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Description Contains the data sets for the textbook ``Mathematical Modeling and Applied Calculus'' by Joel Kilty and Alex M. McAllister. The book will be published by Oxford University Press in 2018 with ISBN-13: 978-019882472.

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R topics documented:

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AAPLStockMonthly   *Closing Stock Price of Apple Inc.*

Description

A dataset containing the closing price of Apple Inc. Stock, from January 1981 to December 2014

Usage

```
data(AAPLStockMonthly)
```

Format

A data frame with 409 observations on the following variables.

- `Month` months since January 1981
- `AdjClose` adjusted closing price of Apple Inc. stock

Details

closing price of Apple Inc. stock in U.S. dollars adjusted for dividends and splits at the beginning of each month from January 1981 (month 1) through December 2014 (month 408)

Source

Yahoo Finance

References

http://finance.yahoo.com/q/hp?s=AAPL&a=11&b=12&c=1980&d=06&e=2&f=2014&g=m

Examples

```
data(APPLStockMontly)
```

APCalculus   *Number of Students taking the AP Calculus Exam*

Description

A dataset containing the number of students who have taken the AP Calculus exam from 1955 to 2015.

Usage

```
data(APCalculus)
```

Format

A data frame with 61 observations on the following variables.

- Year year
- Exams number of AP exams taken in associated year

Details

The number of AP exams taken in the given year, with data from 1955 to 2015.

Source

Personal correspondence with Stephen M. Kokoska.

Examples

```
data(APCalculus)
```

APCalculus2   *Number of Students taking the AP Calculus Exam*

Description

A subset of the dataset APCalculus containing the number of students who have taken the AP Calculus exam from 1955 to 2015.

Usage

```
data(APCalculus2)
```

Format

A data frame with 38 observations on the following variables.

- `Year` year
- `Exams` number of AP exams taken in associated year

Details

A subset of the MMAC dataset APCalculus containing only the data from 1973 to 2010.

Source

Personal correspondence with Stephen M. Kokoska.

Examples

```
data(APCalculus2)
```

BlastData   *Blast Radius of Trinity Test*

Description

A dataset containing the blast radius (in meters) as a function of time (in seconds) for the Trinity test conducted by the United States in White Sands, New Mexico in 1945.

Usage

```
data(BlastData)
```

Format

A data frame with 23 observations on the following variables.

- `X` observation number
- `time` time in seconds
- `radius` radius of blast in meters

Details

A dataset containing the blast radius (in meters) as a function of time (in seconds) for the Trinity test conducted by the United States in White Sands, New Mexico in 1945.

Source

Taylor, G. "The Formation of a Blast Wave by a Very Intense Explosion. II. The Atomic Explosion of 1945." *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 1950, 201: 175–86.

Examples

```
data(BlastData)
```

BodyMassMetabolicRate   *Closing Stock Price of Apple Inc.*

Description

A dataset containing the field metablic rate of individual birds and mammals (measured in kilojoules per day) as a function of its body mass (in kilograms)

Usage

```
data(BodyMassMetabolicRate)
```

Format

A data frame with 1498 observations on the following variables.

- `Mass` in kilograms
- `Rate` field metabolic rate in kilojoules per day

Details

This dataset contains the field metablic rate of individual birds and mammals (measured in kilojoules per day) as a function of its body mass (in kilograms)

Source

Hudson, L. N., Isaac, N. J. B., Reuman, D. C. (2013), The relationship between body mass and field metabolic rate among individual birds and mammals. *Journal of Ecology*, 82: 1009-1020. doi: 10.1111/1365-2656.12086.

References

http://onlinelibrary.wiley.com/doi/10.1111/1365-2656.12086/suppinfo

Examples

```
data(BodyMassMetabolicRate)
```

DJIACloseQuarterly   *Quarterly Closing Value of Dow Jones Industrial Average*

Description

A dataset containing the quarterly closing value of the Dow Jones Industrial Average (DJIA) from March 31, 1935 to December 31, 2014.

Usage

```
data(DJIACloseQuarterly)
```

Format

A data frame with 320 observations on the following variables.

- `Quarter` since March 31, 1935
- `Close` Closing value of DJIA

Details

This dataset contains the quarterly closing value of the Dow Jones Industrial Average (DJIA) from March 31, 1935 to December 31, 2014.

Source

Closing stock market value of the Dow Jones Industrial Average at the end of each quarter from March 31, 1930 through December 31, 2014 from "^DJI — Nasdaq Composite — U.S. — Stooq." Accessed on July 7, 2015.

References

http://stooq.com/q/d/?s=^dji

Examples

```
data(DJIACloseQuarterly)
```

EbolaSierraLeone   *Ebola Cases in Sierra Leone, Africa*

Description

A dataset containing the cummulative number of ebola cases in Sierra Leone, Africa from May 1, 2014 to December 16, 2015

Usage

```
data(EbolaSierraLeone)
```

Format

A data frame with 110 observations on the following variables.

- Day since May 1, 2014
- Cases cummulative number of ebola cases

Details

This dataset contains the cummulative number of ebola cases in Sierra Leone, Africa from May 1, 2014 to December 16, 2015

Source

Ebola Outbreak in West Africa from Centers for Disease Control and Preven- tion. Accessed on June 2, 2016.

References

http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/cumulative-cases-graphs.html

Examples

```
data(EbolaSierraLeone)
```

```
ElectricBill            Electric Bill
```

Description

A dataset containing the electric bill (in US dollars) of a single-family home in Minnesota from 2000-2003

Usage

```
data(ElectricBill)
```

Format

A data frame with 37 observations on the following variables.

