

# Statistic

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## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
data1 <- read.csv("pulse.csv")
```

```
active <- data1[, 1]
rest <- data1[, 2]
smoke <- data1[, 3]
gender <- data1[, 4]
exercise <- data1[, 5]
hgt <- data1[, 6]
wgt <- data1[, 7]
```

```
#mean
```

```
mean_hgt <- by(hgt, gender, mean)
mean_wgt <- by(wgt, gender, mean)
print(mean_hgt)
```

```
## gender: 0
## [1] 70.90984
## -----
## gender: 1
## [1] 65.29091
```

```
print(mean_wgt)
```

```
## gender: 0
## [1] 178.6557
## -----
## gender: 1
## [1] 134.9182
```

```
mean_activeS <- by(active, smoke, mean)
mean_activeG <- by(active, gender, mean)
mean_activeE <- by(active, exercise, mean)
print(mean_activeS)
```

```
## smoke: 0
## [1] 90.51942
## -----
## smoke: 1
## [1] 97.46154
```

```
print(mean_activeG)
```

```
## gender: 0
## [1] 88.12295
## -----
## gender: 1
## [1] 94.81818
```

```
print(mean_activeE)
```

```
## exercise: 1
## [1] 101.122
## -----
## exercise: 2
## [1] 94.92308
## -----
## exercise: 3
## [1] 83.97
```

```
mean_restS <- by(rest, smoke, mean)
mean_restG <- by(rest, gender, mean)
mean_restE <- by(rest, exercise, mean)
print(mean_restS)
```

```
## smoke: 0
## [1] 67.79126
## -----
## smoke: 1
## [1] 72.76923
```

```
print(mean_restG)
```

```
## gender: 0
## [1] 66.77869
## -----
## gender: 1
## [1] 70.09091
```

```
print(mean_restE)
```

```
## exercise: 1
## [1] 77.26829
## -----
## exercise: 2
```

```
## [1] 70.41758
## -----
## exercise: 3
## [1] 62.81
```

```
#median
med_hgt <- by(hgt, gender, median)
med_wgt <- by(wgt, gender, median)
print(med_hgt)
```

```
## gender: 0
## [1] 71
## -----
## gender: 1
## [1] 65
```

```
print(med_wgt)
```

```
## gender: 0
## [1] 175
## -----
## gender: 1
## [1] 135
```

```
med_activeS <- by(active, smoke, median)
med_activeG <- by(active, gender, median)
med_activeE <- by(active, exercise, median)
print(med_activeS)
```

```
## smoke: 0
## [1] 88
## -----
## smoke: 1
## [1] 94
```

```
print(med_activeG)
```

```
## gender: 0
## [1] 85.5
## -----
## gender: 1
## [1] 95
```

```
print(med_activeE)
```

```
## exercise: 1
## [1] 97
## -----
## exercise: 2
## [1] 95
## -----
## exercise: 3
## [1] 81.5
```

```
med_restS <- by(rest, smoke, median)
med_restG <- by(rest, gender, median)
med_restE <- by(rest, exercise, median)
print(med_restS)
```

```
## smoke: 0
## [1] 67
## -----
## smoke: 1
## [1] 70
```

```
print(med_restG)
```

```
## gender: 0
## [1] 66
## -----
## gender: 1
## [1] 70
```

```
print(med_restE)
```

```
## exercise: 1
## [1] 74
## -----
## exercise: 2
## [1] 70
## -----
## exercise: 3
## [1] 63
```

```
#variansi
var_hgt <- by(hgt, gender, var)
var_wgt <- by(wgt, gender, var)
print(var_hgt)
```

```
## gender: 0
## [1] 6.033126
## -----
## gender: 1
## [1] 6.171476
```

```
print(var_wgt)
```

```
## gender: 0
## [1] 803.0541
## -----
## gender: 1
## [1] 240.8281
```

```
var_activeS <- by(active, smoke, var)
var_activeG <- by(active, gender, var)
var_activeE <- by(active, exercise, var)
print(var_activeS)
```

```
## smoke: 0
## [1] 350.1338
## -----
## smoke: 1
## [1] 357.2185
```

```
print(var_activeG)
```

```
## gender: 0
## [1] 318.274
## -----
## gender: 1
## [1] 373.5446
```

```
print(var_activeE)
```

```
## exercise: 1
## [1] 459.9098
## -----
## exercise: 2
## [1] 257.2496
## -----
## exercise: 3
## [1] 300.494
```

```
var_restS <- by(rest, smoke, var)
var_restG <- by(rest, gender, var)
var_restE <- by(rest, exercise, var)
print(var_restS)
```

```
## smoke: 0
## [1] 97.04402
## -----
## smoke: 1
## [1] 96.02462
```

```
print(var_restG)
```

```
## gender: 0
## [1] 81.94235
## -----
## gender: 1
## [1] 113.0008
```

```
print(var_restE)
```

```
## exercise: 1
## [1] 114.0012
## -----
## exercise: 2
## [1] 56.09035
## -----
## exercise: 3
## [1] 66.05444
```

