

## Solutions

1

```
dat1 = read.csv('file1.csv')  
head(dat1)
```

---

2

```
dat2 = read.csv2('file2.csv')  
head(dat1)
```

---

3

```
dat3 = read.table(file='file3.tsv', header = TRUE)  
head(dat3)
```

---

4

```
install.packages("readxl")  
library("readxl")  
dat4 = data.frame(read_excel("file4.xlsx"))
```

---

5

```
load('file5.rda')  
head(file5)
```

---

6

```
plot(dat3$x,  
dat3$y)
```

```
dat3_corr = dat3[dat3$x>=-0.5  
& dat3$x<1,]  
plot(dat3_corr$x,  
dat3_corr$y)  
nrow(dat3)-nrow(dat3_corr)
```

---

7

```
l_data_young <- l_data[l_data$age < 20,]
```

---

8

```
l_data_m <- l_data[l_data$gender == "m",]  
l_data_f <- l_data[l_data$gender == "f",]
```

---

9

```
l_data_high_AOL <- l_data[l_data$AOL >=10,]
```

---

10

```
l_data_older_intermediate <- l_data[l_data$AOL > 10  
& l_data$FAR > 4 & l_data$FAR <= 8,]
```

---

10

```
plot(l_data_m$F2.Hz, l_data_m$F1.Hz, col = "yellow", pch = 16)  
points(l_data_f$F2.Hz, l_data_f$F1.Hz, col = "green", pch = 16)
```

---

12

```
L01_non <- l_data[l_data$subject == "L01" & l_data$context == 0,]  
L01_pre <- l_data[l_data$subject == "L01" & l_data$context == 1,]  
par(mfrow = c(1,2))  
plot(L01_pre$F2.Hz, L01_pre$F1.Hz)  
title('L01 pre-vocalic')  
plot(L01_non$F2.Hz, L01_non$F1.Hz)  
title('L01 non-vocalic')
```

---

## 13

```
head(dat2)  
par(mfrow=c(1,2))  
plot(dat1$X,dat1$Y, type = 'l')  
plot(dat2$X,dat2$Y, type = 'l')
```

---

## 14

```
trig = data.frame(X = seq(-4,4,0.1))  
head(trig)  
trig$sin = sin(trig$X)  
trig$cos = cos(trig$X)  
  
plot(trig$X,trig$sin, type = 'l', col = 'red')  
lines(trig$X,trig$cos, type = 'l', col = 'blue')  
abline(h=0,v=0)
```