

# RLect\_MarkDown

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## R Markdown

This is R Markdown practice. make it italic with *italic* and this is **bold**.

## Header 1

### Header 2

generate 10 observations from standard normal distribution

```
norm = rnorm(10)

norm

## [1] -0.6357273 -0.8263805 -0.2755015 -0.8254345 -0.4206581 -1.0432003
## [7] 1.5507640 -0.8913431  0.3477548 -0.3869985
```

Link

$$A = \pi \times r^2$$

```
A <- c("a", "a", "b", "b")
B <- c(5, 10, 15, 20)
dataframe <- data.frame(A, B)
print(dataframe)
```

```
##   A   B
## 1 a   5
## 2 a  10
## 3 b  15
## 4 b  20
```

Hiding code Chunk

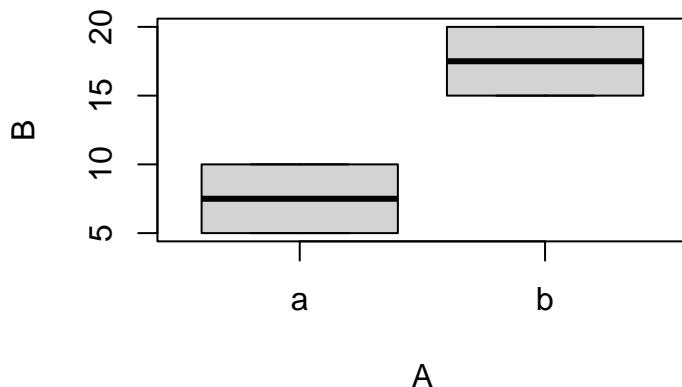
```
##   A   B
## 1 a   5
## 2 a  10
## 3 b  15
## 4 b  20
```

## Inserting Figures

```
A <- c("a", "a", "b", "b")
B <- c(5, 10, 15, 20)
dataframe <- data.frame(A, B)
print(dataframe)
```

```
##   A   B
## 1 a   5
## 2 a 10
## 3 b 15
## 4 b 20
```

```
boxplot(B~A, data=dataframe)
```



#Inserting Tables

kable() function from knitr package

pander function from pander package

```
library(pander)
plant <- c("a", "b", "c")
temperature <- c(20, 20, 20)
growth <- c(0.65, 0.95, 0.15)
dataframe <- data.frame(plant, temperature, growth)
emphasize.italics.cols(3)    # Make the 3rd column italics
pander(dataframe)           # Create the table
```

plant	temperature	growth
a	20	0.65
b	20	0.95

plant	temperature	growth
c	20	0.15

```
library(broom)
library(pander)
A <- c(20, 15, 10)
B <- c(1, 2, 3)

lm_test <- lm(A ~ B)           # Creating linear model

table_obj <- tidy(lm_test)      # Using tidy() to create a new R object called table

pander(table_obj, digits = 3)   # Using pander() to view the created table, with 3 sig figs
```

term	estimate	std.error	statistic	p.value
(Intercept)	25	4.07e-15	6.14e+15	1.04e-16
B	-5	1.88e-15	-2.65e+15	2.4e-16