```
#QR
Q1_hgt <- by(hgt, gender, function(x) quantile(x, 0.25))
Q3_hgt <- by(hgt, gender, function(x) quantile(x, 0.75))
QR_hgt <- Q3_hgt - Q1_hgt
print(QR_hgt)
```

```
## gender: 0
## [1] 2
## -----
## gender: 1
## [1] 3
```

```
Q1_wgt <- by(wgt, gender, function(x) quantile(x, 0.25))
Q3_wgt <- by(wgt, gender, function(x) quantile(x, 0.75))
QR_wgt <- Q3_wgt - Q1_wgt
print(QR_wgt)
```

```
## gender: 0
## [1] 33.75
## -----
## gender: 1
## [1] 21.75
```

```
Q1_activeS <- by(active, smoke, function(x) quantile(x, 0.25))
Q3_activeS <- by(active, smoke, function(x) quantile(x, 0.75))
QR_activeS <- Q3_activeS - Q1_activeS
print(QR_activeS)
```

```
## smoke: 0
## [1] 23.5
## -----
## smoke: 1
## [1] 27
```

```
Q1_activeG <- by(active, gender, function(x) quantile(x, 0.25))
Q3_activeG <- by(active, gender, function(x) quantile(x, 0.75))
QR_activeG <- Q3_activeG - Q1_activeG
print(QR_activeG)
```

```
## gender: 0
## [1] 21.5
## -----
## gender: 1
## [1] 26.5
```

```
Q1_activeE <- by(active, exercise, function(x) quantile(x, 0.25))
Q3_activeE <- by(active, exercise, function(x) quantile(x, 0.75))
QR_activeE <- Q3_activeE - Q1_activeE
print(QR_activeE)
```

```
## exercise: 1
## [1] 25
## -----
## exercise: 2
## [1] 22
## -----
## exercise: 3
## [1] 23
```

```
Q1_restS <- by(rest, smoke, function(x) quantile(x, 0.25))
Q3_restS <- by(rest, smoke, function(x) quantile(x, 0.75))
QR_restS <- Q3_restS - Q1_restS
print(QR_restS)
```

```
## smoke: 0
## [1] 13
## -----
## smoke: 1
## [1] 10.75
```

```
Q1_restG <- by(rest, gender, function(x) quantile(x, 0.25))
Q3_restG <- by(rest, gender, function(x) quantile(x, 0.75))
QR_restG <- Q3_restG - Q1_restG
print(QR_restG)
```

```
## gender: 0
## [1] 11
## -----
## gender: 1
## [1] 12.75
```

```
Q1_restE <- by(rest, exercise, function(x) quantile(x, 0.25))
Q3_restE <- by(rest, exercise, function(x) quantile(x, 0.75))
QR_restE <- Q3_restE - Q1_restE
print(QR_restE)
```

```
## exercise: 1
## [1] 12
## -----
## exercise: 2
```

```
## [1] 9.5
## -----
## exercise: 3
## [1] 11
```

```
#kofinsi variasi
```

```
#kv <- function(x) {
#  cv <- sd(x) / mean(x) * 100
#  return(cv)
#}
```

```
cv_hgt <- by(hgt, gender, function(x) {sd(x) / mean(x) * 100})
cv_wgt <- by(wgt, gender, function(x) {sd(x) / mean(x) * 100})
print(cv_hgt)
```

```
## gender: 0
## [1] 3.463895
## -----
## gender: 1
## [1] 3.804887
```

```
print(cv_wgt)
```

```
## gender: 0
## [1] 15.86191
## -----
## gender: 1
## [1] 11.50226
```

```
cv_activeS <- by(active, gender, function(x) {sd(x) / mean(x) * 100})
cv_activeG <- by(active, gender, function(x) {sd(x) / mean(x) * 100})
cv_activeE <- by(active, gender, function(x) {sd(x) / mean(x) * 100})
print(cv_activeS)
```

```
## gender: 0
## [1] 20.24471
## -----
## gender: 1
## [1] 20.38354
```

```
print(cv_activeG)
```

```
## gender: 0
## [1] 20.24471
## -----
## gender: 1
## [1] 20.38354
```



```
print(cv_activeE)
```

```
## gender: 0
## [1] 20.24471
## -----
## gender: 1
## [1] 20.38354
```

```
cv_restS <- by(rest, gender, function(x) {sd(x) / mean(x) * 100})
cv_restG <- by(rest, gender, function(x) {sd(x) / mean(x) * 100})
cv_restE <- by(rest, gender, function(x) {sd(x) / mean(x) * 100})
print(cv_restS)
```

```
## gender: 0
## [1] 13.55552
## -----
## gender: 1
## [1] 15.16628
```

```
print(cv_restG)
```

```
## gender: 0
## [1] 13.55552
## -----
## gender: 1
## [1] 15.16628
```

```
print(cv_restE)
```

```
## gender: 0
## [1] 13.55552
## -----
## gender: 1
## [1] 15.16628
```