

## Week 8 Extra: Graphs and Networks in R & Tableau

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정보 비주얼라이제이션 2015 Fall

human-computer interaction + design lab.

Joonhwan Lee

# Graphs and Networks in R & Tableau

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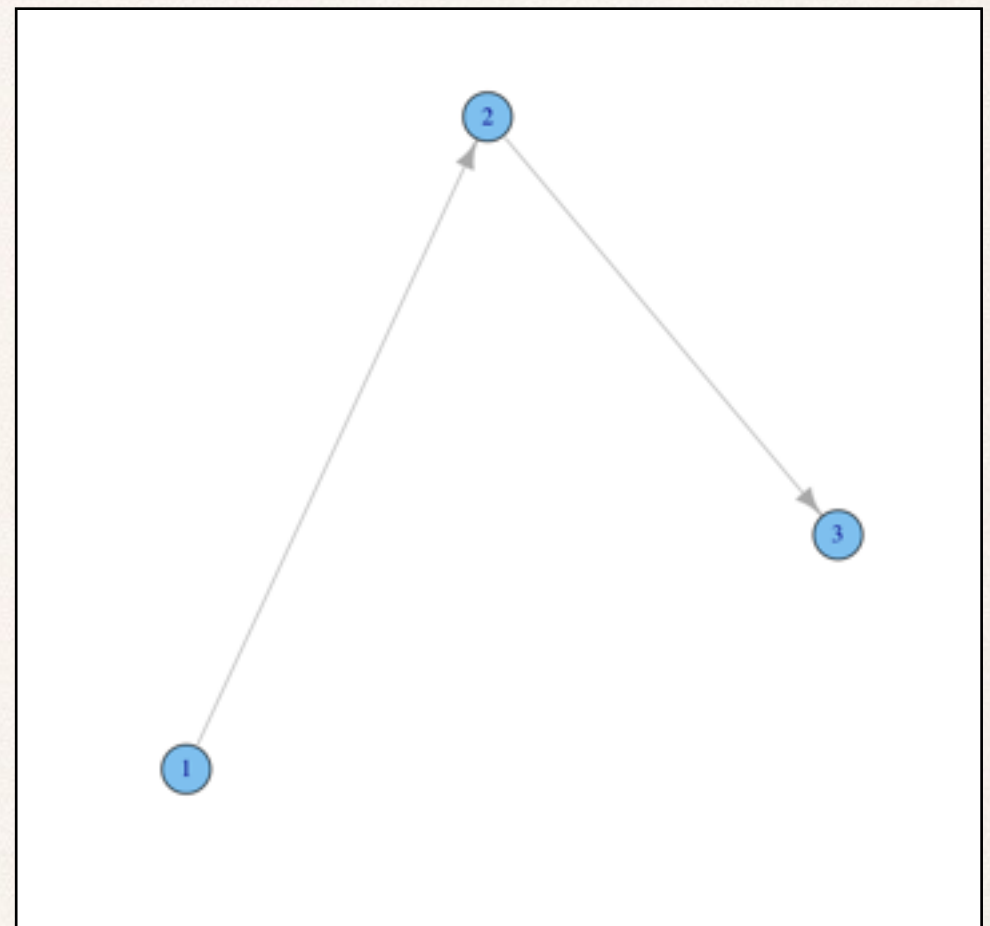
# Lab 1: Graph

- ✦ Data

- ✦ node1 → 2
- ✦ node2 → 3
- ✦ ...

