

RWorksheet_Callanga#2

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2022-10-06

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

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

#2.a x <- 1:7. What will be the value of x?
x <- 1:7
x

#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)

#3 3. A factory has a census of its workers. There are 50 workers in total. The following list shows
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]
#3.b Access 2nd and 4th element, what are the values?
workers_age[2]
workers_age[4]
#3.c Access all but the 1st element is not included. Write the R code and its output.
workers_age[2:50]

#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)
```

```

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

  x[2] <- 0
  x

#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 code.
  data_frame <- data.frame(Month, Price_per_liter_php, Purchase_quantity_liter )
  data_frame

  #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)

#7) R has actually lots of built-in datasets. For example, the rivers data "gives the lengths (in miles) of the rivers in the United States."

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

#88. The table below gives the 25 most powerful celebrities and their annual pay as ranked by the Entertainment Weekly magazine.

  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 soprano",
                    "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, 100, 100)

  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 code.
  PowerRanking [19] <- 15
  PowerRanking
  Pay [19] <- 90
  Pay

```

```
#c    Interpret the data.
Magazine_Ranking <- data.frame(PowerRanking, CelebrityName, Pay)
Magazine_Ranking
```

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.