

RWorksheet_Callanga#2

Niel Andrew Callanga

2022-10-07

```
install.packages("rmarkdown")
install.packages("devtools")
tinytex::install_tinytex()

#1 Create a vector using : operator
#1.a Sequence from -5 to 5
seq <- -5:5
seq

#Output
#[1] -5 -4 -3 -2 -1  0  1  2  3  4  5
#It will display negative and positive numbers and have a 0 at the center of it.

#2.a x <- 1:7. What will be the value of x?
x <- 1:7
x
#Output
#[1] 1 2 3 4 5 6 7

#2 Create a vector using seq() function
#a seq(1, 3, by=0.2) # specify step size
#Write the R code and its output. Describe the output.

seq(1,3,by= 0.2)

#Output
#1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0
#It increases its value by .2 until it reaches its maximum value at 3

#3 A factory has a census of its workers. There are 50 workers in total.
The following list shows their ages:
workers_age <- c(34, 28, 22, 36, 27, 18, 52, 39, 42, 29, 35, 31, 27,
                22, 37, 34, 19, 20, 57, 49, 50, 37, 46, 25, 17, 37, 43, 53, 41,
                51, 35,
                24,33, 41, 53, 40, 18, 44, 38, 41, 48, 27, 39, 19, 30, 61, 54,
                58, 26,
                18)

#3.a Access 3rd element, what is the value?
workers_age[3]
#Output
#[1] 22
```

```

#3.b Access 2nd and 4th element, what are the values?
workers_age[2]
#Output
#[1] 28
workers_age[4]
#Output
#[1] 36

#3.c Access all but the 1st element is not included. Write the R code and
its output.
workers_age[2:50]
#Output:
#[1] 28 22 36 27 18 52 39 42 29 35 31 27 22 37 34 19 20 57 49 50 37 46 25
17 37 43 53 41 51 35 24 33
#[33] 41 53 40 18 44 38 41 48 27 39 19 30 61 54 58 26 18

#4 a-b Create a vector x <- c("first"=3, "second"=0, "third"=9). Then named the
vector, names(x).
# Print the results. Then access x[c("first", "third")]. Describe the output.
x <- c("first"=3, "second"=0, "third"=9)
x[c("first", "third")]
names(x)

#Output:
#"first" "second" "third"
#It was only the characters that were displayed from the vector.

#5. Create a sequence x from -3:2.
#a. Modify 2nd element and change it to 0;
x <- -3:2
x
#Output
# -3 -2 -1 0 1 2
x[2] <- 0
x

#Output:
# -3 0 -1 0 1 2
#It displays a sequence of negative and positive numbers.

#6. The following data shows the diesel fuel purchased by Mr. Cruz.

Month <- c("Jan", "Feb", "March", "Apr", "May", "June")
Price_per_liter_php <- c(52.50, 57.25, 60.00, 65.00, 74.25, 54.00)
Purchase_quantity_liter <- c(25, 30, 40, 50, 10, 45)

#a a. Create a data frame for month, price per liter (php) and
purchase-quantity (liter). Write the codes.
data_frame <- data.frame(Month, Price_per_liter_php, Purchase_quantity_liter )
data_frame

```

```

#Output
#Month Price_per_liter_php Purchase_quantity_liter
#1 Jan 52.50 25
#2 Feb 57.25 30
#3 March 60.00 40
#4 Apr 65.00 50
#5 May 74.25 10
#6 June 54.00 45

#b b. What is the average fuel expenditure of Mr. Cruz from Jan to June?
Note: Use
#weighted.mean(liter, purchase)

weighted.mean(Price_per_liter_php, Purchase_quantity_liter)
#Output
#59.2625

#7) R has actually lots of built-in datasets. For example, the rivers data
"gives the lengths (in miles) of 141 "major" rivers in North America, as
compiled by the US Geological Survey".

#a.
data <- c(length(rivers), sum(rivers), mean(rivers), median(rivers),
          var(rivers), sd(rivers), min(rivers), max(rivers))

data
#Output
#141.0000 83357.0000 591.1844 425.0000 243908.4086 493.8708
135.0000 3710.0000

#8. The table below gives the 25 most powerful celebrities and their annual
pay as ranked by the editions of Forbes magazine and as listed on the
Forbes.com website.

PowerRanking <- 1:25

#a. Create vectors according to the above table. Write the codes.
CelebrityName <- c("Tom Cruise", "Rolling Stones", "Oprah Winfrey", "U2",
                  "Tiger Woods", "Steven Spielberg", "Howard Stern",
                  "50 Cent", "Cast of the sopranos",
                  "Dan Brown", "Bruce Springsteen", "Donald Trump",
                  "Muhammad Ali", "Paul McCartney",
                  "George Lucas", "Elton John", "David Letterman",
                  "Phil Mickelson", "J.K Rowling",
                  "Bradd Pitt", "Peter Jackson", "Dr. Phil McGraw",
                  "Jay Lenon", "Celine Dion", "Kobe Bryant")
Pay <- c(67, 90, 225, 110, 90, 332, 302, 41, 52, 88, 55, 44, 55, 40,
        233, 34, 40, 47, 75, 25, 39, 45, 32, 40, 31)

Data_Ranking <- data.frame(PowerRanking, CelebrityName, Pay)
Data_Ranking