- `Month` since January 2000
- `ElecBill` price of ElecBill in US dollars

Details

This dataset contains the the electric bill (in US dollars) of a single-family home in Minnesota from 2000-2003 as a function of the month.

Source

Subset of Utilities in the `mosaic` package.

Examples

```
data(ElectricBill)
```

```
ElectronicMailOrderSales
                    US Electronic and Mail Order Sales
```

Description

A dataset containing the he total U.S. electronic and mail-order shopping sales in billions of dollars each year from 1999 to 2012.

Usage

```
data(ElectronicMailOrderSales)
```

Format

A data frame with 14 observations on the following variables.

- `Year`
- `Sales` in billions of US dollars

Details

This dataset contains the he total U.S. electronic and mail-order shopping sales in billions of dollars each year from 1999 to 2012

Source

Total U.S. electronic and mail-order shopping sales in millions of dollars each year from 1999 to 2012 from "Monthly & Annual Retail Trade, Main Page — US Census Bureau." Accessed on July 16, 2014.

Examples

```
data(ElectronicMailOrderSales)
```

EngineRPM   *RPM of Different Engines*

Description

A dataset containing the revolutions per minute (RPM) and mass of different engines.

Usage

```
data(EngineRPM)
```

Format

A data frame with 39 observations on the following variables.

- `Mass` in kilograms
- `RPM`

Details

This dataset contains the revolutions per minute (RPM) and mass of different engines.

Source

Revolutions per minute of engines as a function of engine mass from pages 60-61. McMahon, Thomas A., and John Tyler Bonner. *On Size and Life*. New York: Scientific American Library, 1983.

Examples

```
data(EngineRPM)
```

FacebookUsers   *Facebook Users*

Description

A dataset containing the number of Facebook users in millions of people from 2009 through 2012.

Usage

```
data(FacebookUsers)
```

Format

A data frame with 38 observations on the following variables.

- Months since January 2009
- Users in millions of people

Details

This dataset contains the number of Facebook users in millions of people from 2009 through 2012.

Source

Number of Facebook users in millions from 2009 through 2012 from "Number of active users at Facebook over the years — Yahoo News" and "Facebook: number of active users 2015 | Statistics." Accessed on June 22, 2015.

References

http://news.yahoo.com/number-active-users-facebook-over-230449748.html http://www.statista.com/statistics/264810/numb of-monthly-active-facebook-users-worldwide/

Examples

```
data(FacebookUsers)
```

FordMarketVolume1   *Ford Motors Market Volume*

Description

A subset of the dataset containing the volume of Ford Motor Company stock shares traded per quarter since January 1, 2007.

Usage

```
data(FordMarketVolume1)
```

Format

A data frame with 7 observations on the following variables.

  - Date quarter since January 1, 2007
  - Volume number of shares of Ford Motor Company stock shares

Details

This dataset contains the volume of Ford Motor Company stock shares traded per quarter since January 1, 2007.

Source

Ford Motor Company (F) stock market value quarterly in U.S. dollars. Accessed on July 7, 2014

References

http://stooq.com/q/d/?s=f.us

Examples

```
data(FordMarketVolume1)
```

FordMarketVolume2   *Ford Motors Market Volume*

Description

A dataset containing the volume of Ford Motor Company stock shares traded per quarter since January 1, 2007.

Usage

```
data(FordMarketVolume2)
```

Format

A data frame with 20 observations on the following variables.

- `Date` quarter since January 1, 2007
- `Volume` number of shares of Ford Motor Company stock shares

Details

This dataset contains the volume of Ford Motor Company stock shares traded per quarter since January 1, 2007.

Source

Ford Motor Company (F) stock market value quarterly in U.S. dollars. Accessed on July 7, 2014

References

http://stooq.com/q/d/?s=f.us

Examples

```
data(FordMarketVolume1)
```

GenderRatio1	*Gender Ratio in World Population*

Description

A subset of the dataset containing the number of males per 100 females in the word population.

Usage

```
data(GenderRatio1)
```

Format

A data frame with 9 observations on the following variables.

- Year
- Ratio number of males per 100 females

Details

This dataset contains the number of males per 100 females in the world population as a function of the year

Source

The global gender ratio based on the number of males per 100 females by year from "World Population Prospects, the 2012 Revision" by the United Nations Department of Economic and Social Affairs. Accessed on June 25, 2014.

References

http://esa.un.org/unpd/wpp/Excel-Data/population.htm

Examples

```
data(GenderRatio1)
```

GenderRatio2   *Gender Ratio in World Population*

Description

A dataset containing the number of males per 100 females in the word population.

Usage

```
data(GenderRatio2)
```

Format

A data frame with 14 observations on the following variables.

- `Year`
- `Ratio` number of males per 100 females

Details

This dataset contains the number of males per 100 females in the world population as a function of the year

Source

The global gender ratio based on the number of males per 100 females by year from "World Population Prospects, the 2012 Revision" by the United Nations Department of Economic and Social Affairs. Accessed on June 25, 2014.

References

http://esa.un.org/unpd/wpp/Excel-Data/population.htm

Examples

```
data(GenderRatio2)
```

Hawaii	*Tidal Depths in Pearl Harbor, Hawaii*

Description

A dataset containing the depth of the tide in feet relative to the MLLW (mean lower low water mark) in Pearl Harbor, Hawaii as a function of time measured in hours Hr.

Usage

```
data(Hawaii)
```

Format

A data frame with 31 observations on the following variables.