## Summary statistics

```
norm = rnorm(100)

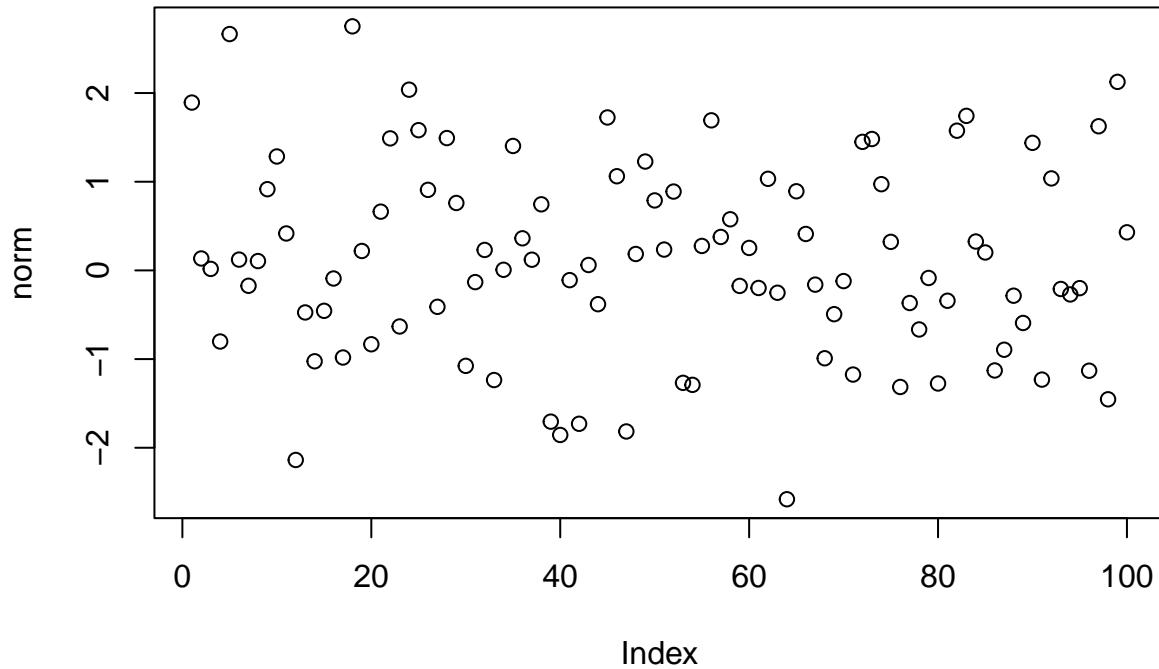
mean(norm)

## [1] 0.1052865

sd(norm)

## [1] 1.09408

plot(norm)
```



```
x <- rnorm(100)
e <- rnorm(100, mean = 0, sd = 5)
y <- 5 + 15 * x + e

m = lm(y~x)
summary(m)
```

```
##
## Call:
## lm(formula = y ~ x)
##
## Residuals:
##      Min      1Q      Median      3Q      Max 
## -10.3969 -3.1917 -0.1297  3.0735 14.5542 
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) 5.1515     0.5209   9.889 <2e-16 ***
## x          15.0451    0.5313  28.317 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Residual standard error: 5.196 on 98 degrees of freedom
## Multiple R-squared:  0.8911, Adjusted R-squared:  0.89 
## F-statistic: 801.8 on 1 and 98 DF,  p-value: < 2.2e-16
```