```

```
#b    Modify the power ranking and pay of J.K. Rowling. Change power ranking
to 15 and pay to 90. Write the codes and its output.
```

```
PowerRanking [19] <- 15
```

```
PowerRanking
```

```
#Output
```

```
# 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 15 20 21 22 23 24 25
```

```
Pay [19] <- 90
```

```
Pay
```

```
#Output
```

```
#67  90 225 110  90 332 302  41  52  88  55  44  55  40 233  34  40  47  90
```

```
25  39  45  32  40
```

```
#31
```

```
#c    Interpret the data.
```

```
Magazine_Ranking <- data.frame(PowerRanking, CelebrityName, Pay)
```

```
Magazine_Ranking
```

```
#Output
```

#	PowerRanking	CelebrityName	Pay
# 1	1	Tom Cruise	67
# 2	2	Rolling Stones	90
# 3	3	Oprah Winfrey	225
# 4	4	U2	110
# 5	5	Tiger Woods	90
# 6	6	Steven Spielberg	332
# 7	7	Howard Stern	302
# 8	8	50 Cent	41
# 9	9	Cast of the sopranos	52
# 10	10	Dan Brown	88
# 11	11	Bruce Springsteen	55
# 12	12	Donald Trump	44
# 13	13	Muhammad Ali	55
# 14	14	Paul McCartney	40
# 15	15	George Lucas	233
# 16	16	Elton John	34
# 17	17	David Letterman	40
# 18	18	Phil Mickelson	47
# 19	15	J.K Rowling	90
# 20	20	Bradd Pitt	25
# 21	21	Peter Jackson	39
# 22	22	Dr. Phil McGraw	45
# 23	23	Jay Lenon	32
# 24	24	Celine Dion	40
# 25	25	Kobe Bryant	31

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>.

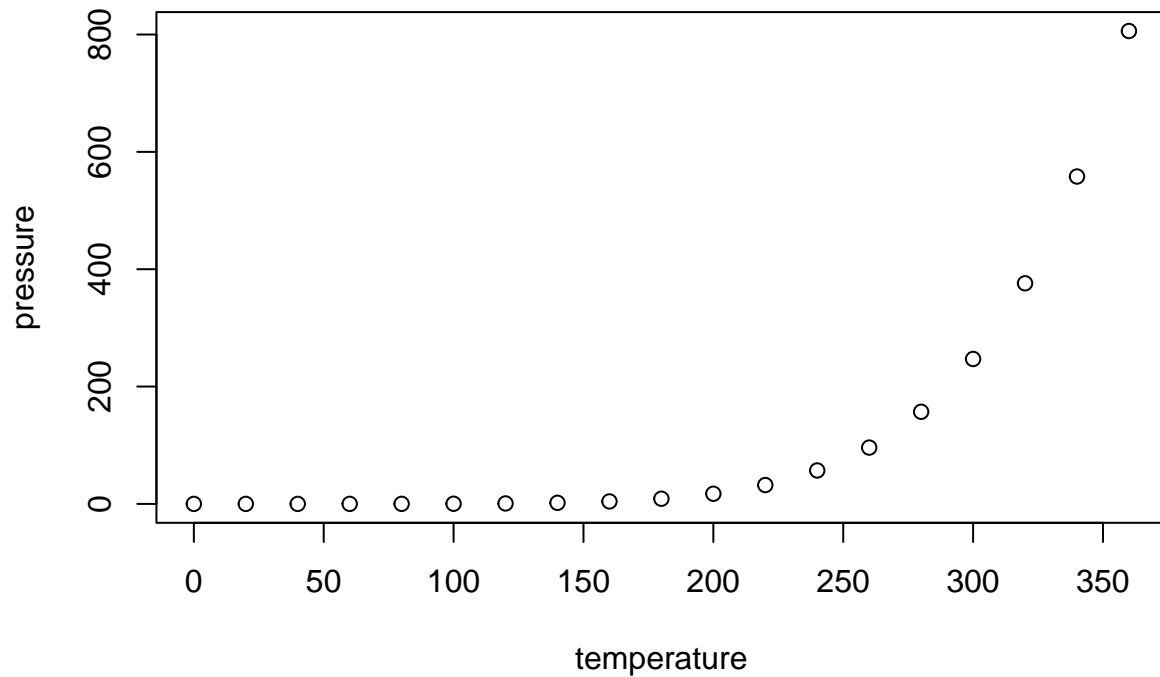
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
## 1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##   Mean  :15.4    Mean   : 42.98
## 3rd Qu.:19.0    3rd Qu.: 56.00
##   Max.  :25.0    Max.    :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.