# Assignment 2.2R

2022 Programming in Psychological Science

## Contents



**Assignment description**

Choose to create one or both of the following two R programs. Each program is worth 1 point. Although the second program will take much more work. We will award partial points based on effort and correctness.

You should also complete Assignment 2.1 for 8 points. The total of Assignments 2.1 and your choice of either 2.2R (this R challenge) or 2.2P (Python) are worth 10 points and 15% of your final course grade. You must work individually, but feel free to ask questions in class and on Slack!

You must submit **each** solution as an R program (.R file). So if you choose to write both programs, submit both files in a .zip folder. The best programs are those that work, follow style guidelines (https://style.tidyverse.org/), have clear variable names, and have comments so that other programmers (and your future self) can read and adapt the code.

### Q2.2R.1 (1 point)

Read about THE INFINITE MONKEY THEOREM. See also THIS IMPORTANT CULTURAL VIDEO.

Simulate one monkey typing random letters on a typewriter in sequences of 5 letters. The simulated monkey should type 5 letters, then a space, and so on. Create a **function** that returns the number of 5-letter sequences typed before making a coherent 5-letter word.

Use a file that contains all English (or other human language) 5 letter words (e.g., http://www-cs-faculty.stanford.edu/~knuth/sgb-words.txt)

Run your function 100 times. What is the mean and standard deviation of the number of 5-letter sequences? WARNING: if you loop many times, the loop could be quite slow. We recommend starting with a much smaller number (i.e., 5) for testing your code.

We are not awarding points based on plotting. However you could create nice plots and histograms of the result of running your function 100 times.

### Q2.2R.2 (1 point)

Create a program that allows you to play Hangman in the R console. Read more about the Hangman game if you are not already familiar with it here: https://en.wikipedia.org/wiki/Hangman_%28game%29.

Your R program should pick a random word from a long list of words. The player in the R console will guess letters in the words. The Hangman word list can be in any human language you choose (e.g. Nederlands, English, Deutsch, etc.)

We are not awarding points based on Hangman graphics. But graphics can be included in your program if you wish, either as text-based graphics in the R console or in a figure.