Introduction to R
Mairead Shaw
Fall 2024

Day 1 Exercises

1. Create a new file called day1_exercises.R in the folder you created for this workshop.
2. Alex bought three apples and Sam bought 4. Create a variable called apple_sum that is the result of adding their numbers of apples.
3. Sidney bought 12 oranges and distributed them to four people. Create a variable called orange_division showing the result of this division.
4. Create a variable called birthday that indicates what month your birthday is in (e.g., September).
5. Write an if statement that prints out “Happy birthday month!” if the month is your birthday, or prints out “Happy not-your-birthday-month!” if the month is not your birthday.
6. Create a vector of the months as follows:

   months <- c(“january", “february", “march”, “april”, “may”, “june”, “july”, “august”, “september", “october”, “november”, “december")

   Using a for loop, print out every month of the year.

7. Write a function called multiply3 that multiplies three numbers together.

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Day 2 Exercises

There is a dataset called *iris* included with base R, with information about flowers. Specifically, it gives measurements in centimeters of sepal (the green part just under a colourful flower) length and width and petal (the colourful part) length and width for 50 flowers from each of three species (setosa, virginica, and versicolor) of a flower called an iris.


setosa


virginica


versicolor

1. Attach the dplyr and ggplot2 libraries to your session.
2. Get an overview of this dataset using the str(), summary(), and head() functions. Then look at the entire thing with the View() function.
3. Group the dataset by Species, then add a variable called Sepal.Length.Average to your dataset using the mutate function that is the average sepal length. Do this once without the pipe operator, and once with the pipe operator. Save the dataset to a variable called iris_average.
4. Create a scatterplot of sepal length on the x-axis and petal length on the y-axis, with the dots coloured by species.
5. Conduct a linear regression of species on petal length. Are there differences between species?