

WORKSHEET

BRYCE KENDRIC SALADAR

2022-10-06

#1. Create a vector using : operator

#a. Sequence from -5 to 5. Write the R code and its output. Describe its output.

```
output <- -5:5  
output
```

```
## [1] -5 -4 -3 -2 -1 0 1 2 3 4 5
```

#b. `x <- 1:7`. What will be the value of x?

```
x <- 1:7  
x
```

```
## [1] 1 2 3 4 5 6 7
```

the value of x is the numbers 1 to 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)
```

```
## [1] 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0
```

#the value of the object are from 1 to 3 with a 0.2 gap

#3. A factory has a census of its workers. There are 50 workers #in total. The following list shows their

ages: 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.

```
Workers <- 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,
Workers
```

```
## [1] 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
## [26] 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
```

#a. Access 3rd element, what is the value?

```
third_elem <- c(Workers[3])
third_elem
```

```
## [1] 22
```

#b. Access 2nd and 4th element, what are the values?

```
secforth_elem <- Workers[c(2,4)]
secforth_elem
```

```
## [1] 28 36
```

#c. Access all but the 1st element is not included. Write the R code and its output.

```
all <- Workers[c(2:50)]
all
```

```
## [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
## [26] 43 53 41 51 35 24 33 41 53 40 18 44 38 41 48 27 39 19 30 61 54 58 26 18
```

#4 *Create a vector x <- c("first"=3, "second"=0, "third"=9). Then named the #vector,names(x).

```
x <- c("first"=3, "second"=0, "third"=9)
x
```

```
## first second third
##      3      0      9
```

#a. Print the results. Then access x[c("first", "third")].Describe the output.

```
x <- x[c("first", "third")]
x
```

```
## first third
##      3      9
```

the output are 3 and 9 which are associated at our character “first and third

#b. Write the code and its output.

```
x <- x[c("first", "third")]
x
```

```
## first third
##      3      9
```

```
num <- -3:2
num
```

```
## [1] -3 -2 -1  0  1  2
```

#a. Modify 2nd element and change it to 0; #x[2] <- 0 #x #Describe the output.

```
x[2] <- 0
x
```

```
## first third
##      3      0
```

#the value of the index in array was substitute to 0.

#b Write the code and its output.

```
x[2] <- 0
x
```

```
## first third
##      3      0
```

```
[1] -3 0 -1 0 1 2
```

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

```
diesel <- data.frame (
  Month = c("Price per liter(Php)", "Purchase-quantity(Liters)"),
  Jan = c(52.50, 25),
  Feb = c(57.25, 30),
  March = c(60.00, 40),
  Apr = c(65.00, 50),
  May = c(74.25, 10),
  June = c(54.00, 45)
)
diesel
```

```
##           Month  Jan   Feb March Apr   May June
## 1 Price per liter(Php) 52.5 57.25   60  65 74.25  54
## 2 Purchase-quantity(Liters) 25.0 30.00   40  50 10.00  45
```

#b.What is the average fuel expenditure of Mr. Cruz from Jan to June? Note: Use weighted.mean(liter, purchase) Jan = c(52.50, 25) Feb = c(57.25, 30) March = c(60.00, 40) Apr = c(65.00, 50) May = c(74.25, 10) June = c(54.00, 45)

```
fuel <- weighted.mean(Jan, Feb, March, Apr, May, June) fuel [1] 43.04441
```

#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 Type “rivers” in your R console. Create a vector data with 7 elements, containing the number of elements (length) in rivers, their sum (sum), mean (mean), median (median), variance (var) standard deviation (sd), minimum (min) and maximum (max).

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

```
## [1] 141.0000 83357.0000 591.1844 425.0000 243908.4086 493.8708
## [7] 135.0000 3710.0000
```

#b. What are the results? #The results are the datasets of major rivers in North America.

#c Write the code and its outputs.

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

```
## [1] 141.0000 83357.0000 591.1844 425.0000 243908.4086 493.8708
## [7] 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.

#a. Create vectors according to the above table. Write the codes.

```
PowerRanking <- 1:25
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", "Brad Pitt", "Peter Jackson", "Dr. Phil McGraw", "Jay Lenon", "Celine Dion", "Kobe Bryant")
PowerRanking
```

```
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
```

```
CelebrityName
```

```
## [1] "Tom Cruise" "Rolling Stones" "Oprah Winfrey"
## [4] "U2" "Tiger Woods" "Steven Spielberg"
## [7] "Howard Stern" "50 Cent" "Cast of the Sopranos"
## [10] "Dan Brown" "Bruce Springsteen" "Donald Trump"
## [13] "Muhammad Ali" "Paul McCartney" "George Lucas"
## [16] "Elton John" "David Letterman" "Phil Mickelson"
## [19] "J.K. Rowling" "Brad Pitt" "Peter Jackson"
## [22] "Dr. Phil McGraw" "Jay Lenon" "Celine Dion"
## [25] "Kobe Bryant"
```

```
PowerRanking <- 1:25
```

```
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, 31)
Pay
```

```
## [1] 67 90 225 110 90 332 302 41 52 88 55 44 55 40 233 34 40 47 75
## [20] 25 39 45 32 40 31
```

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

```
##      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 thesopranos 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            19      J.K Rowling  75
## 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
```

#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
```

```
## [1] 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
```

```
## [1] 67 90 225 110 90 332 302 41 52 88 55 44 55 40 233 34 40 47 90
## [20] 25 39 45 32 40 31
```

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

```
##      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 thesopranos 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
```

#c. Interpret the data. # The data shows the annual pay of the list of celebrity in the list from Tom Cruise to Kobe Bryant according to Forbes in there website.