- ✦ R Code

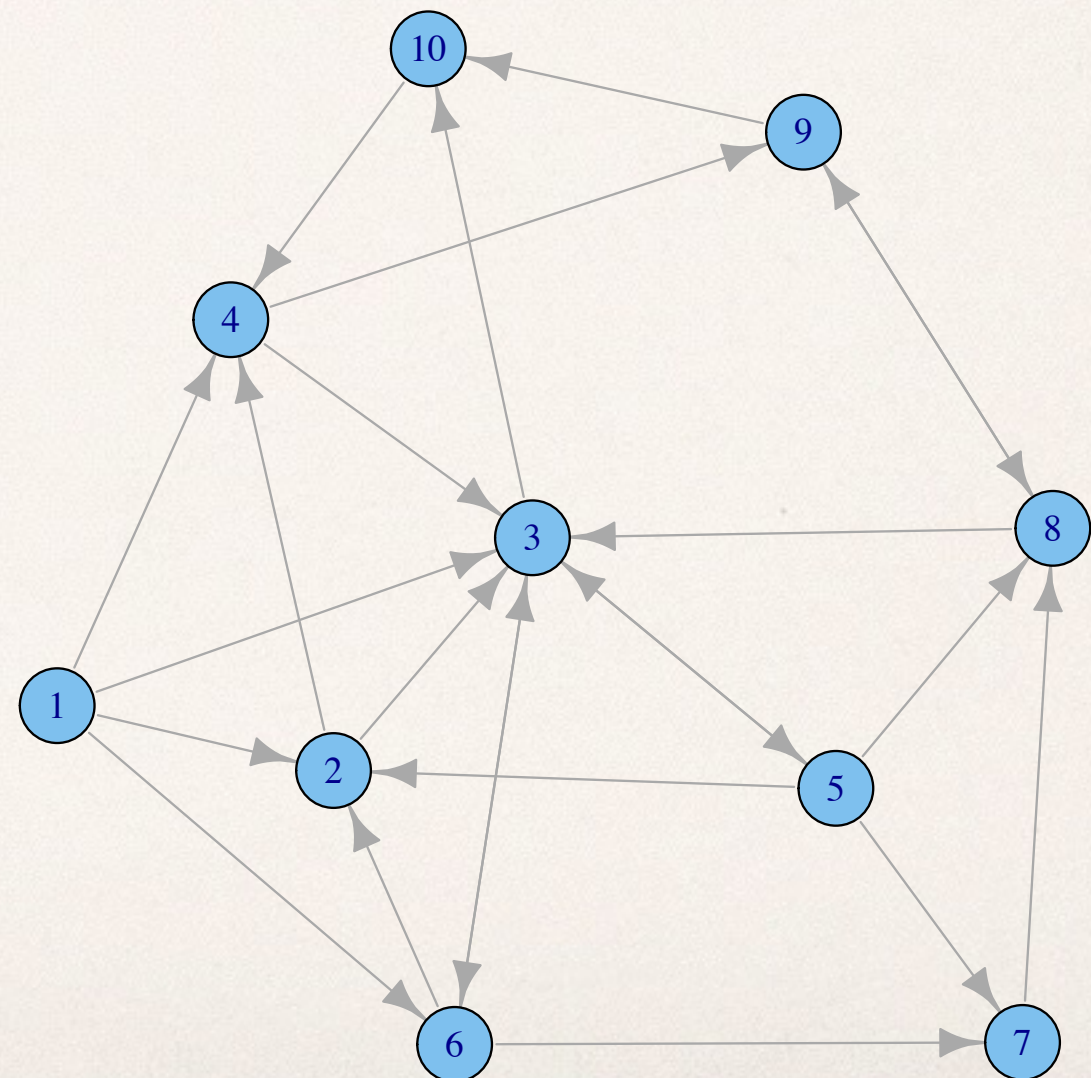
- ✦ `library(igraph)`
- ✦ `g <- graph(c(1,2, 2,3))`
- ✦ `plot(g)`



# Lab 1: Graph

```
g <- graph(c(1,2, 1,3, 2,3, 1,4, 1,6, 2,4,
3,5, 3,6, 4,3, 5,2, 5,3, 5,7, 5,8, 6,2, 6,3,
6,7, 7,8, 9,8, 8,3, 8,9, 9,10, 3,10, 10,4,
4,9))
```

|     |     |
|-----|-----|
| 1   | 2   |
| 1   | 3   |
| 2   | 3   |
| 1   | 4   |
| 1   | 6   |
| 2   | 4   |
| 3   | 5   |
| 3   | 6   |
| 4   | 3   |
| 5   | 2   |
| 5   | 3   |
| 5   | 7   |
| ... | ... |
| 8   | 9   |
| 9   | 10  |
| 3   | 10  |
| 10  | 4   |
| 4   | 9   |



