

RWorksheet_Cahutay#1.Rmd

2024-09-04

1. A. Find the number of data points.

```
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, 42, 53, 41,  
51, 35, 24, 33, 41)  
length(age)
```

```
## [1] 34
```

- There are 34 data points

2. Find Reciprocal

```
reciprocal <- 1 / age  
reciprocal
```

```
## [1] 0.02941176 0.03571429 0.04545455 0.02777778 0.03703704 0.05555556  
## [7] 0.01923077 0.02564103 0.02380952 0.03448276 0.02857143 0.03225806  
## [13] 0.03703704 0.04545455 0.02702703 0.02941176 0.05263158 0.05000000  
## [19] 0.01754386 0.02040816 0.02000000 0.02702703 0.02173913 0.04000000  
## [25] 0.05882353 0.02702703 0.02380952 0.01886792 0.02439024 0.01960784  
## [31] 0.02857143 0.04166667 0.03030303 0.02439024
```

- 3.

```
new_age <- c(age, 0, age)  
new_age
```

```
## [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 42 53 41 51 35 24 33 41 0 34 28 22 36 27 18 52 39 42 29 35 31 27 22 37  
## [51] 34 19 20 57 49 50 37 46 25 17 37 42 53 41 51 35 24 33 41
```

- It created a vector that stores the elements of age, and added zero for the element 2, and then the age values again stored at element 3.

4. Sort values for age.

```
sort(age)
```

```
## [1] 17 18 19 20 22 22 24 25 27 27 28 29 31 33 34 34 35 35 36 37 37 37 39 41 41  
## [26] 42 42 46 49 50 51 52 53 57
```

5. Min and Max

```
min(age)
```

```
## [1] 17
```

```
max(age)
```

```
## [1] 57
```

- The minimum is 17 and 57 is the maximum.

6. A.

- There are 12 data points

```
data <- c(2.4, 2.8, 2.1, 2.5, 2.4, 2.2, 2.5,
2.3, 2.5, 2.3, 2.4, 2.7)
length(data)
```

```
## [1] 12
```

```
data
```

```
## [1] 2.4 2.8 2.1 2.5 2.4 2.2 2.5 2.3 2.5 2.3 2.4 2.7
```

7. Double data

```
double_data <- data * 2
data
```

```
## [1] 2.4 2.8 2.1 2.5 2.4 2.2 2.5 2.3 2.5 2.3 2.4 2.7
```

```
double_data
```

```
## [1] 4.8 5.6 4.2 5.0 4.8 4.4 5.0 4.6 5.0 4.6 4.8 5.4
```

- The data doubled

8. Sequence

```
#8.1 - sequence from 1 - 100
sequence1 <- seq(1, 100)
```

```
#8.2 sequence from 20 - 60
sequence2 <- seq(20, 60)
```

```
#8.3 - mean of numbers from 20 - 60 is 40.
my_mean <- mean(20, 60)
```

```
#8.4 - sum of numbers from 51 - 91
sumOfNum <- sum(51:91)
```

```
#8.5 sequence from 1 - 1000
sequence3 <- seq(1, 1000)
```

```
#8.A. - data points from 8.1 - 8.4
data_pts <- c(sequence1, sequence2, my_mean, sumOfNum)
length(data_pts)
```

```
## [1] 143
```

```
# the number of data points is 143
#below are the output
sequence1
```

```
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
## [19] 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
## [37] 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
## [55] 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72
## [73] 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
## [91] 91 92 93 94 95 96 97 98 99 100
```

```
sequence2

## [1] 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
## [26] 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
my_mean
```

```
## [1] 20
```

```
sumOfNum
```

```
## [1] 2911
```

```
#8.5 - max data points until 10.
```

```
max(1, 10)
```

```
## [1] 10
```

9.

```
filtered <- Filter(function(i) { all(i %% c(3,5,7) != 0) }, seq(100))
filtered
```

```
## [1] 1 2 4 8 11 13 16 17 19 22 23 26 29 31 32 34 37 38 41 43 44 46 47 52 53
## [26] 58 59 61 62 64 67 68 71 73 74 76 79 82 83 86 88 89 92 94 97
```

10 - 11.

```
#10. Backward sequence
```

```
vector1 <- seq(100, 1)
```

```
# 11. filtered numbers below 25 and multiples of 3 and 5
```

```
filtered_numbers <- Filter(function(i) { (i %% 3 == 0 || i %% 5 == 0) }, seq(1:25))
filtered_numbers
```

```
## [1] 3 5 6 9 10 12 15 18 20 21 24 25
```

```
#A.
```

```
data_pts2 <- c(vector1, filtered_numbers)
```

```
length(data_pts2)
```

```
## [1] 112
```

```
# number of data points is 112
```

12.

```
#x <- {0 + x + 5 + }
```

```
# there's an error saying "unexpected '}'"
```

13. Vector

```
score <- c(72, 86, 92, 63, 88, 89, 91, 92, 75,
75, 77)
score[2]
```

```
## [1] 86
```

```
score[3]
```

```
## [1] 92
```

14.

```
a = c(1,2,NA,4,NA,6,7)
print(a,na.print="-999")
```

```
## [1]      1      2 -999      4 -999      6      7
```

```
# the NA values of the vector 'a' was changed to -999 using the code 'a, na.print="-999"'
```

15.

```
name = readline(prompt="Input your name: ")
```

```
## Input your name:
```

```
age = readline(prompt="Input your age: ")
```

```
## Input your age:
```

```
print(paste("My name is",name, "and I am",age , "years old."))
```

```
## [1] "My name is  and I am  years old."
```

```
print(R.version.string)
```

```
## [1] "R version 4.4.1 (2024-06-14)"
```

```
# the output of the code above is "Input your name" and "Input your age" prompting user to input their
```