

## Introduction\_to\_R\_codes

```
#####  
### chunk number 1:  
#####  
#line 23 "Introduction_to_R.Rnw"  
  if(exists("ls.enc")) options(encoding=ls.enc)  
  
#####  
### chunk number 2: getwd()  
#####  
#line 132 "Introduction_to_R.Rnw"  
getwd()  
  
#####  
### chunk number 3: getwd  
#####  
#line 141 "Introduction_to_R.Rnw"  
getwd  
  
#####  
### chunk number 4: Getwd eval=FALSE  
#####  
## #line 159 "Introduction_to_R.Rnw"  
## Getwd()  
  
#####  
### chunk number 5: 2+2  
#####  
#line 176 "Introduction_to_R.Rnw"  
2+2  
  
#####  
### chunk number 6: 2+2 is 5  
#####  
#line 184 "Introduction_to_R.Rnw"  
funkyadd<-function(x, y)  
{  
  x+y+1  
}  
funkyadd(2, 2)  
  
#####  
### chunk number 7: setwd eval=FALSE  
#####  
## #line 199 "Introduction_to_R.Rnw"  
## setwd("pathname")  
  
#####  
### chunk number 8: install packages eval=FALSE  
#####  
## #line 230 "Introduction_to_R.Rnw"  
## install.packages("Hmisc")  
## install.packages("foreign")  
## install.packages("ISwR")  
## install.packages("gdata")  
## install.packages("Rcmdr")  
## install.packages("Lattice")
```

Introduction\_to\_R\_codes

```
## install packages("ggplot2")
## update packages()

#####
### chunk number 9: package loading
#####
#line 267 "Introduction_to_R.Rnw"
library()
library("ISwR")
search()

#####
### chunk number 10: save and load
#####
#line 292 "Introduction_to_R.Rnw"
save.image("mydata.RData")
load("mydata.RData")

#####
### chunk number 11: loading data
#####
#line 305 "Introduction_to_R.Rnw"
library("ISwR")
?ISwR
data()
library(help=ISwR)

#####
### chunk number 12: load data and summarize
#####
#line 329 "Introduction_to_R.Rnw"
data(cystfi br)
?cystfi br
summary(cystfi br)

#####
### chunk number 13: attaching a dataset
#####
#line 347 "Introduction_to_R.Rnw"
mean(cystfi br$age)
# this generates an error
# mean(age)
attach(cystfi br)
mean(age)

#####
### chunk number 14: by
#####
#line 362 "Introduction_to_R.Rnw"
by(cystfi br, cystfi br["sex"], summary)

#####
### chunk number 15: table
#####
#line 372 "Introduction_to_R.Rnw"
table(sex)
```

table(age, sex)

```
#####
### chunk number 16: table continued eval=FALSE
#####
## #line 376 "Introduction_to_R.Rnw"
## table(hei ght, age, sex)
```

```
#####
### chunk number 17: t test
#####
#line 398 "Introduction_to_R.Rnw"
t.test(pemax)
mean(pemax)
t.test(pemax, mu=100)
```

```
#####
### chunk number 18: t test
#####
#line 414 "Introduction_to_R.Rnw"
t.test(pemax, mu=90, conf.level=.99)
```

```
#####
### chunk number 19: linear regression
#####
#line 439 "Introduction_to_R.Rnw"
lm(pemax~tlc)
```

```
#####
### chunk number 20: linear regression
#####
#line 450 "Introduction_to_R.Rnw"
summary(lm(pemax~tlc))
regoutput<-lm(pemax~tlc)
names(regoutput)
regoutput$residuals
```

```
#####
### chunk number 21: plot
#####
#line 469 "Introduction_to_R.Rnw"
plot(regoutput)
```

```
#####
### chunk number 22: multiple regression
#####
#line 479 "Introduction_to_R.Rnw"
summary(lm(pemax ~ tlc + age + sex))
```

```
#####
### chunk number 23: data
#####
#line 538 "Introduction_to_R.Rnw"
library(lattice)
library(ggplot2)
```

Introduction\_to\_R\_codes

```
data(diamonds)
?diamonds
attach(diamonds)
```

```
#####
### chunk number 24: scatterplot
#####
#line 554 "Introduction_to_R.Rnw"
plot(price~carat)
```

```
#####
### chunk number 25: regression_line
#####
#line 566 "Introduction_to_R.Rnw"
plot(price~carat)
abline(lm(price~carat), col="red")
```

```
#####
### chunk number 26: scatterplot_tweaks
#####
#line 576 "Introduction_to_R.Rnw"
plot(price~carat, col="steelblue", pch=3, main="Diamond Data", xlab="weight of
diamond in carats", ylab="price of diamond in dollars", xlim=c(0, 3))
```

```
#####
### chunk number 27: grouped_scatterplots
#####
#line 594 "Introduction_to_R.Rnw"
xyplot(price~carat | clarity)
xyplot(price~carat | cut, groups=clarity, auto.key=list(space="right"))
cloud(price~carat*table | clarity)
```

```
#####
### chunk number 28: barchart_using_ggplot
#####
#line 618 "Introduction_to_R.Rnw"
ggplot(diamonds, aes(cut)) + geom_bar(position="stack")
ggplot(diamonds, aes(clarity)) + geom_bar(position="stack")
ggplot(diamonds, aes(clarity)) + facet_grid(.~cut) + geom_bar(position="dodge")
```

```
#####
### chunk number 29: regression_ggplot2
#####
#line 628 "Introduction_to_R.Rnw"
print(ggplot(diamonds, aes(carat, price)) + geom_point() + geom_smooth(method="lm"))
```

```
#####
### chunk number 30: ggplot2_tweaks
#####
#line 638 "Introduction_to_R.Rnw"
ggplot(diamonds, aes(carat, price)) + xlim(0, 3) + geom_point(colour="steelblue",
pch=3) + labs(x="weight of diamond in carats", y="price of diamond in dollars") +
opts(title="Diamond Data")
```

