Lab 3

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library(tidyverse)

## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──  
## ✔ ggplot2 3.3.6 ✔ purrr 0.3.4  
## ✔ tibble 3.1.8 ✔ dplyr 1.0.9  
## ✔ tidyr 1.2.0 ✔ stringr 1.4.1  
## ✔ readr 2.1.2 ✔ forcats 0.5.2  
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

Question 1

V <- c("Bears", "Lions", "Dolphins", "Eagles", "Bengals")

The vector V above is an atomic vector because all the objects in the vector belong to the character strings family.They are homogeneous

Question 2

V[3]

## [1] "Dolphins"

Question 3

V[c(1,3,5)]

## [1] "Bears" "Dolphins" "Bengals"

Question 4

V[c(2,3,4,5)]

## [1] "Lions" "Dolphins" "Eagles" "Bengals"

V[-1]

## [1] "Lions" "Dolphins" "Eagles" "Bengals"

Question 5

K <- list( x = 3:7, "never", 43, y = list(10,20,30))

The vector K above is list because it contains objects of different types.It also contains another list y. The objects are from different families. x = 3:7 and 43 are from the famiy of integers,“never” is a character string object and y is an integer list

Question 6

length(K)

## [1] 4

Question 7

K[4]

## $y  
## $y[[1]]  
## [1] 10  
##   
## $y[[2]]  
## [1] 20  
##   
## $y[[3]]  
## [1] 30

Question 8

K[1:4]

## $x  
## [1] 3 4 5 6 7  
##   
## [[2]]  
## [1] "never"  
##   
## [[3]]  
## [1] 43  
##   
## $y  
## $y[[1]]  
## [1] 10  
##   
## $y[[2]]  
## [1] 20  
##   
## $y[[3]]  
## [1] 30

K

## $x  
## [1] 3 4 5 6 7  
##   
## [[2]]  
## [1] "never"  
##   
## [[3]]  
## [1] 43  
##   
## $y  
## $y[[1]]  
## [1] 10  
##   
## $y[[2]]  
## [1] 20  
##   
## $y[[3]]  
## [1] 30

Question 9a

tribble( ~x, ~y, ~w, ~z,  
 210, 300, 220, 180,  
 102, 100, 119, 187,  
 176, 175, 188, 173,  
 87, 95, 91, 94,  
 202, 210, 234, 218,  
 110, 122, 131, 128,  
) -> dt  
map\_dbl(dt, mean)

## x y w z   
## 147.8333 167.0000 163.8333 163.3333

Question 9b

map\_dbl(dt, sd)

## x y w z   
## 54.45151 79.12016 58.40348 44.66617

Question 9c

dt %>%  
 map(sqrt)

## $x  
## [1] 14.491377 10.099505 13.266499 9.327379 14.212670 10.488088  
##   
## $y  
## [1] 17.320508 10.000000 13.228757 9.746794 14.491377 11.045361  
##   
## $w  
## [1] 14.832397 10.908712 13.711309 9.539392 15.297059 11.445523  
##   
## $z  
## [1] 13.41641 13.67479 13.15295 9.69536 14.76482 11.31371

Question 9d

dt %>%  
 map(summary)

## $x  
## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 87.0 104.0 143.0 147.8 195.5 210.0   
##   
## $y  
## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 95.0 105.5 148.5 167.0 201.2 300.0   
##   
## $w  
## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 91.0 122.0 159.5 163.8 212.0 234.0   
##   
## $z  
## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 94.0 139.2 176.5 163.3 185.2 218.0