- `time` in hours
- `water` tide depth in feet relative to the MLLW

Details

This dataset contains the depth of the tide in feet relative to the MLLW (mean lower low water mark) in Pearl Harbor, Hawaii as a function of time measured in hours Hr.

Source

Tidal measurements in Pearl Harbor, Hawaii based on data sets from Project Mosaic. Accessed on August 19, 2015.

References

http://www.mosaic-web.org

Examples

```
data(Hawaii)
```

HealthExpenditure   *Health Expenditures as a Percentage of U.S. GDP*

Description

A dataset containing the World Bank's data for total U.S. health expenditures as a percentage of the U.S gross domestic product (GDP) from 1995 to 2012.

Usage

```
data(HealthExpenditure)
```

Format

A data frame with 18 observations on the following variables.

- `Year`
- `PercentGDP` health expenditures as a function of U.S. GDP

Details

This dataset contains the World Bank's data for total U.S. health expenditures as a percentage of the U.S gross domestic product (GDP) from 1995 to 2012.

Source

Total U.S. health expenditures as a percentage of GDP from the World Bank. Accessed on July 10, 2014.

References

http://data.worldbank.org/country/united-states

Examples

```
data(HealthExpenditure)
```

HispanicPopulation   *Latino's Living in the United States*

Description

A dataset containing the number of Latino's living in the United States as a function of the year.

Usage

```
data(HispanicPopulation)
```

Format

A data frame with 5 observations on the following variables.

- Year
- People number of Latino's (in millions)

Details

This dataset contains the number of Latino's living in the United States as a function of the year.

Source

The U.S. Hispanic population has increased sixfold since 1970. Accessed on June 16, 2014.

References

http://www.pewresearch.org/fact-tank/2014/02/26/the-u-s-hispanic-population-has-increased-sixfold-since-1970/

Examples

```
data(HispanicPopulation)
```

HSDropoutRate   *High School Dropout Rate*

Description

A dataset containing the high school dropout rate in the United States from 1970 through 2012.

Usage

```
data(HSDropoutRate)
```

Format

A data frame with 43 observations on the following variables.

- Year
- Rate high school dropout rate

Details

This dataset contains the high school dropout rate in the United States from 1970 through 2012.

Source

The high school dropout rate in the United States from 1970 through 2012 from "Percentage of high school dropouts among persons 16 to 24 years old." Accessed on June 22, 2015.

References

http://nces.ed.gov/programs/digest/d13/tables/dt13 219.70.asp

Examples

```
data(HSDropoutRate)
```

HSGradsInCollege   *High School Graduates in College*

Description

A dataset containing the percent of each year's high school graduates to enroll in either a two-year or four-year college from 1972 to 2012.

Usage

```
data(HSGradsInCollege)
```

Format

A data frame with 41 observations on the following variables.

- Year
- Percent of high schol graduates

Details

This dataset contains the percent of each year's high school graduates to enroll in either a two-year or four-year college from 1972 to 2012

Source

Percent of high school graduates to enroll in a two-year or four-year college from National Center for Education Statistics. Accessed on July 2, 2014.

References

http://nces.ed.gov/programs/digest/d13/tables/dt13302.10.asp

Examples

```
data(HSGradsInCollege)
```

```
LifeExpectancyPhysicians
```
Life Expectancy in Different Countries

Description

A dataset containing the number of physicians per 1000 people as a function of average life expectancy in different countries in 2010.

Usage

```
data(LifeExpectancyPhysicians)
```

Format

A data frame with 175 observations on the following variables.

- `LifeExpectancy` life expectancy in years
- `Physicians` number of physicians per 1000 people

Details

This dataset contains the number of physicians per 1000 people as a function of average life expectancy in different countries in 2010.

Source

Number of physicians per 1000 people as a function of average life expectancy in different countries in 2010 from "Physicians (per 1,000 people) | Data | Table."

References

http://data.worldbank.org/indicator/SH.MED.PHYS.ZS

Examples

```
data(LifeExpectancyPhysicians)
```

MaunaLoaCO2   *Atmospheric Carbon Dioxide from Mauna Loa*

Description

A dataset containing the atmospheric carbon dioxide from Mauna Loa in ppmv (or parts per million by volume) as a function of years from 1958 to 2008.

Usage

```
data(MaunaLoaCO2)
```

Format

A data frame with 49 observations on the following variables.

- Year
- Average carbon dioxide in ppmv

Details

This dataset contains the atmospheric carbon dioxide from Mauna Loa in ppmv (or parts per million by volume) as a function of years from 1958 to 2008.

Source

Atmospheric carbon dioxide from Mauna Loa in ppmv (parts per million by volume) as a function of years from 1958 to 2008 from "Atmospheric Carbon Dioxide Record from Mauna Loa." Accessed on August 19, 2015.

References

http://cdiac.ornl.gov/trends/co2/sio-mlo.html

Examples

```
data(MaunaLoaCO2)
```

McDBurgers1	*Burgers Sold by McDonalds*

Description

A subset of the dataset containing the number of burgers (in billions) sold by McDonald's since 1955.

Usage

```
data(McDBurgers1)
```

Format

A data frame with 5 observations on the following variables.

- Year
- Burgers number of burgers (in billions)

Details

This dataset contains the number of burgers (in billions) sold by McDonald's since 1955.

Source

The total number of burgers sold by McDonald's in billions as of each year from "Over How Many Billion Served." Accessed on July 3, 2014.

