

# Day 4

## Part 1

```
library(stringr)
setwd("/Users/saumyasinghal/PycharmProjects/aoc2023")
lines <- read.delim("day4/day4.txt", sep="\n", header = F)[[1]]
cards <- str_match_all(lines, "^Card\\s+\\d+:([ \\d]+)\\|([ \\d]+)$")
```

```
card_matches <- function (card){
  winning <- na.omit(as.numeric(str_split(card[,2], " ")[[1]]))
  losing <- na.omit(as.numeric(str_split(card[,3], " ")[[1]]))
  length(intersect(winning, losing))
}
```

```
grade_card <- function(card){
  n = card_matches(card)
  if (n==0){
    0
  } else {
    2^(n-1)
  }
}
```

```
sum(sapply(cards, grade_card))
```

```
## [1] 20855
```

## Part 2

```
copies <- rep(1, length(cards))
```

```
inc_copy <- function(card_num, inc_by=1){
  copies[card_num] <<- copies[card_num] + inc_by
}
```

```
make_copies <- function (card_num){
  . <- mapply(inc_copy, seq_len(card_matches(cards[[card_num]]))+card_num, inc_by=copies[card_num])
}
. <- lapply(1:length(cards), make_copies)
print(sum(copies))
```

```
## [1] 5489600
```