

Warmup

Python and R

Below are two pieces of code, performing the same task. The first piece of code is written in Python, while the second is written in R.

- What is this code doing?
- What similarities and differences do you notice between Python and R?

Python:

```
import numpy as np

M = 10
hats = np.arange(M)
nsim = 10000
results = np.zeros(nsim)

for i in range(nsim):
    randomized_hats = np.random.choice(hats, M, replace = False)
    results[i] = np.sum(randomized_hats == hats) > 0

np.mean(results)
```

R:

```
M <- 10
hats <- 1:M
nsim <- 10000
results <- rep(0, nsim)

for(i in 1:nsim){
  randomized_hats <- sample(hats, M, replace = FALSE)
  results[i] <- sum(randomized_hats == hats) > 0
}

mean(results)
```