

# HW10

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```
#Email.R
test <- "../../../datasets/maildir/."

Email <- function(filename)
{
  con <- file(filename, "r")
  ll <- readLines(con)
  close(con)
  return(ll)
}

to.Email <- function(em)
{
  from_ndx <- grep("X-To:", em)
  from_line <- em[from_ndx]
  split <- strsplit(from_line, " ")
  first_name <- split[[1]][1]
  end <- nchar(first_name)
  first_name <- substr(first_name, 7, end)
  split[[1]][1] <- first_name
  return(split[[1]])
}

from.Email <- function(em)
{
  to_ndx <- grep("X-From:", em)
  to_line <- em[to_ndx]
  split <- strsplit(to_line, ": ")
  return(split[[1]][2])
}

#Company.R
test <- "allen-p"

Employee <- function(directory_name)
{
  sent_items_folder <- paste("../datasets/maildir/", directory_name, "/sent_items/", sep = "")
  sent_folder <- paste("../datasets/maildir/", directory_name, "/sent/", sep = "")
  if( dir.exists( sent_folder))
  {
    path <- sent_folder
  }
}
```

```

else
{
  path <- sent_items_folder
}
return(path)
}

get_number_of_emails.Employee <- function(e)
{
  num <- length(dir(e))
  return(num)
}

get_email_filename.Employee <- function(e, i)
{
  file <- dir(e)[i]
  return(file)
}

get_name.Employee <- function(e)
{
  file <- dir(e)[1]
  path <- paste(e, file, sep = "")
  email <- Email(path)
  name <- from.Email(email)
  return(name)
}

```

```
#presentation.R
```

```
library(plyr)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:plyr':
##
##   arrange, count, desc, failwith, id, mutate, rename, summarise,
##   summarize

## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union

library(igraph)
```

```
##
## Attaching package: 'igraph'

## The following objects are masked from 'package:dplyr':
##
##   as_data_frame, groups, union
```

```

## The following objects are masked from 'package:stats':
##
##      decompose, spectrum
## The following object is masked from 'package:base':
##
##      union
source("configuration.R")

employee1 <- "love-p"
employee2 <- "may-l"
employee3 <- "grigsby-m"
employee4 <- "cash-m"
employee5 <- "giron-d"

employees <- c(employee1, employee2, employee3, employee4, employee5)
# employee_names <-
le <- employees %>% length
# for (n in 1:le)n
# {
#   employees[n] <- Employee(employees[n]) %>% get_name.Employee()
# }
m <- matrix(rep(0, 25), nrow = 5, ncol = 5)
colnames(m) <- employees
rownames(m) <- employees

for (i in 1:le)
{
  e <- Employee(employees[i])
  #browser()
  num_emails_sent <- get_number_of_emails.Employee(e)
  sent_to <- list()
  for (i2 in 1:num_emails_sent)
  {
    file <- dir(e)[i2]
    path <- paste(e, file, sep = "")
    email <- Email(path)
    sent_to[[i2]] <- to.Email(email)
  }
  sent_to <- unlist(sent_to)
  other_employees <- setdiff(employees, employees[i])
  loe <- other_employees %>% length
  for (i3 in 1:loe)
  {
    emp <- Employee(employees[i3])
    employee_name <- get_name.Employee(emp)
    num_emails <- grep(employee_name, sent_to) %>% length
    m[employees[i], other_employees[i3]] <- num_emails
  }
}

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/love-p/sent/1.'
## Warning in readLines(con): incomplete final line found on '../..datasets/

```



```
## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/778.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/78.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/782.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/784.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/789.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/791.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/792.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/87.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/88.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/giron-d/sent/92.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/love-p/sent/1.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/may-l/sent/1.'

## Warning in readLines(con): incomplete final line found on '../..datasets/
## maildir/grigsby-m/sent/1.'
```

```
print(m)
```

```
##           love-p may-l grigsby-m cash-m giron-d
## love-p           0     1           0     0       0
## may-l            0     0           0     1       0
## grigsby-m        0     1           0     1       0
## cash-m           0     0           0     0       5
## giron-d          42     0           1     0       0
```

```
g <- igraph::graph_from_adjacency_matrix(m, weighted = T)
plot(g)
```

