Web data usage homework 1

Borja Ruiz Amantegui 100357358, Francesca Salicatti 100341618

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Contents

1 Exercise 1

```
neighbors(n,which(V(n)$name=="/conf/sigmod/CopelandK85"), mode = "all")
```

```
## + 47/22446 vertices, named, from d15d9cf:
##  [1] /journals/cacm/Cardenas75          /books/aw/GoldbergR83
##  [3] /journals/tods/Fagin77             /conf/sigmod/KemperM90
##  [5] /journals/tods/Valduriez87         /journals/tods/SeveranceL76
##  [7] /journals/tkde/OzsoyogluH93         /conf/sigmod/CopelandM84
##  [9] /journals/acta/BayerM72            /journals/tods/NievergeltHS84
## [11] /journals/tods/Codd79              /journals/tkde/ThakoreSL95
## [13] /conf/vldb/PucheralTV90            /conf/icde/SarathySG93
## [15] /journals/tods/BittonBDW83         /journals/tods/Batory79
## [17] /conf/vldb/EggersOS81              /journals/tods/MarchS77
## [19] /conf/vldb/ValduriezKC86           /conf/icde/KhoshafianCJBV87
## + ... omitted several vertices
```

2 Exercise 2

a) Number of outgoing edges from "/conf/sigmod/CopelandK85" vertex in n graph: degree(n, "/conf/sigmod/CopelandK85", "out")

b) Number of ingoing edges for "/conf/sigmod/CopelandK85" and "/journals/cacm/Press92a" in n graph independently. degree(n, v=c("/conf/sigmod/CopelandK85","/journals/cacm/Press92a"), mode="in")

c) Returns the maximum degree of any node from the n graph. max(degree(n, v=V(n), mode="in"))

d) Return degree for all nodes d<-degree(n)

3 Exercise 3

```
which.max(degree(n, v=V(n), mode="in"))
```

```
## /journals/tods/Chen76
##                  1007
```

4 Exercise 4

```
which.max(closeness(n, v=V(n)))
```

```
## /conf/icdt/LiBU01
##             20365
```

```
which.max(betweenness(n, v=V(n)))
```

```
## /books/aw/AbiteboulHV95
##                     248
```

5   Exercise 5

```r
hub<-hub.score(n)
which(hub$vector == max(hub$vector))
```

```
## /books/aw/AbiteboulHV95
##                     248
```

```r
auth<-authority.score(n)
which(auth$vector == max(auth$vector))
```

```
## /journals/cacm/Codd70
##                   993
```

I would use a n value of maximum authorities or i would use the ones that are being pointed by the highest hub scores.