References

http://overhowmanybillionserved.blogspot.com/

Examples

```
data(McDBurgers1)
```

McDBurgers2 *Burgers Sold by McDonalds*

Description

A dataset containing the number of burgers (in billions) sold by McDonald's since 1955.

Usage

```
data(McDBurgers2)
```

Format

A data frame with 11 observations on the following variables.

- Year
- Burgers number of burgers (in billions)

Details

This dataset contains the number of burgers (in billions) sold by McDonald's since 1955.

Source

The total number of burgers sold by McDonald's in billions as of each year from "Over How Many Billion Served." Accessed on July 3, 2014.

References

http://overhowmanybillionserved.blogspot.com/

Examples

```
data(McDBurgers2)
```

MMAC	*Data for Mathematical Modeling and Applied Calculus*

Description

Data for Mathematical Modeling and Applied Calculus

Details

Data sets from the textbook Mathematical Modeling and Applied Calculus as well as all of the R pacakges developed by Project MOSAIC needed for someone studying from this book.

Author(s)

Joel Kilty (<joel.kilty@centre.edu>), Alex M. McAllister (<alex.mcallister@centre.edu>)

MonthlyUnemployment	*US Unemployment Rate*

Description

A dataset containing the United States monthly unemployment rate from January 2010 to December 2014.

Usage

```
data(MonthlyUnemployment)
```

Format

A data frame with 60 observations on the following variables.

- Months since January 2010
- Rate monthly unemployment rate

Details

This dataset contains the United States monthly unemployment rate from January 2010 to December 2014.

Source

U.S. monthly unemployment rate from January 2010 to December 2014 from "Bureau of Labor Statistics Data." Accessed on June 22, 2015.

References

http://data.bls.gov/timeseries/LNS14000000

Examples

```
data(MonthlyUnemployment)
```

Mortgage15YrAnnual   *15 Year Annual Mortgage Rates*

Description

A dataset containing interest rates on 15-year, fixed-rate conventional home mortgages annually from 1992 to 2014.

Usage

```
data(Mortgage15YrAnnual)
```

Format

A data frame with 23 observations on the following variables.

- Year
- Rate interest rate on 15-year, fixed-rate conventional home mortgage

Details

This dataset contains the interest rates on 15-year, fixed-rate conventional home mortgages annually from 1992 to 2014.

Source

Interest rates on 15-year, fixed-rate conventional home mortgages annually from 1992 to 2014 from "Mortgage Interest Rates History." Accessed on June 22, 2015.

References

http://www.fedprimerate.com/mortgagerates.htm

Examples

```
data(Mortgage15YrAnnual)
```

Mortgage30YrAnnual   *30 Year Annual Mortgage Rates*

Description

A dataset containing the average interest rate for conventional 30-year mortgages each year from 1981 to 2012.

Usage

```
data(Mortgage30YrAnnual)
```

Format

A data frame with 32 observations on the following variables.

- Year
- Rate average interest rate on conventional 30-year mortgage

Details

This dataset contains the average interest rate for conventional 30-year mortgages each year from 1981 to 2012.

Source

Average interest rate for conventional 30-year mortgages each year from 1981 to 2012 from "Primary Mortgage Market Survey Archives — 30 Year Fixed Rate Mortgages — Freddie Mac." Accessed on July 7, 2015.

References

http://www.freddiemac.com/pmms/pmms30.htm

Examples

```
data(Mortgage30YrAnnual)
```

Mortgage30YrMonthly1   *30 Year Annual Mortgage Rates*

Description

A subset of the dataset containing the interest rate on a 30-year fixed-rate conventional home mortgage.

Usage

```
data(Mortgage30YrMonthly1)
```

Format

A data frame with 265 observations on the following variables.

- Month
- Rate average interest rate on conventional 30-year mortgage

Details

This dataset contains the average interest rate for conventional 30-year mortgages each year from 1981 to 2012.

Source

Average interest rate for conventional 30-year mortgages each year from 1981 to 2012 from "Primary Mortgage Market Survey Archives — 30 Year Fixed Rate Mortgages — Freddie Mac." Accessed on July 7, 2015.

References

http://www.freddiemac.com/pmms/pmms30.htm

Examples

```
data(Mortgage30YrMonthly1)
```

Mortgage30YrMonthly2   *30 Year Annual Mortgage Rates*

Description

A dataset containing the interest rate on a 30-year fixed-rate conventional home mortgage.

Usage

```
data(Mortgage30YrMonthly2)
```

Format

A data frame with 519 observations on the following variables.

- Month

- Rate average interest rate on conventional 30-year mortgage

Details

This dataset contains the average interest rate for conventional 30-year mortgages each year from 1981 to 2012.

Source

Average interest rate for conventional 30-year mortgages each year from 1981 to 2012 from "Primary Mortgage Market Survey Archives — 30 Year Fixed Rate Mortgages — Freddie Mac." Accessed on July 7, 2015.

References

http://www.freddiemac.com/pmms/pmms30.htm

Examples

```
data(Mortgage30YrMonthly2)
```

NASDAQQuarterly   *Closing NASDAQ Value*

Description

A dataset containing the closing NASDAQ stock market value in U.S. dollars at the end of each quarter from March 1938 (quarter 1) through December 2014 (quarter 308)

Usage

```
data(NASDAQQuarterly)
```

Format

A data frame with 308 observations on the following variables.

