

R Data Read/Write

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1 Introduction

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"R for Everyone - Advanced Analytics and Graphic" J. P. Lander

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- CSVs (comma separated values)
- Excel data
- Databases
- other tools
- R binary files
- Data included with R
- Extract from Web Sites

Comma Separated Values

```
Url <- http://www.jaredlander.com/data/Tomato%20First.csv"
tomato <- read.table(file=Url, header=TRUE, sep=" ");
head(tomato)
```

```
x <- 10:1
y <- -4:5
q <- c("H", "F", "B", "C", "R", "L", "BB", "T", "CK", "S")
DF <- data.frame(First=x, Second=y, Sport=q,
                 stringsAsFactors=FALSE)
DF$Sport
0
```

Converting into a CSV file

- convert an Excel file into a CSV file
- gdata, XLConnect, xlsReadWrite, RODBC

```
require(RODBC)

db <- odbcConnect("QV Training")
orderedTB <- sqlQuery(db, "SELECT * FROM Orders",
  stringAsFactors=FALSE)
detailTB <- sqlQuery(db, "SELECT * FROM [Order Details]",
  stringAsFactors=FALSE)
longQuery <- "SELECT * FROM Orders, [Order Details]
  WHERE Orders.OrderID = [Order Details].OrderID"
detailsJoin <- sqlQuery(db, longQuery,
  stringsAsFactors=FALSE)
```

Read from other tools

| | |
|-------------|---------|
| read.spss | SPSS |
| read.dta | Stata |
| read.ssd | SAS |
| read.octave | Octave |
| read.mtp | Minitab |
| read.systat | Systat |

R Binary Files

```
save(tomato, file="data/tomato.rdata")
rm(tomato)
head(tomato)
load("data/tomato.rdata")
head(tomato)
n <- 0
r <- 1:10
w <- data.frame(n, r)
n
w
save(n, r, w file="data/multiple.rdata")
rm(n, r, w)
n
r
w
```

Data included in R

```
require(ggplot2)
data(diamonds)
head(diamonds)
```

```
require(XML)

Url <- "http://www/jaredlander.com/2012/02
      /another-kind-of-super-bowl-pool")
bowlPool <- readHTMLTable(Url, which=1, header=FALSE,
                          stringsAsFactors=FALSE)
bowlPool
```

C Binary Files

```
typedef struct
{
    int date;
    int open;
    int high;
    int low;
    int close;
    float amount;
    int vol;
    int reservation;
} StockData;
```

```
line1<-c(readBin(to.read,"int",5),
         readBin(to.read,"double",1,size=4),
         readBin(to.read,"int",2))
```

[https://stackoverflow.com/questions/26584227/
how-can-i-read-float-data-from-a-binary-file-using-r](https://stackoverflow.com/questions/26584227/how-can-i-read-float-data-from-a-binary-file-using-r)

C Simple Text Files

```
input data 'airquality.txt'
```

```
-----  
Ozone Solar.R Wind Temp Month Day  
1 41      190   7.4   67    5   1  
2 36      118   8.0   72    5   2  
3 12      149  12.6   74    5   3  
4 18      313  11.5   62    5   4  
5 NA      NA   14.3   56    5   5
```

```
airqual <- read.table("airquality.txt")
```

```
airqual <- read.csv("airquality.csv")
```

```
write.table(cars1, file="cars1.txt", quate=F)
```

```
http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/R/R1\_GettingStarted/  
R1\_GettingStarted8.html
```

C CSV Text Files

```
input data 'airquality.csv'
```

```
-----  
Ozone,Solar.R,Wind,Temp,Month,Day
```

```
1,41,190,7.4,67,5,1
```

```
2,36,118,8.0,72,5,2
```

```
3,12,149,12.6,74,5,3
```

```
4,18,313,11.5,62,5,4
```

```
5,NA,NA,14.3,56,5,5
```

```
airqual <- read.csv("airquality.csv")
```

```
write.csv(airqual, file="cars1.txt")
```

```
http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/R/R1\_GettingStarted/  
R1\_GettingStarted8.html
```