

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

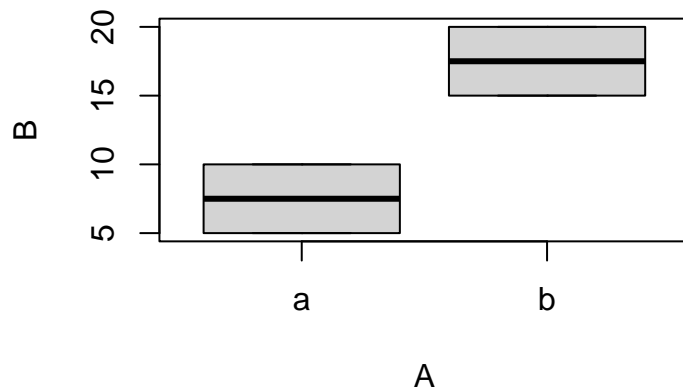
```
##   A  B
## 1 a  5
## 2 a 10
## 3 b 15
## 4 b 20
```

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)

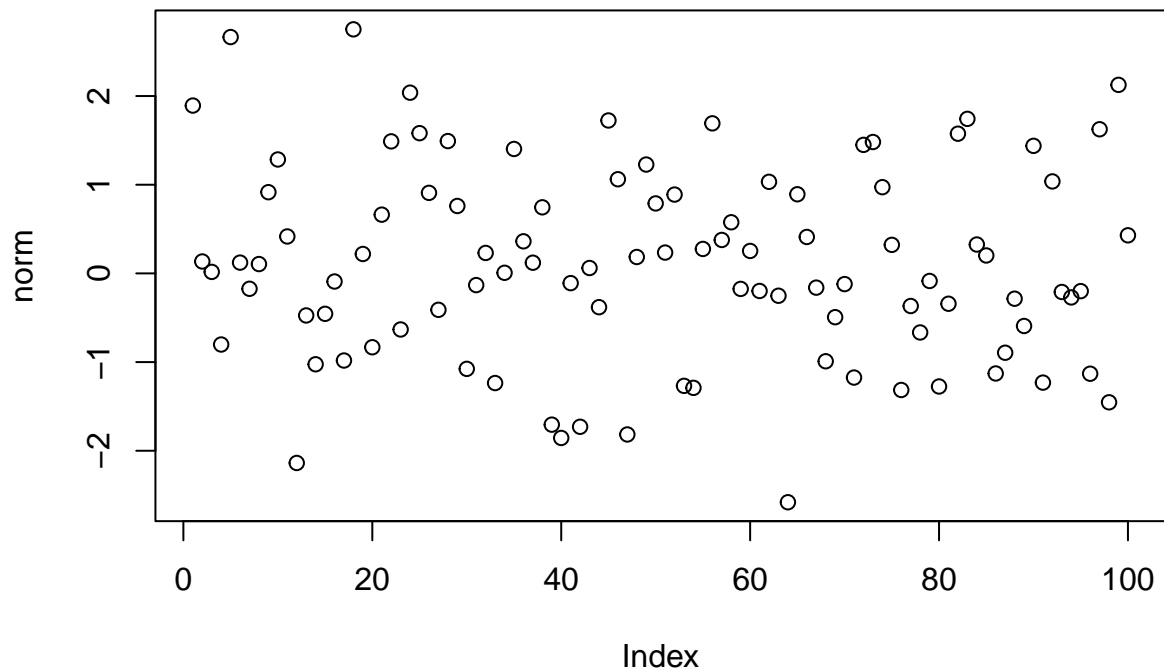
mean(norm)
```

```
## [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
```

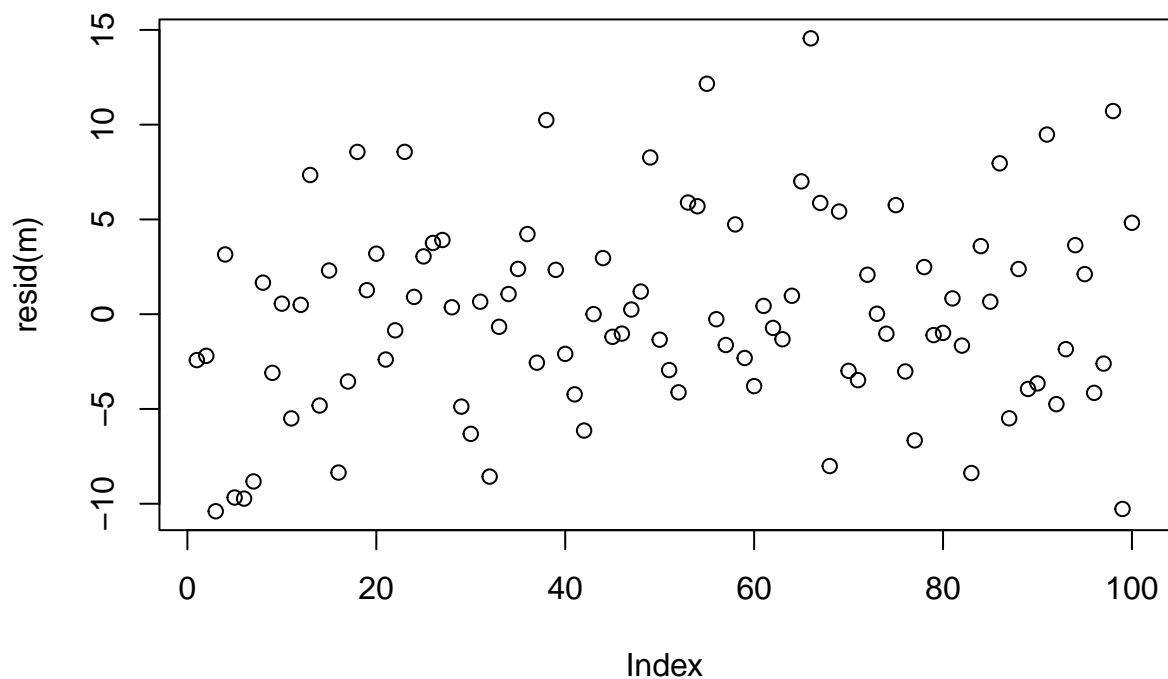
```
resid(m)
```

```
##           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))
```

