5.9

# Requirements: the chess matrix from Exercise 11.

Player <- c("dark","dark","dark","dark","dark","light","light","light","light","light")

Piece <- c("king", "queen", "pawn", "pawn", "knight", "bishop", "king", "rook", "pawn", "pawn")

chess <- cbind(Player, Piece)

print(chess)

# Save the Piece column of the matrix as a vector.

piece <- chess[,"Piece"]

piece

A black text on a white background

Description automatically generated

# Create a factor from the vector.

piece\_factor <- factor(piece)

piece\_factor

# Organize the levels in the following way but do not order them:

# King, Queen, Rook, Bishop, Knight, Pawn.

piece\_factor <- factor(piece,

levels=c("king", "queen", "rook", "bishop", "knight", "pawn"))

piece\_factor

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Description automatically generated

# Rename the levels with just their initial letters.

# Order the levels in the way specified above.

piece\_factor2 <- factor(piece, order = T,

levels=c("king", "queen", "rook", "bishop", "knight", "pawn"),

labels = c("K","Q","R","B","K","P"))

str(piece\_factor2)

A math equations and symbols

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5.10

# create a list which prints like this:

# [[1]]

# [1] 1 3 5 7 9 11

#

# [[2]]

# [[2]][[1]]

# [1] "Happy Birthday"

#

# [[2]][[2]]

# [1] "Archery"

list <- list(c(1,3,5,7,9,11),list("Happy Birthday","Archery"))

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Description automatically generated

# extract the numbers as a vector

vector1 <- list[[1]]



# extract the phrase Happy Birthday as a vector

hb <- list[[2]][[1]]

A close up of a text

Description automatically generated

# extract the second item of the second list as a list

list[[2]][2]

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Description automatically generated

# extract the second list as a list

A screenshot of a computer screen

Description automatically generated

# extract the numbers item as a list

A number on a white background

Description automatically generated

# add 2 to each element in the numbers item



# name the items in the list as "Numbers" and "Phrases"

list <- list(Number = c(1,3,5,7,9,11),

Phrases = list("Happy Birthday","Archery"))

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Description automatically generated

# you can use the $ to extract named items of a list



# if you extract the numbers item from newList with the $, what other extraction method is this equivalent to?



# use the dollar sign to repeat the addition from above (add 2 to each element in the numbers list)



# add a new item called "Brands" to the list. It should contain the brands Kellogs, Nike, iPhone

A computer code with text

Description automatically generated

# use either brackets or the dollar sign to do that

A screenshot of a computer code

Description automatically generated

# remove the iPhone from the Brands item

A screenshot of a computer code

Description automatically generated

# remove the Brands item from the list

A screenshot of a computer code

Description automatically generated