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## Lab 2: Facebook 관계망

- ✦ 파일로 부터 데이터를 읽어온다.
  - ✦ `socdata <- read.table("sns-data.txt", sep=',', dec=',', header=T)`
- ✦ `socdata` 를 그래프 포맷으로 변환. 그래프의 방향성은 고려하지 않아 `directed=F` 로 지정
  - ✦ `socdata.network <- graph.data.frame(socdata, directed=F)`

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## Lab 2: Facebook 관계망

- ◆ 데이터 확인

- ◆ `V(socdata.network)` # Vertex 확인
- ◆ `E(socdata.network)` # Edge 확인
- ◆ `degree(socdata.network)` # Degree 확인

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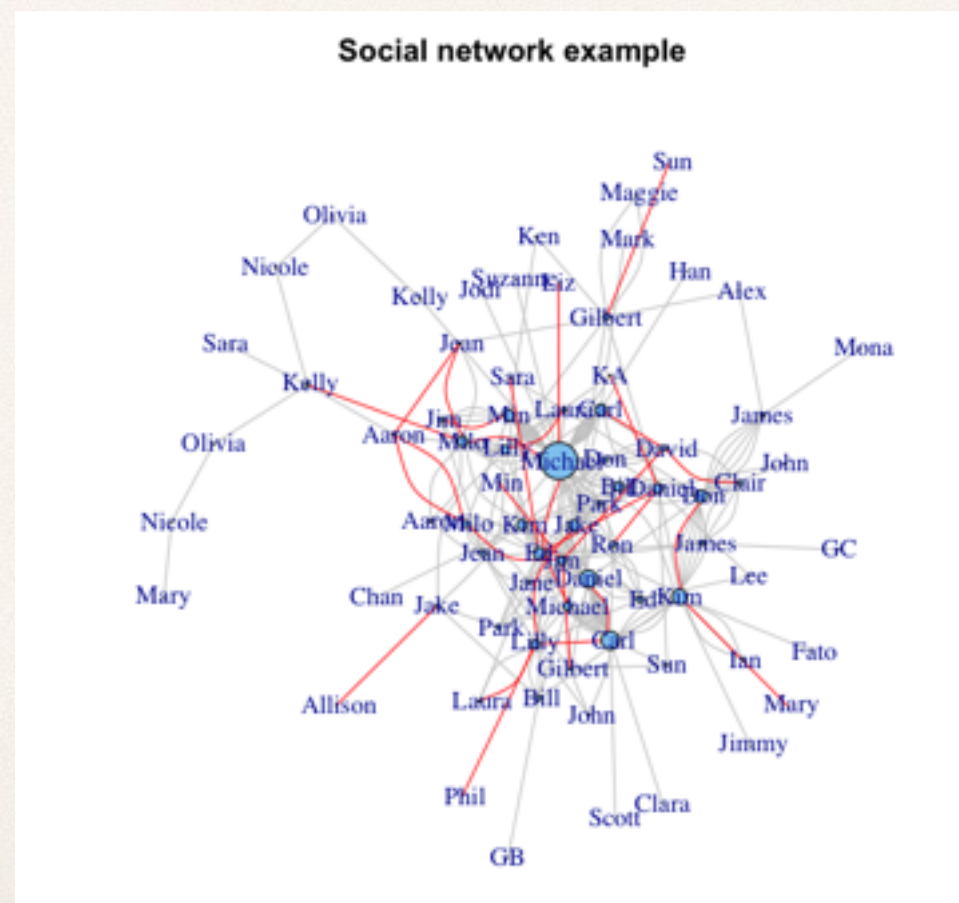
## Lab 2: Facebook 관계망

- ✦ Vertex 크기 조절
  - ✦ `V(socdata.network)$size <- degree(socdata.network)/5`
- ✦ Edge 색상 조절 (interaction이 12 이상일 때 빨간색으로 표시)
  - ✦ `E(socdata.network)$color <- ifelse(E(socdata.network)$interaction>12, "red", "grey")`