- Quarter since March 1938
- Close Closing NASDAQ value at the end of the quarter

Details

This dataset contains closing NASDAQ stock market value in U.S. dollars at the end of each quarter from March 1938 (quarter 1) through December 2014 (quarter 308)

Source

Closing stock market value of the Dow Jones Industrial Average at the end of each quarter from March 31, 1930 through December 31, 2014 from "^DJI — Nasdaq Composite — U.S. — Stooq." Accessed on July 7, 2015.

References

http://stooq.com/q/d/?s=^dji

Examples

```
data(NASDAQQuarterly)
```

NaturalGasConsumption   *US Natural Gas Consumption*

Description

A subset of the dataset containing the total number of millions of cubic feet of natural gas consumed in the United States from 1950 to 1970.

Usage

```
data(NaturalGasConsumption)
```

Format

A data frame with 21 observations on the following variables.

- `Year`
- `CubicFeet` millions of cubic feet of natural gas consumed

Details

This dataset contains the total number of millions of cubic feet of natural gas consumed in the United States from 1950 to 1970.

Source

Natural Gas from U.S. Energy Information Administration. Accessed on June 9, 2016.

References

http://www.eia.gov/dnav/ng/hist/n9140us2a.htm

Examples

```
data(NaturalGasConsumption)
```

NaturalGasConsumption2

US Natural Gas Consumption

Description

A dataset containing the total number of millions of cubic feet of natural gas consumed in the United States from 1950 to 1970.

Usage

data(NaturalGasConsumption2)

Format

A data frame with 67 observations on the following variables.

- Year
- CubicFeet millions of cubic feet of natural gas consumed

Details

This dataset contains the total number of millions of cubic feet of natural gas consumed in the United States from 1950 to 1970.

Source

Natural Gas from U.S. Energy Information Administration. Accessed on June 9, 2016.

References

http://www.eia.gov/dnav/ng/hist/n9140us2a.htm

Examples

data(NaturalGasConsumption2)

NetherlandsPopulation   *Population of the Netherlands*

Description

A dataset containing the population of the Netherlands measured in millions of people at the beginning of each decade since 1700.

Usage

```
data(NetherlandsPopulation)
```

Format

A data frame with 21 observations on the following variables.

- Year
- Population of Netherlands (in millions of people)

Details

This dataset contains the population of the Netherlands measured in millions of people at the beginning of each decade since 1700.

Source

Population of the Netherlands from "The NETHERLANDS : country populations." Accessed on July 11, 2014.

References

http://www.populstat.info/Europe/netherlc.htm

Examples

```
data(NetherlandsPopulation)
```

OilProductionAnnual1   *Annual US Oil Production*

Description

A subset of the dataset containing the number of barrels (in thousands) of crude oil produced per year in the United States.

Usage

```
data(OilProductionAnnual1)
```

Format

A data frame with 38 observations on the following variables.

- Year
- Barrels of oil produced (in thousands)

Details

This dataset contains the number of barrels (in thousands) of crude oil produced per year in the United States

Source

U.S. field production of crude oil in billions of barrels from the U.S. Energy Information Administration from "U.S. Field Production of Crude Oil." Accessed on July 3, 2014.

References

http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS1&f=M

Examples

```
data(OilProductionAnnual1)
```

OilProductionAnnual2   *Annual US Oil Production*

Description

A subset of the dataset containing the number of barrels (in thousands) of crude oil produced per year in the United States.

Usage

```
data(OilProductionAnnual2)
```

Format

A data frame with 114 observations on the following variables.

- Year
- Barrels of oil produced (in thousands)

Details

This dataset contains the number of barrels (in thousands) of crude oil produced per year in the United States

Source

U.S. field production of crude oil in billions of barrels from the U.S. Energy Information Administration from "U.S. Field Production of Crude Oil." Accessed on July 3, 2014.

References

http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS1&f=M

Examples

```
data(OilProductionAnnual2)
```

PollenCountLA   *Pollen Count in Los Angeles, CA*

Description

A dataset containing the pollen count each day in Los Angeles from April to July of 2014.

Usage

```
data(PollenCountLA)
```

Format

A data frame with 30 observations on the following variables.

- Date since April 1, 2014
- Count Pollen count in Los Angeles, CA

Details

This dataset contains the pollen count each day in Los Angeles from April to July of 2014.

Source

Three-year average monthly pollen count in Los Angeles, California from "Historic Allergy Index for 90001 | Pollen.com." Accessed on June 25, 2014.

References

http://www.pollen.com/allergy-trends.asp?PostalCode=90001

Examples

```
data(PollenCountLA)
```

PopulationBelgium *Population of Belgium*

Description

A dataset containing the population of Belgium in millions of people.

Usage

```
data(PopulationBelgium)
```

Format

A data frame with 18 observations on the following variables.

- Year
- People Population of Belgium in millions of people

Details

This dataset contains the population of Belgium in millions of people.

Source

Population of Belgium in millions of people by year from "Population of the Netherlands, Belgium, and Luxembourg." Accessed on June 26, 2014.

References

http://www.tacitus.nu/historical-atlas/population/benelux.htm

Examples

```
data(PopulationBelgium)
```

RunningSpeed   *Running Speed of Animals*

Description

A dataset containing the running speed in centimeters per second as a function of the length in centimeters of various animals.

Usage

```
data(RunningSpeed)
```

Format

A data frame with 12 observations on the following variables.

- Length of animal in centimeters
- Speed of animal in centimeters per second

Details

This dataset contains the running speed in centimeters per second as a function of the length in centimeters of various animals.

Source

Running speed and length of animals from page 152. McMahon, Thomas A., and John Tyler Bonner. *On Size and Life*. New York: Scientific American Library, 1983.

