```r
#Q2 Open the file

library(readr)

data <- read_csv("/Users/hejingwen/Documents/673/ConnectionsLInk.csv",
show_col_types = FALSE)

library(dplyr)


#Q3 Count of your contacts

employer_counts <- data %>%

  group_by(Company) %>%

  summarise(Count = n(), .groups = 'drop')  # Add .groups = 'drop' to avoid a grouped tibble

# Calculating the total count

total_count <- sum(employer_counts$Count)

# Print the results

print(employer_counts)

print(total_count)


#Q4

install.packages("tidygraph")

install.packages("tidyr")

library(tidyr)

library(tidygraph)

library(dplyr)

library(igraph)

# Adding a unique identifier for each person

data <- data %>%
```

```r
  mutate(FirstLastName = paste(`First Name`, `Last Name`))
# Creating nodes dataframe with unique identifiers
nodes <- data %>%
  distinct(FirstLastName) %>%
  mutate(NodeID = row_number()) %>%
  select(NodeID, Name = FirstLastName)
# Creating edges dataframe based on the company affiliation
edges <- data %>%
  select(Name = FirstLastName, Company) %>%
  inner_join(nodes, by = c("Name" = "Name")) %>%
  select(NodeID, Company)
# Finding connections (edges) within each company
edges <- edges %>%
  group_by(Company) %>%
  summarise(AllConnections = list(combn(NodeID, 2, simplify = FALSE))) %>%
  unnest(AllConnections) %>%
  ungroup() %>%
  select(Source = AllConnections[[1]], Target = AllConnections[[2]])
# Create the igraph object
graph <- graph_from_data_frame(d = edges, vertices = nodes, directed = FALSE)
# Check the first few rows of the nodes and edges dataframes
print(head(nodes))
print(head(edges))
# Plot the graph
plot(graph)
```

```
> print(employer_counts)
# A tibble: 221 × 2
   Company                           Count
   <chr>                             <int>
 1 ALDO Group                            2
 2 ALTEN                                 1
 3 Air Transat                           2
 4 Allstate Canada                       1
 5 Alpine Macro                          2
 6 AltaML                                1
 7 Alter Domus                           1
 8 Amazon Web Services (AWS)             1
 9 Amundi                                1
10 Analytica Software and Technologies   1
# i 211 more rows
# i Use `print(n = ...)` to see more rows
> print(total_count)
[1] 313
`
```

```
▸ print(head(edges))
# A tibble: 6 × 2
  NodeID Company
   <int> <chr>
L      1 TD
⸳      2 BOMBARDIER
⸳      3 QuadReal Property Group
⸳      4 MHI RJ Aviation Group
⸳      5 PwC
⸳      6 Sir Wilfrid Laurier School Board
```