Exercises part2

Vectors

1. Create a numeric vector of 5 numbers.
2. Create a character vector of 4 colors.
3. Create a logical vector with TRUE and FALSE values.
4. Access the third element of the vector v <- c(10, 20, 30, 40, 50).
5. Replace the second element of a vector with the value 99.
6. Extract all elements greater than 25 from v <- c(10, 20, 30, 40, 50).
7. Combine two vectors using the c() function.
8. Sort a vector in decreasing order.

Factors

1. Create a factor from c("low", "medium", "high", "low").
2. Check the levels of a factor variable you created.
3. Convert the character vector c("yes", "no", "yes", "no") into a factor.
4. Create an ordered factor for c("small", "medium", "large") with levels in the correct order.
5. Use table() to count occurrences of each level in a factor.

6. Extract the second element of the factor factor(c("A", "B", "C", "A")).
7. Check whether a factor is ordered using is.ordered().
8. Reorder levels of a factor variable with

   levels "low", "medium", "high" to "high", "medium", "low".
9. Coerce a factor back to a character vector.

Matrices

1. Create a 3x3 numeric matrix using matrix().
2. Access the value in the second row and third column of a matrix.
3. Extract the first row of a matrix.
4. Extract the third column of a matrix.
5. Add a row to an existing matrix using rbind().
6. Add a column to an existing matrix using cbind().
7. Find the sum of all elements in a matrix.
8. Transpose a matrix using t().
9. Check the dimensions of a matrix using dim().

Data Frames

1. Create a data frame with columns Name, Age, and Score and two rows.
2. Extract the Name column of a data frame using the $ operator.
3. Extract the second row of a data frame.

4. Add a new column Passed to a data frame with logical values (TRUE, FALSE).
5. Filter rows where Score is greater than some number of your choice.
6. Sort a data frame by the Age column.
7. Remove a column from a data frame.
8. Convert a data frame into a matrix using as.matrix().

Lists

1. Create a list containing a numeric vector, a character vector, and a logical value.
2. Access the second element of a list.
3. Access the first element of a nested list using [[and [.
4. Name the elements of the list as c("Numbers", "Names", "Flag").
5. Add a new element to an existing list.
6. Remove an element from a list.
7. Convert a list to a vector using unlist().
8. Check the length of a list.
9. Combine two lists using c().