Examples

```
data(RunningSpeed)
```

SATMathKentucky   *SAT Math Scores in Kentucky*

Description

A dataset containing the average SAT math score in Kentucky each year from 1980 to 2013.

Usage

```
data(SATMathKentucky)
```

Format

A data frame with 34 observations on the following variables.

- Year
- Score Average SAT math score in Kentucky

Details

This dataset contains the average SAT math score in Kentucky each year from 1980 to 2013.

Source

Average SAT math score in Kentucky each year from 1980 to 2013 from College Board's 2013 SAT State Profile Report for Kentucky. Accessed on July 16, 2014.

References

http://media.collegeboard.com/digitalServices/pdf/research/2013/KY_13_03_03_01.pdf

Examples

```
data(SATMathKentucky)
```

StudentDebt1   *Average Student Debt*

Description

A subset of the dataset containing the average cumulative debt of bachelor's degree students enrolled in public colleges and universities.

Usage

```
data(StudentDebt1)
```

Format

A data frame with 7 observations on the following variables.

- Year
- Debt Average cummulative debt

Details

This dataset contains the average cumulative debt of bachelor's degree students enrolled in public colleges and universities.

Source

Average debt load in 2013 dollars of bachelor's degree recipients attending U.S. public colleges and universities who borrowed money to finance their education from "Average Cumulative Debt Load of Bachelor's Degree Recipients at Public Four-Year Institutions over Time — Trends in Higher Education." Accessed on July 5, 2015.

References

https://trends.collegeboard.org/student-aid/figures-tables/average-debt-levels-public-sector-bachelors-degree-recipients-over-time

Examples

```
data(StudentDebt1)
```

StudentDebt2   *Average Student Debt*

Description

A dataset containing the average cumulative debt of bachelor's degree students enrolled in public colleges and universities.

Usage

```
data(StudentDebt2)
```

Format

A data frame with 15 observations on the following variables.

- Year
- Debt Average cummulative debt

Details

This dataset contains the average cumulative debt of bachelor's degree students enrolled in public colleges and universities.

Source

Average debt load in 2013 dollars of bachelor's degree recipients attending U.S. public colleges and universities who borrowed money to finance their education from "Average Cumulative Debt Load of Bachelor's Degree Recipients at Public Four-Year Institutions over Time — Trends in Higher Education." Accessed on July 5, 2015.

References

https://trends.collegeboard.org/student-aid/figures-tables/average-debt-levels-public-sector-bachelors-degree-recipients-over-time

Examples

```
data(StudentDebt2)
```

SunPositionAlaska   *Sun Position in Anchorage, Alaska*

Description

A dataset containing the altitude angle of the sun in Anchorage, Alaska, each hour from midnight on June 29, 2014 (hour 0) until midnight on June 30, 2014 (hour 24).

Usage

```
data(SunPositionAlaska)
```

Format

A data frame with 25 observations on the following variables.

- Time hours since midnight on June 29, 2014
- Position Altitude angle of the sun

Details

This dataset contains the altitude angle of the sun in Anchorage, Alaska, each hour from midnight on June 29, 2014 (hour 0) until midnight on June 30, 2014 (hour 24).

Source

Altitude angle of the sun in Anchorage, Alaska, each hour from midnight on June 29, 2014 (hour 0) until midnight on June 30, 2014 (hour 24) from "Sun & moon times, Anchorage, Alaska, U.S.A." Accessed on July 1, 2014.

References

http://www.timeanddate.com/astronomy/usa/anchorage

Examples

```
data(SunPositionAlaska)
```

SunriseLA   *Sunrise in Los Angeles, CA*

Description

A dataset containing the number of minutes after 4 a.m. until sunrise in Los Angeles, California, adjusted for Daylight Savings Time, from January 2010 (month 1) through December 2011 (month 24).

Usage

```
data(SunriseLA)
```

Format

A data frame with 24 observations on the following variables.

- `Month` from January 2010
- `Time` minutes after 4 a.m.

Details

This dataset contains the number of minutes after 4 a.m. until sunrise in Los Angeles, California, adjusted for Daylight Savings Time, from January 2010 (month 1) through December 2011 (month 24).

Source

Number of minutes after 4 a.m. until sunrise in Los Angeles, adjusted for Daylight Savings Time, from January 2010 (month 1) through December 2011 (month 24) from "Sunrise and sunset times in Los Angeles, December 2011." Accessed on July 14, 2014.

References

http://www.timeanddate.com/sun/usa/los-angeles?month=12&year=2011

Examples

```
data(SunriseLA)
```

SunsetGreenwich *Sunset in Greenwich, England*

Description

A dataset containing the number of minutes after 3 p.m. until sunset at Greenwich, England since January 2010.

Usage

```
data(SunsetGreenwich)
```

Format

A data frame with 25 observations on the following variables.

- Month from January 2010

- Minutes minutes after 3 p.m.

Details

This dataset contains the number of minutes after 3 p.m. until sunset at Greenwich, England since January 2010.

Source

Number of minutes after 3 p.m. until sunset in Greenwich, England since January 2010 from "Sunrise and sunset times in Greenwich Borough." Accessed on July 14, 2014.

References

http://www.timeanddate.com/sun/uk/greenwich-city

Examples

```
data(SunsetGreenwich)
```

SunsetLA   *Sunset in Los Angeles, CA*

Description

A dataset containing the number of minutes after 4 p.m. until sunset in Los Angeles, California, adjusted for Daylight Savings time, from January 2010 (month 1) through December 2013 (month 48).

