments

`tis`	a vector of end points of time intervals, whose length is 1 greater than nlost and nevent.
`ninit`	the number of subjects initially entering the study.
`nlost`	a vector of the number of individuals lost follow or withdrawn alive for whatever reason.
`nevent`	a vector of the number of individuals who experienced the event

Value

A data.frame with the following columns:

`nsubs`	the number of subject entering the intervals who have not experienced the event.
`nlost`	the number of individuals lost follow or withdrawn alive for whatever reason.
`nrisk`	the estimated number of individuals at risk of experiencing the event.
`nevent`	the number of individuals who experienced the event.
`surv`	the estimated survival function at the start of the intervals.
`pdf`	the estimated probability density function at the midpoint of the intervals.
`hazard`	the estimated hazard rate at the midpoint of the intervals.
`se.surv`	the estimated standard deviation of survival at the beginning of the intervals.
`se.pdf`	the estimated standard deviation of the prbability density function at the midpoint of the intervals.
`se.hazard`	the estimated standard deviation of the hazard function at the midpoint of the intervals

The row.names are the intervals.

Author(s)

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Examples

```
tis <- c(0, 2, 3, 5, 7, 11, 17, 25, 37, 53, NA)
nsubs <- c(927, 848, 774, 649, 565, 449, 296, 186, 112, 27)
nlost <- c(2, 3, 6, 9, 7, 5, 3, rep(0, 3))
nevent <- c(77, 71, 119, 75, 109, 148, 107, 74, 85, 27)

lifetab(tis, nsubs[1], nlost, nevent)
```

---

lung *data from Exercise 4.4, p120*

Description

The lung data frame has 25 rows and 4 columns.

Format

This data frame contains the following columns:

time Days to death

death Death indicator (1=dead), complete follow-up on all patients

time2 Days to 3/31/80 or death (interim analysis)

death2 Death indicator as of 3/31/80 (1=dead, 0=alive)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(lung)
```

pneumon *data from Section 1.13*

Description

The pneumon data frame has 3470 rows and 15 columns.

Format

This data frame contains the following columns:

chldage Age child had pneumonia, months

hospital Indicator for hospitalization for pneumonia (1=yes, 0=no)

mthage Age of the mother, years

urban Urban environment for mother (1=yes, 0=no)

alcohol Alcohol use by mother during pregnancy (1=yes, 0=no)

smoke Cigarette use by mother during pregnancy (1=yes, 0=no)

region Region of the coutry (1=northeast, 2=north central, 3=south, 4=west)

poverty Mother at poverty level (1=yes, 0=no)

bweight Normal birthweight (>5.5 lbs.) (1=yes, 0=no)

race Race of the mother (1=white, 2=black, 3=other)

education Education of the mother, years of school

nsibs Number of siblings of the child

wmonth Month the child was weaned

sfmonth Month the child on solid food

agepn Age child in the hospital for pneumonia, months

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. *National Longitudinal Survey of Youth Handbook* The Ohio State University, 1995.

Examples

```
data(pneumon)
```

psych *data from Section 1.15*

Description

The psych data frame has 927 rows and 10 columns.

Format

This data frame contains the following columns:

sex Patient sex (1=male, 2=female)

age Patient age

time Time to death or on-study time

death Death indicator (0=alive, 1=dead)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Woolsen Biometrics 37 (1981): 687-696.

Examples

```
data(psych)
```

rats *data from Exercise 7.13, p225*

Description

The rats data frame has 50 rows and 4 columns.

Format

This data frame contains the following columns:

time Time to tumor development

tumor Indicator of tumor development (1=yes, 0=no)

trt Treatment (1=treated with drug, 0=given placebo)

litter Litter

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(rats)
```

`std` *data from Section 1.12*

Description

The `std` data frame has 877 rows and 3 columns.

Format

This data frame contains the following columns:

obs Observation number

race Race (W=white, B=black)

marital Marital status (D=divorced / separated, M=married, S=single)

age AGE

yschool Years of schooling

iinfct Initial infection (1= gonorrhea, 2=chlamydia, 3=both)

npartner Number of partners

os12m Oral sex within 12 months (1=yes, 0=no)

os30d Oral sex within 30 days (1=yes, 0=no)

rs12m Rectal sex within 12 months (1=yes, 0=no)

rs30d Rectal sex within 30 days (1=yes, 0=no)

abdpain Presence of abdominal pain (1=yes, 0=no)

discharge Sign of discharge (1=yes, 0=no)

dysuria Sign of dysuria (1=yes, 0=no)

condom Condom use (1=always, 2=sometime, 3=never)

itch Sign of itch (1=yes, 0=no)

lesion Sign of lesion (1=yes, 0=no)

rash Sign of rash (1=yes, 0=no)

lymph Sign of lymph (1=yes, 0=no)

vagina Involvement vagina at exam (1=yes, 0=no)

dchexam Discharge at exam (1=yes, 0=no)

abnode Abnormal node at exam (1=yes, 0=no)

rinfct Reinfection (1=yes, 0=no)

time Time to reinfection

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(std)
```

`stddiag` *data from Exercise 5.6, p146*

Description

The `stddiag` data frame has 25 rows and 2 columns.

Format

This data frame contains the following columns:

encounter Months from 1/93 to encounter

diagnosed Months until STD diagnosed in the clinic

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(stddiag)
```

`tongue` *data from Section 1.11*

Description

The `tongue` data frame has 80 rows and 3 columns.

Format

This data frame contains the following columns:

type Tumor DNA profile (1=Aneuploid Tumor, 2=Diploid Tumor)

time Time to death or on-study time, weeks

delta Death indicator (0=alive, 1=dead)

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer. Sickle-Santanello et al. Cytometry 9 (1988): 594-599.

Examples

```
data(tongue)
```

`twins` *data from Exercise 7.14, p225*

Description

The `twins` data frame has 24 rows and 3 columns.

Format

This data frame contains the following columns:

id Twin number

age Age of twin's death from CHD, months

death Death (male twin) from CHD indicator (1=dead from CHD, 0=alive or other cause of death)

gender 1=male, 2=female

Source

Klein and Moeschberger (1997) *Survival Analysis Techniques for Censored and truncated data*, Springer.

Examples

```
data(twins)
```

Index