

Practical 2: Perform following tasks: (i) View data collection forms and/or import onemode/two-mode datasets; (ii) Basic Networks matrices transformations

Code:

```
# Get the current working directory
getwd()

# Set the working directory to "d:/SNA_pract"
setwd("d:/SNA_pract")

# Read the nodes.csv file into a data frame 'nodes'
nodes <- read.csv("nodes.csv", header = T, , as.is = T)

# Print the first few rows of 'nodes'
head(nodes)

# Read the edges.csv file into a data frame 'links'
links <- read.csv("edges.csv", header = T, as.is = T)

# Print the first few rows of 'links'
head(links)

# Create a graph object 'net' from the data frames 'nodes' and 'links'
net <- graph.data.frame(d = links,
                        vertices = nodes,
                        directed = T)

# Convert the graph object 'net' to an adjacency matrix 'm'
m = as.matrix(net)

# Print the adjacency matrix of 'net'
get.adjacency(net)

# Plot the graph object 'net'
plot(net)
```

OUTPUT

The screenshot shows the RStudio interface with the following components:

- Source Editor:** Contains R code for reading a CSV file, creating a graph, and generating an adjacency matrix.
- Console:** Displays the output of the R code, including the structure of the 'links' data frame and the resulting 'dgcmatrix' object.
- Environment:** Lists the objects in the global environment: 'links' (52 obs. of 4 variables), 'm' (Formal class dgcmatrix), 'net' (List of 17), and 'nodes' (17 obs. of 5 variables).
- Files:** Shows the file explorer with a file named 'edges.csv'.

R Code in Source Editor:

```
R 4.2.2 ~ /  
File Edit Code View Plots Session Build Debug Profile Tools Help  
Go to file/function Addins  
Source  
Console Terminal Background Jobs  
1 id media media.type type-label audience.size  
2 s01 NY Times 1 Newspaper 20  
3 s02 Washington Post 1 Newspaper 25  
4 s03 Wall Street Journal 1 Newspaper 30  
5 s04 USA Today 1 Newspaper 32  
6 s05 LA Times 1 Newspaper 20  
7 s06 New York Post 1 Newspaper 50  
> links <- read.csv("edges.csv", header = T, as.is = T)  
> head(links)  
  from to weight type  
1 s01 s02 10 hyperlink  
2 s01 s02 12 hyperlink  
3 s01 s03 22 hyperlink  
4 s01 s04 21 hyperlink  
5 s04 s11 22 mention  
6 s05 s13 21 mention  
> #Basic Networks matrices transformations  
> net <- graph.data.frame(d = links,  
+ vertices = nodes,  
+ directed = T)  
> m = as.matrix(net)  
> get.adjacency(net)  
17 x 17 sparse matrix of class "dgcmatrix"  
[[ suppressing 17 column names 's01', 's02', 's03' ... ]]  
  
s01 . 2 1 1 . . . . . 1 . .  
s02 1 . 1 . . . . . 1 1 . . . .  
s03 1 . . 1 1 . . 1 1 1 . . . .  
s04 . 1 . . 1 . . . 1 1 . . . .  
s05 1 1 . . . . 1 . . . . 1 . .  
s06 . . . . 1 . . . . . 1 1 . .  
s07 . 1 . . . . 1 1 . . . 1 . .  
s08 . 1 . . . . 1 2 . . . . . .  
s09 . . . . . 1 . . . . . . . .  
s10 . 1 . . . . . . . . . . . .  
s11 . . . . . 1 . . . . . 1 1 . .  
s12 . . . . . 1 . . . . . 1 1 . .  
s13 . . . . . . 1 . . . . . 1 . .  
s14 . . . . . . 1 . 1 . . . . . .  
s15 2 . . 1 1 . . . . . . . . . .  
s16 . . . . 1 . . . . . . . . . .  
s17 . . . 1 . . . . . . . . . .  
> |
```

Environment Data:

Object	Class	Size
links	dgcmatrix	52 obs. of 4 variables
m	dgcmatrix	Formal class dgcmatrix
net	graph	List of 17
nodes	dgcmatrix	17 obs. of 5 variables

Files:

- edges.csv

System Information:

- Time: 21:05:17
- Date: 20-03-2023