Usage

```
data(SunsetLA)
```

Format

A data frame with 48 observations on the following variables.

- `Month` from January 2010
- `Minutes` minutes after 4 p.m.

Details

This dataset contains the number of minutes after 4 p.m. until sunset in Los Angeles, California, adjusted for Daylight Savings time, from January 2010 (month 1) through December 2013 (month 48).

Source

Number of minutes after 4 p.m. until sunset in Los Angeles, California, adjusted for Daylight Savings Time, from January 2010 (month 1) through December 2013 (month 48) from "Sunrise and sunset times in Los Angeles, December 2011." Accessed on July 14, 2014.

References

http://www.timeanddate.com/sun/usa/los-angeles?month=12&year=2011

Examples

```
data(SunsetLA)
```

| SwimmingSpeed | *Swimming Speed of Various Animals* |

Description

A dataset containing the swimming speed in centimeters per second as a function of the length in centimeters of various animals

Usage

```
data(SwimmingSpeed)
```

Format

A data frame with 17 observations on the following variables.

- Length of animal in centimeters
- Speed swimming speed of animal in centimeters per second

Details

This dataset contains the swimming speed in centimeters per second as a function of the length in centimeters of various animals.

Source

Swimming speed and length of animals from page 152. McMahon, Thomas A., and John Tyler Bonner. *On Size and Life*. New York: Scientific American Library, 1983.

Examples

```
data(SwimmingSpeed)
```

| TemperaturesDanville | *Temperatures in Danville, KY* |

Description

A dataset containing the average maximum temperature in Danville, Kentucky at the beginning of each month since January 2006

Usage

```
data(TemperaturesDanville)
```

Format

A data frame with 60 observations on the following variables.

- `Month` from January 2006
- `Temperature` in degrees Farenheit

Details

This dataset contains the average maximum temperature in Danville, Kentucky at the beginning of each month since January 2006

Source

Average maximum temperature in Danville, Kentucky at the beginning of each month since January 2006 from "noaa.gov." Accessed on June 25, 2014

References

http://www1.ncdc.noaa.gov/pub/orders/cdo/352625.pdf

Examples

```
data(TemperaturesDanville)
```

ToyotaMonthly	*Toyota Stock Prices*

Description

A dataset containing the average monthly stock price of Toyota from 1982 to 1998.

Usage

```
data(ToyotaMonthly)
```

Format

A data frame with 60 observations on the following variables.

- `Month` from January 1982
- `Value` in US dollars

Details

This dataset contains the average monthly stock price of Toyota from 1982 to 1998.

Source

Toyota Motors Corporation (TM) stock market value in U.S. dollars from "Yahoo Finance | TM Historical Prices." Accessed on August 13, 2016.

References

http://finance.yahoo.com/quote/TM/history?p=TM

Examples

```
data(ToyotaMonthly)
```

TwitterUsers   *Twitter Users*

Description

A dataset containing the number of monthly active Twitter users worldwide by quarter (e.g., 10.25 represents April to June 2010) in millions of people.

Usage

```
data(TwitterUsers)
```

Format

A data frame with 17 observations on the following variables.

- Year since 2000
- Users number of users in millions of people

Details

This dataset contains the number of monthly active Twitter users worldwide by quarter (e.g., 10.25 represents April to June 2010) in millions of people.

Source

Number of monthly active Twitter users worldwide from 1st quarter 2010 to 1st quarter 2016 (in millions) from "Twitter : number of monthly active users 2010–2016 | Statista." Accessed on June 9, 2016.

References

http://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/

Examples

```
data(TwitterUsers)
```

TwitterUsers1	*Twitter Users*

Description

A dataset containing how many millions of people used Twitter from the first quarter of 2012 to the end of the third quarter of 2013.

Usage

```
data(TwitterUsers1)
```

Format

A data frame with 8 observations on the following variables.

- Year since 2000
- Users number of users in millions of people

Details

This dataset contains contains how many millions of people used Twitter from the first quarter of 2012 to the end of the third quarter of 2013..

Source

Number of monthly active Twitter users worldwide from 1st quarter 2010 to 1st quarter 2016 (in millions) from "Twitter : number of monthly active users 2010–2016 | Statista." Accessed on June 9, 2016.

References

http://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/

Examples

```
data(TwitterUsers1)
```

TwitterUsers2 *Twitter Users*

Description

A dataset containing how many millions of people used Twitter from the first quarter of 2010 to the end of the third quarter of 2013.

Usage

```
data(TwitterUsers2)
```

Format

A data frame with 15 observations on the following variables.

- Year since 2000
- Users number of users in millions of people

Details

This dataset contains how many millions of people used Twitter from the first quarter of 2012 to the end of the third quarter of 2013..

Source

Number of monthly active Twitter users worldwide from 1st quarter 2010 to 1st quarter 2016 (in millions) from "Twitter : number of monthly active users 2010–2016 | Statista." Accessed on June 9, 2016.

References

http://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/

Examples

```
data(TwitterUsers2)
```

TwitterUsers3   *Twitter Users*

Description

A dataset containing how many millions of people used Twitter from the first quarter of 2010 to the beginning of 2016.

Usage

```
data(TwitterUsers3)
```

Format

A data frame with 24 observations on the following variables.

- Year since 2000
- Users number of users in millions of people

Details

This dataset contains how many millions of people used Twitter from the first quarter of 2010 to the beginning of 2016

Source

Number of monthly active Twitter users worldwide from 1st quarter 2010 to 1st quarter 2016 (in millions) from "Twitter : number of monthly active users 2010–2016 | Statista." Accessed on June 9, 2016.

