RWorksheet_rocillo#2

Cassandra Jielin Rocillo

2024-09-22

1. Create a vector using: operator

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

```
sequence <- (-5: 5)
print(sequence)
```

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

Describe its output -The output shows number from -5 to 5

b. x <- 1:7. What ill be the value of x?

```
  x <- 1: 7
print(x)
```

```
## [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

```
  sequence <- seq(1, 3, by=0.2)
  print(sequence)
```

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

Describe the output - The output shows the number starting 1 to 3 in 0.2 sequence.

3. A factor 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, 3
```

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

```
  third <- workers_age[3]
  print(third)
```

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

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

```
 second <- workers_age[2]
 fourth <- workers_age[4]
 print(second)
```

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

```
 print(fourth)
```

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

c. Access all but the 4th and 12th element is not included.

```
  all <- workers_age[c(- 4, -12)]
  print(all)
```

```
##  [1] 34 28 22 27 18 52 39 42 29 35 27 22 37 34 19 20 57 49 50 37 46 25 17 37 43
## [26] 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)
print(x)
```

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

a. Print the result. Then access x[c("first", "third")]

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

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

Describe the output. - The output shows how to name a vector and how to accessthe elements using their names.

5. Create a sequence x from -3:2.

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

```
x <- -3:2
x[2] <- 0
print(x)
```

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

Describe the output. -The output shows a number from -3 to 2 but the second in the sequence become 0 as it was stated in the code the 2nd in the sequence of x will result to 0.

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

Month Jan Feb March Apr May June Price per liter (PhP) 52.50 57.25 60.00 65.00 74.25 54.00 Purchase–quantity(Liters) 25 30 40 50 10 45

a. Create a data frame for month, price liter (php) and purchase-quality(liter). Write the R scripts and its output.

```
  month <- c("Jan", "Feb", "March", "Apr", "May", "June")
  price_php <- c(52.50, 57.25, 60.00, 65.00, 74.25, 54.00)
  liter <- c(25, 30, 40, 50, 10, 45)

  purchased_data <- data.frame(Month = month, Price_php = price_php, Liter = liter)
  print(purchased_data)
```

```
##   Month Price_php 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. What is the average fuel expenditure of Mr. Cruz from Jan to June? Notes: Use 'weighted.mean(liter, purchase).

```
  average_exp <- weighted.mean(price_php, liter)
print(average_exp)
```

```
## [1] 59.2625
```

7. R has actually lots of built-in datasets. For example, the rivers data "gives the legths (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(riv
  print(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 result shows the:

- Length of rivers - 141.0000
- Sum of river lengths - 83, 357.0000
- Mean of river lengths - 591.1844
- Median of river lengths - 425.0000
- var of river lengths - 243, 908.4086
- sd of river lengths - 493.8708
- min river length - 135.0000
- max river length - 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 a vectors according to the above table.

```
  ranking <- 1:25
  celebrity_name <- c("Tom Cruise", "Rolling Stones", "Oprah Winfrey", "U2", "Tiger Woods", "Steven Spi

pay <- c(67, 90, 225, 110, 90, 332, 302, 41, 52, 88, 55, 44, 55, 40, 233, 34, 40, 47, 75, 25, 39, 45, 3

celebrities <- data.frame(Ranking = ranking, Celebrity_name = celebrity_name, Pay = pay)

print(celebrities)
```

```
##    Ranking       Celebrity_name 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      19         J.K. Rowling  75
## 20      20            Brad 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.

```
celebrities[celebrities$Celebrity_name == "J.K. Rowling", ] <- c(15, "J.K. Rowling", 90, NA)
celebrities$Row_num <- NULL

print(celebrities)
```

```
##    Ranking       Celebrity_name 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      19         J.K. Rowling  75
## 20      20            Brad 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. Create an excel file from the table above and save it as cvs file(PowerRanking). Import the cvs file into the Rstudio.

9. Download the Hotels