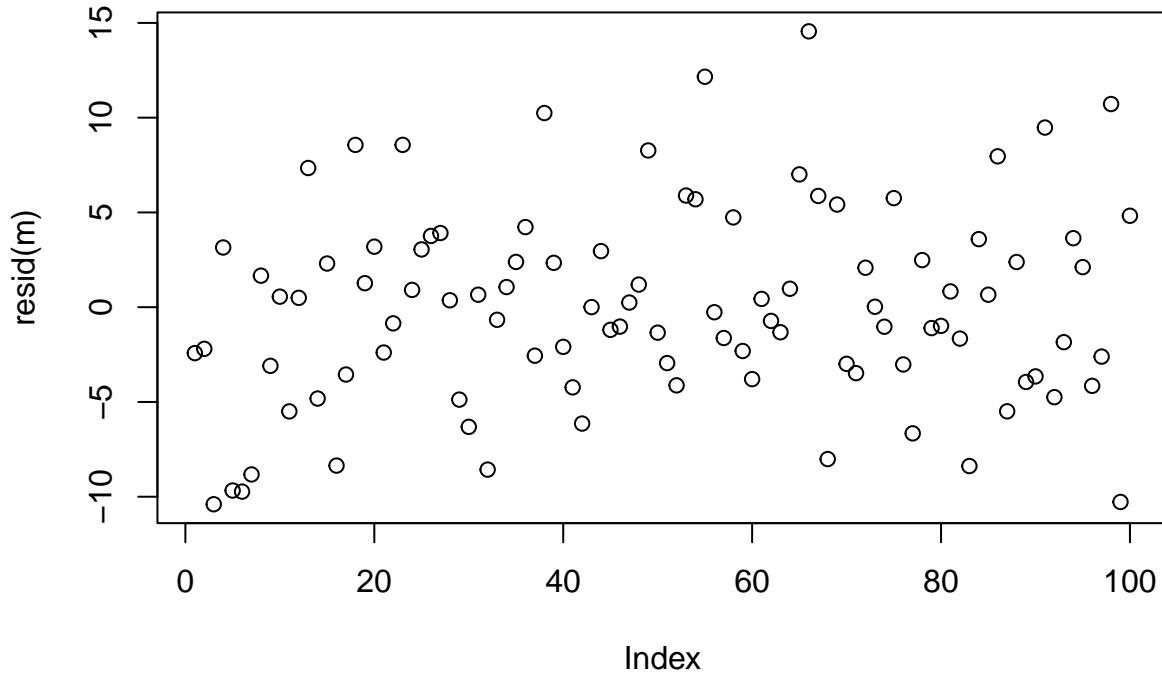
```
resid(m)
```

```
##      1          2          3          4          5
## -2.422733214 -2.197594523 -10.396882442  3.151085509 -9.672288381
##      6          7          8          9         10
## -9.730476455 -8.824776116  1.663469166 -3.095628819  0.556884912
##     11         12         13         14         15
## -5.498529159  0.493871803  7.343298448 -4.819750404  2.303258605
##     16         17         18         19         20
## -8.357018354 -3.552655408  8.562357292  1.266720231  3.193007621
##     21         22         23         24         25
## -2.392765283 -0.852215905  8.565111322  0.911703621  3.047681103
##     26         27         28         29         30
##  3.758830418  3.913272272  0.364890265 -4.876692242 -6.314400824
##     31         32         33         34         35
##  0.658299486 -8.570308960 -0.664608879  1.063342100  2.387545200
##     36         37         38         39         40
##  4.227044393 -2.559389864 10.244205562  2.340020196 -2.093355487
##     41         42         43         44         45
## -4.229794903 -6.139289902  0.005371891  2.958999411 -1.194313313
##     46         47         48         49         50
## -1.023924354  0.245349994  1.194056882  8.269364352 -1.344238262
##     51         52         53         54         55
## -2.948646721 -4.123522895  5.891415858  5.694723620 12.158321832
##     56         57         58         59         60
## -0.264782027 -1.625467499  4.737204831 -2.310610537 -3.795481830
##     61         62         63         64         65
##  0.436816043 -0.723997151 -1.322104145  0.972419672  7.008063116
##     66         67         68         69         70
## 14.554241250  5.869219850 -8.014343634  5.416052737 -2.989229357
##     71         72         73         74         75
## -3.479951524  2.081470510  0.023464336 -1.030330989  5.755785462
##     76         77         78         79         80
## -3.021254555 -6.658173064  2.485514621 -1.102405086 -0.985869433
##     81         82         83         84         85
##  0.831524773 -1.656435786 -8.380867510  3.591085979  0.658759093
##     86         87         88         89         90
##  7.960275014 -5.493779191  2.383681281 -3.944611049 -3.652770462
##     91         92         93         94         95
##  9.477540076 -4.747459894 -1.844799852  3.640975190  2.114141660
##     96         97         98         99        100
## -4.150817969 -2.606657603 10.719311475 -10.276933883  4.823884761
```

```
head(resid(m))
```

```
##      1          2          3          4          5          6
## -2.422733 -2.197595 -10.396882  3.151086 -9.672288 -9.730476
```

```
plot(resid(m))
```



```

u <- rnorm(100)
v <- rnorm(100, mean = 3, sd = 2)
w <- rnorm(100, mean = -3, sd = 1)
e <- rnorm(100, mean = 0, sd = 3)

q= lm(y ~ u + v + w)
summary(q)

##
## Call:
## lm(formula = y ~ u + v + w)
##
## Residuals:
##      Min       1Q   Median       3Q      Max 
## -38.977  -9.836   0.052   9.561  34.300 
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -0.4749    5.4967  -0.086   0.9313    
## u            2.0099    1.5842   1.269   0.2076    
## v            1.5829    0.7373   2.147   0.0343 *  
## w            0.2841    1.5188   0.187   0.8520    
## ---        
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```
## Residual standard error: 15.42 on 96 degrees of freedom
## Multiple R-squared:  0.06078,   Adjusted R-squared:  0.03143
## F-statistic: 2.071 on 3 and 96 DF,  p-value: 0.1092
```

```
plot(resid(q))
```