Introduction\_to\_R\_codes

```
### chunk number 31: PDF
#####
#line 658 "Introduction_to_R.Rnw"
pdf(file="output.pdf")
xyplot(price~carat | clarity)
xyplot(price~carat | cut, groups=clarity, auto.key=list(space="right"))
cloud(price~carat*table | clarity)
dev.off()

#####
### chunk number 32: create data frame
#####
#line 693 "Introduction_to_R.Rnw"
testdata <- data.frame()
testdata

#####
### chunk number 33: read.table eval=FALSE
#####
## #line 758 "Introduction_to_R.Rnw"
##
importdata<-read.table("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/myfile.txt"
)

#####
### chunk number 34: read.table parameters eval=FALSE
#####
## #line 774 "Introduction_to_R.Rnw"
##
importdata2<-read.table("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/myfile2.txt",
header=TRUE, sep=";", row.names="id", na.strings="..", stringsAsFactors=FALSE)

#####
### chunk number 35: foreign eval=FALSE
#####
## #line 820 "Introduction_to_R.Rnw"
## library(foreign)
## download.file("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/mydata.xpt",
"mydata.xpt", mode="wb")
## importdata3 <- read.xport("mydata.xpt")
## importdata4 <- read.spss
("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/mydata.sav")
## detach(package: foreign)

#####
### chunk number 36: Excel files eval=FALSE
#####
## #line 847 "Introduction_to_R.Rnw"
## library(gdata)
## importdata5 <- read.xls
("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/mydata.xls", 1)
## importdata6 <- read.xls
("http://www.rci.rutgers.edu/~rwomack/R/Spring2011/mydata.xls", 1)
## detach(package: gdata)

#####
### chunk number 37: Import data
```

## Introduction\_to\_R\_codes

```
#####  
#line 876 "Introduction_to_R.Rnw"  
download.file("http://databank.worldbank.org/databank/download/Gender_Stats_csv.zip",  
"Gender.zip")  
unzip("Gender.zip")  
genderstats<-read.csv("Gender_Stats_Data.csv")  
download.file("http://databank.worldbank.org/databank/download/MDG_csv.zip", "MDI.zip")  
unzip("MDI.zip")  
MDstats<-read.csv("MDG_Data.csv")  
  
#####  
### chunk number 38: Select Countries  
#####  
#line 898 "Introduction_to_R.Rnw"  
gscountry<-subset(genderstats, Country_Name=="China" | Country_Name=="India" |  
Country_Name=="United States")  
MDcountry<-subset(MDstats, Country.Name=="China" | Country.Name=="India" |  
Country.Name=="United States")  
table(gscountry$Country_Name)  
table(MDcountry$Country.Name)  
  
#####  
### chunk number 39: Select Variables from MDI  
#####  
#line 915 "Introduction_to_R.Rnw"  
myMDI<-subset(MDcountry, Series.Name=="Mobile cellular subscriptions (per 100  
people)" | Series.Name=="Internet users (per 100 people)",  
select=c(Country.Name, Series.Name, X2000: X2008))  
myMDI  
  
#####  
### chunk number 40: Select Variables from Gender  
#####  
#line 925 "Introduction_to_R.Rnw"  
mygender<-subset(gscountry, Indicator_name=="Expected years of schooling, female" |  
Indicator_name=="Expected years of schooling, male" | Indicator_name=="Adolescent  
fertility rate (births per 1,000 women ages 15-19)" | Indicator_name=="Fertility  
rate, total (births per woman)", select=c(Country_Name, Indicator_name, X2000: X2008))  
mygender  
  
#####  
### chunk number 41: merge  
#####  
#line 953 "Introduction_to_R.Rnw"  
names(mygender)<-c("Country.Name", "Series.Name", "X2000", "X2001", "X2002", "X2003", "X20  
04", "X2005", "X2006", "X2007", "X2008")  
mydata<-merge(mygender, myMDI, all=TRUE)  
mydata  
  
#####  
### chunk number 42: split  
#####  
#line 968 "Introduction_to_R.Rnw"  
mysplit<-split(mydata, mydata$Country.Name, drop=TRUE)  
mysplit$China
```

Introduction\_to\_R\_codes

```
#####  
### chunk number 43: export formats for mydata  
#####  
#line 986 "Introduction_to_R.Rnw"  
write.csv(mydata, "mydata.csv")  
library(foreign)  
write.foreign(mydata, datafile="mydata.sav", codefile="mydata.sps", package="SPSS")  
  
#####  
### chunk number 44: save  
#####  
#line 996 "Introduction_to_R.Rnw"  
save.image("mydata.RData")
```