## Lab 2: Facebook 관계망

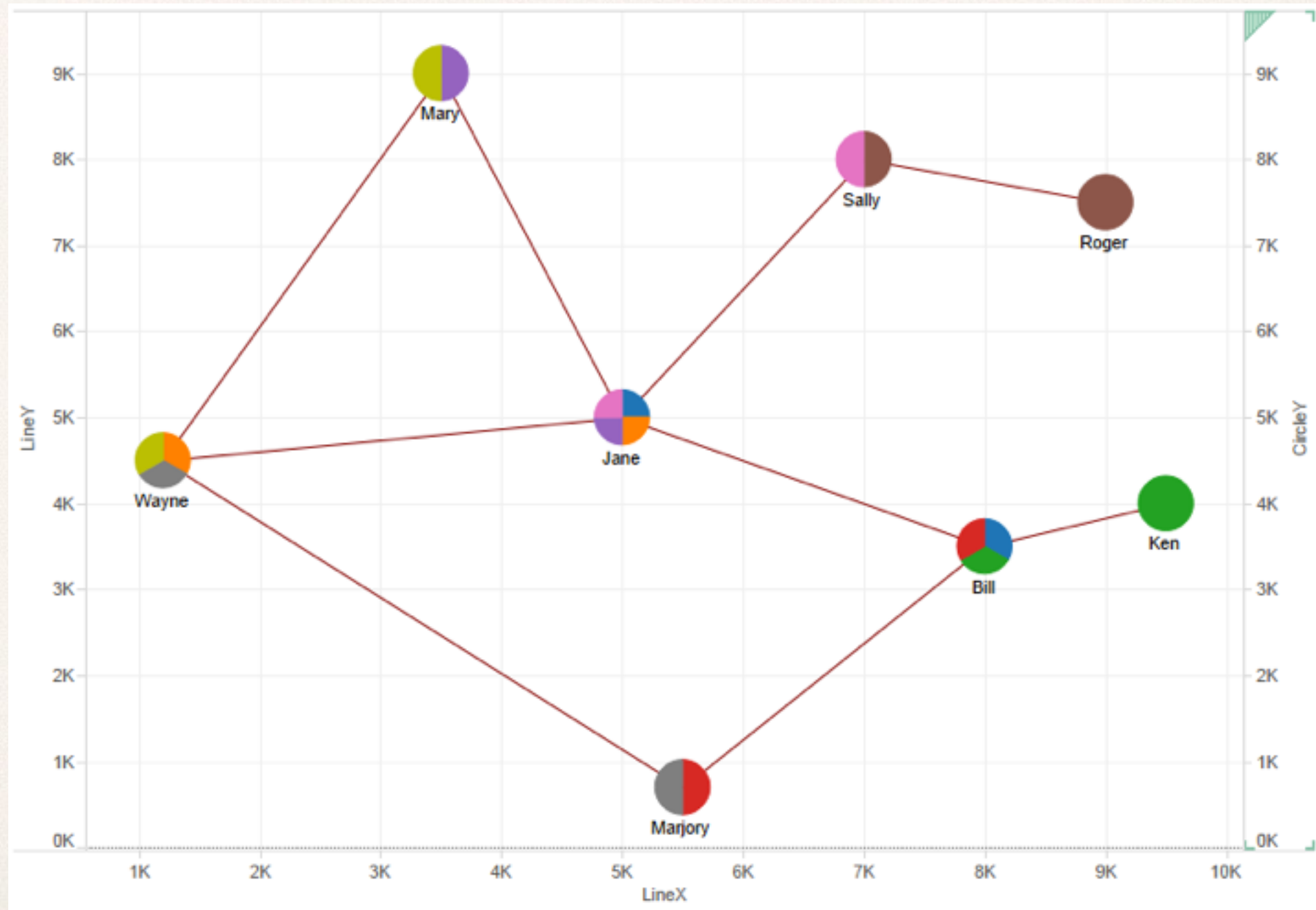
- ◆ 그래프 그리기

- ◆ `plot(socdata.network,`  
    `layout=layout.fruchterman.reingold,`  
    `main='Social network example')`

