Lab-1.R

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```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5      v purrr    0.3.4
## v tibble  3.1.4      v dplyr    1.0.7
## v tidyr   1.1.3      v stringr 1.4.0
## v readr   2.0.1      v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
### R-Norm Function  is for random generation
?rnorm

rnorm(10,mean=1,sd=1)
```

```
##  [1]  1.3014364 -0.1121437 -0.9509809  1.6472646 -0.1586375  1.7297402
##  [7]  1.9156157  1.0143708  1.7055626  3.1048847
```
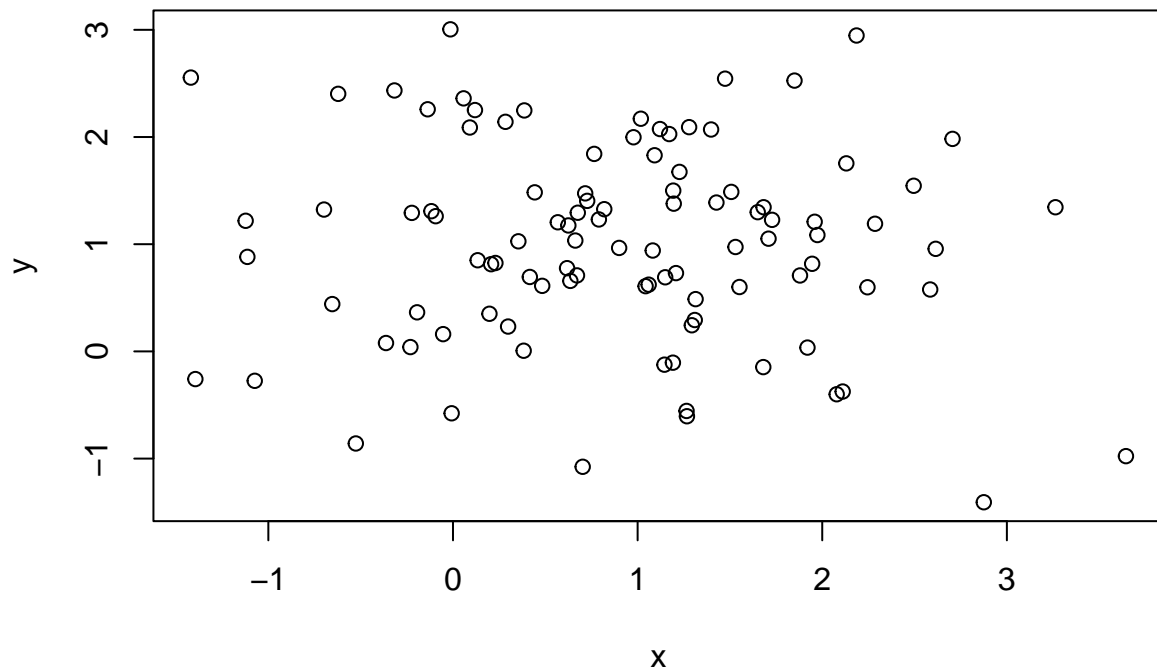
```
# dnorm(x, mean = 0, sd = 1, log = FALSE) -> Density
# pnorm(q, mean = 0, sd = 1, lower.tail = TRUE, log.p = FALSE) -> distribution function
# qnorm(p, mean = 0, sd = 1, lower.tail = TRUE, log.p = FALSE) -> quantile function
# rnorm(n, mean = 0, sd = 1) -> random deviates

#runif -> random variables

x = rnorm(100,mean = 1,sd = 1 )

y = rnorm(100,mean=1,sd = 1 )

plot(x,y)
```

mpg

```
## # A tibble: 234 x 11
##    manufacturer model       displ  year   cyl trans drv     cty   hwy fl    class
##    <chr>        <chr>       <dbl> <int> <int> <chr> <chr> <int> <int> <chr> <chr>
##  1 audi         a4            1.8  1999     4 auto~ f        18    29 p     comp~
##  2 audi         a4            1.8  1999     4 manu~ f        21    29 p     comp~
##  3 audi         a4            2    2008     4 manu~ f        20    31 p     comp~
##  4 audi         a4            2    2008     4 auto~ f        21    30 p     comp~
##  5 audi         a4            2.8  1999     6 auto~ f        16    26 p     comp~
##  6 audi         a4            2.8  1999     6 manu~ f        18    26 p     comp~
##  7 audi         a4            3.1  2008     6 auto~ f        18    27 p     comp~
##  8 audi         a4 quattro    1.8  1999     4 manu~ 4        18    26 p     comp~
##  9 audi         a4 quattro    1.8  1999     4 auto~ 4        16    25 p     comp~
## 10 audi         a4 quattro    2    2008     4 manu~ 4        20    28 p     comp~
## # ... with 224 more rows
```

```
# Summary Function
summary(mpg)
```

```
##  manufacturer          model               displ           year
##  Length:234         Length:234         Min.   :1.600   Min.   :1999
##  Class :character   Class :character   1st Qu.:2.400   1st Qu.:1999
##  Mode  :character   Mode  :character   Median :3.300   Median :2004
##                                        Mean   :3.472   Mean   :2004
```

```
##                                     3rd Qu.:4.600   3rd Qu.:2008
##                                     Max.   :7.000   Max.   :2008
##       cyl            trans              drv               cty
##  Min.   :4.000   Length:234        Length:234        Min.   : 9.00
##  1st Qu.:4.000   Class :character   Class :character   1st Qu.:14.00
##  Median :6.000   Mode  :character   Mode  :character   Median :17.00
##  Mean   :5.889                                         Mean   :16.86
##  3rd Qu.:8.000                                         3rd Qu.:19.00
##  Max.   :8.000                                         Max.   :35.00
##       hwy            fl               class
##  Min.   :12.00   Length:234        Length:234
##  1st Qu.:18.00   Class :character   Class :character
##  Median :24.00   Mode  :character   Mode  :character
##  Mean   :23.44
##  3rd Qu.:27.00
##  Max.   :44.00
```