References

http://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/

Examples

```
data(TwitterUsers3)
```

USCO2Emissions   *US CO2 Emissions*

Description

A dataset containing U.S. carbon dioxide emissions in kT (energy) annually from 1980 to 2008 according to the World Bank.

Usage

```
data(USCO2Emissions)
```

Format

A data frame with 29 observations on the following variables.

- Year

- kT

Details

This dataset contains U.S. carbon dioxide emissions in kT (energy) annually from 1980 to 2008 according to the World Bank.

Source

United States carbon dioxide emissions in kT annually from 1960 to 2010 according to the World Bank at "Data | United States." Accessed on July 10, 2014.

References

http://data.worldbank.org/country/united-states

Examples

```
data(USCO2Emissions)
```

USRetailTax   *US Retail Tax*

Description

A dataset containing U.S. retail tax in millions of dollars each year from 2005 through 2011.

Usage

```
data(USRetailTax)
```

Format

A data frame with 7 observations on the following variables.

- Year
- Tax US retail tax in millions of dollars

Details

This dataset contains U.S. retail tax in millions of dollars each year from 2005 through 2011.

Source

Annual total retail sales taxes collected in the United States in each year from "Monthly & Annual Retail Trade, Main Page — U.S. Census Bureau." Accessed on July 14, 2014.

References

http://www.census.gov/retail/

Examples

```
data(USRetailTax)
```

USTotalPopulation	*Total U.S. Population*

Description

A dataset containing the U.S. population in millions of people each decade from 1900 to 2010 based on the census.

Usage

```
data(USTotalPopulation)
```

Format

A data frame with 9 observations on the following variables.

- Year
- Population US population in millions of people
- RelGrowth Relative growth rate of the US population

Details

This dataset contains the U.S. population in millions of people each decade from 1900 to 2010 based on the census.

Source

U.S. census data for 1950–2000 is from "Measuring America: The Decennial Censuses from 1790 to 2000." Accessed on June 9, 2016.

References

https://www.census.gov/prod/2002pubs/pol02-ma.pdf http://www.census.gov/2010census/popmap/

Examples

```
data(USTotalPopulation)
```

WaterLevelsEastportMaine

Water Levels in Eastport, Maine

Description

A dataset containing the water level in Eastport, Maine from May 26, 2016 to May 27, 2016 measured in feet above the mean lower water level as a function of the time after 12:00 a.m. on May 26, 2016.

Usage

```
data(WaterLevelsEastportMaine)
```

Format

A data frame with 477 observations on the following variables.

- Hours since 12 a.m. on May 26m, 2016
- WaterLevel feet above the mean lower water level

Details

This dataset contains the water level in Eastport, Maine from May 26, 2016 to May 27, 2016 measured in feet above the mean lower water level as a function of the time after 12:00 a.m. on May 26, 2016.

Source

Observed water levels in Eastport, Maine from NOAA Tides and Currents. Accessed on June 2, 2016.

References

http://tidesandcurrents.noaa.gov/waterlevels.html?id=8410140&units=standard&bdate=20160526&edate=20160527&timez

Examples

```
data(WaterLevelsEastportMaine)
```

WeightChange *Weight Change during Pregnancy*

Description

A dataset containing the change in one woman's weight during a pregnancy from the beginning of her second trimester until birth.

Usage

```
data(WeightChange)
```

Format

A data frame with 129 observations on the following variables.

- Day since beginning of second trimester
- Weight in pounds

Details

This dataset contains the change in one woman's weight during a pregnancy from the beginning of her second trimester until birth.

Source

Personal data collection

Examples

```
data(WeightChange)
```

WorldPopulation *World Population*

Description

A dataset containing the total midyear population for the world from 1950 to 2015.

Usage

```
data(WorldPopulation)
```

Format

A data frame with 14 observations on the following variables.

- `Year`
- `People` world population in billions of people

Details

This dataset contains the total midyear population for the world from 1950 to 2015.

Source

Estimated world population data from 1950 to 2015 from "International Programs — Total Mid-Year Population for the World: 1950–2050 — U.S. Census Bureau." Accessed on June 16, 2014.

References

http://www.census.gov/population/international/data/worldpop/table_population.php

Examples

```
data(WorldPopulation)
```

WorldPopulationChange   *World Population Change*

Description

A dataset containing the percent growth of the world's population as a function of the year from 1970 to 2015.

Usage

```
data(WorldPopulationChange)
```

Format

A data frame with 10 observations on the following variables.

- `Year`
- `Growth` Percent growth of worlds population

Details

This dataset contains the percent growth of the world's population as a function of the year from 1970 to 2015.

Source

World population from the U.S. Census Bureau. Accessed on June 3, 2016.

References

http://www.census.gov/population/international/data/worldpop/table_population.php

Examples

```
data(WorldPopulationChange)
```

YellowCards   *Yellow Cards in World Cup*

Description

A dataset containing the number of yellow cards given per men's World Cup tournament from 1970 to 2010.

Usage

```
data(YellowCards)
```

Format

A data frame with 11 observations on the following variables.

- Year
- Cards Number of yellow cards given

Details

This dataset contains the number of yellow cards given per men's World Cup tournament from 1970 to 2010.

Source

Number of yellow cards given per men's World Cup tournament from "Planet World Cup." Accessed on July 16, 2014.

References

http://www.planetworldcup.com

Examples

```
data(YellowCards)
```

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