Lab 09

Lily Shkhyan

2022-10-26

Problem 2: Create a n x k matrix of Poisson variables with mean lambda.

```
set.seed(1235)
fun1 <- function(n = 100, k = 4, lambda = 4)
  {
  x <- NULL
  for (i in 1:n)
    x <- rbind(x, rpois(k, lambda))
  return(x)
  }

f1 <- fun1(100,4)
mean(f1)
```

```
## [1] 4.1575
```

```
fun1alt <- function(n = 100, k = 4, lambda = 4)
  {
  x <- matrix( rpois(n*k, lambda) , ncol = 4)
  return(x)
  }

f1 <- fun1alt(50000,4)
microbenchmark::microbenchmark(
  fun1(),
  fun1alt()
)
```

```
## Unit: microseconds
##       expr     min      lq      mean   median      uq      max neval cld
##     fun1() 234.001 301.792 319.03692 329.9385 336.334  357.709   100   b
##  fun1alt()  18.292  19.501  37.53952  20.0420  20.730 1754.042   100  a
```

```
d <- matrix(1:16,ncol=4)
d
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    1    5    9   13
## [2,]    2    6   10   14
## [3,]    3    7   11   15
## [4,]    4    8   12   16
```