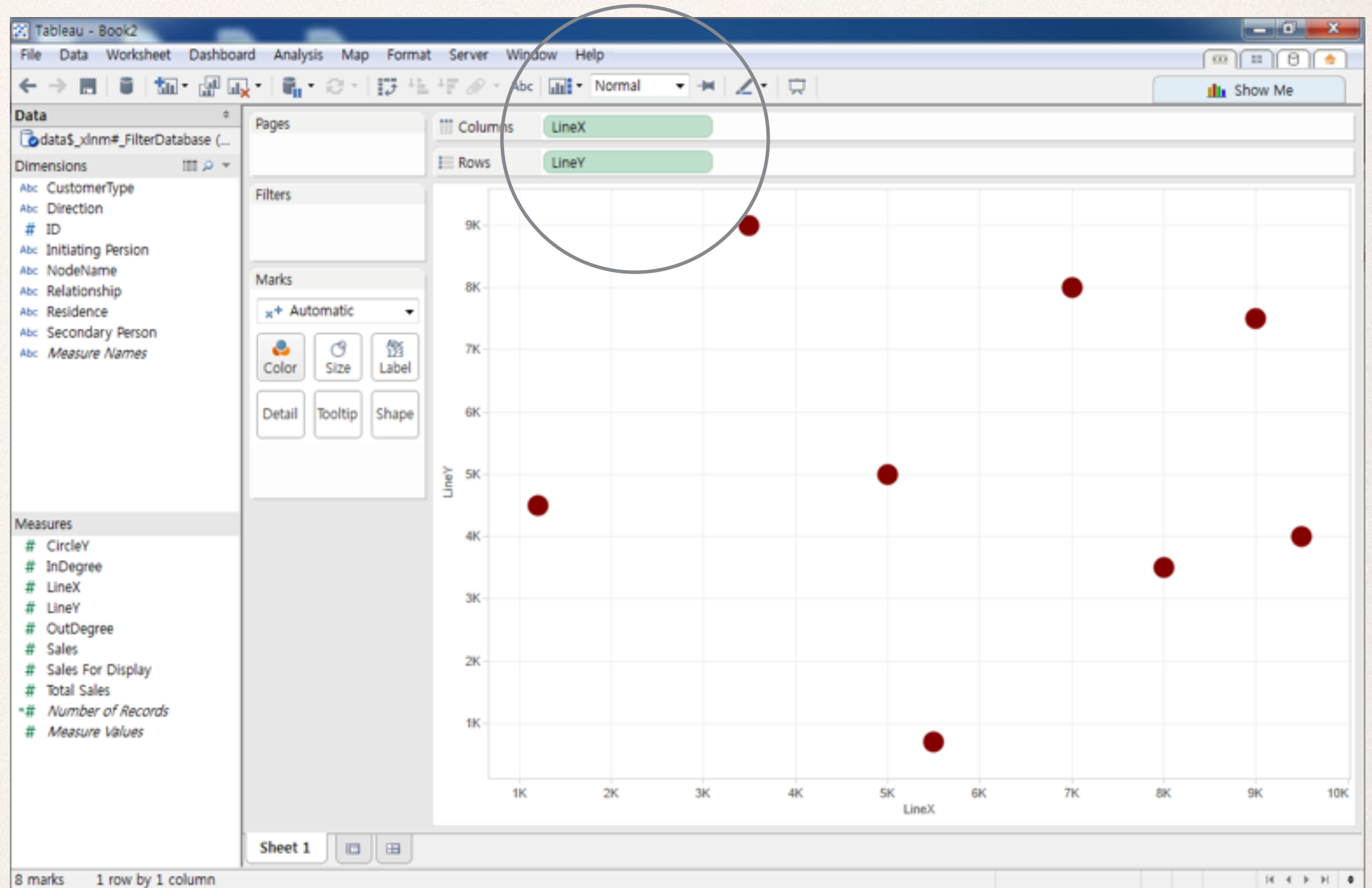


## Lab 3: Graph with Tableau

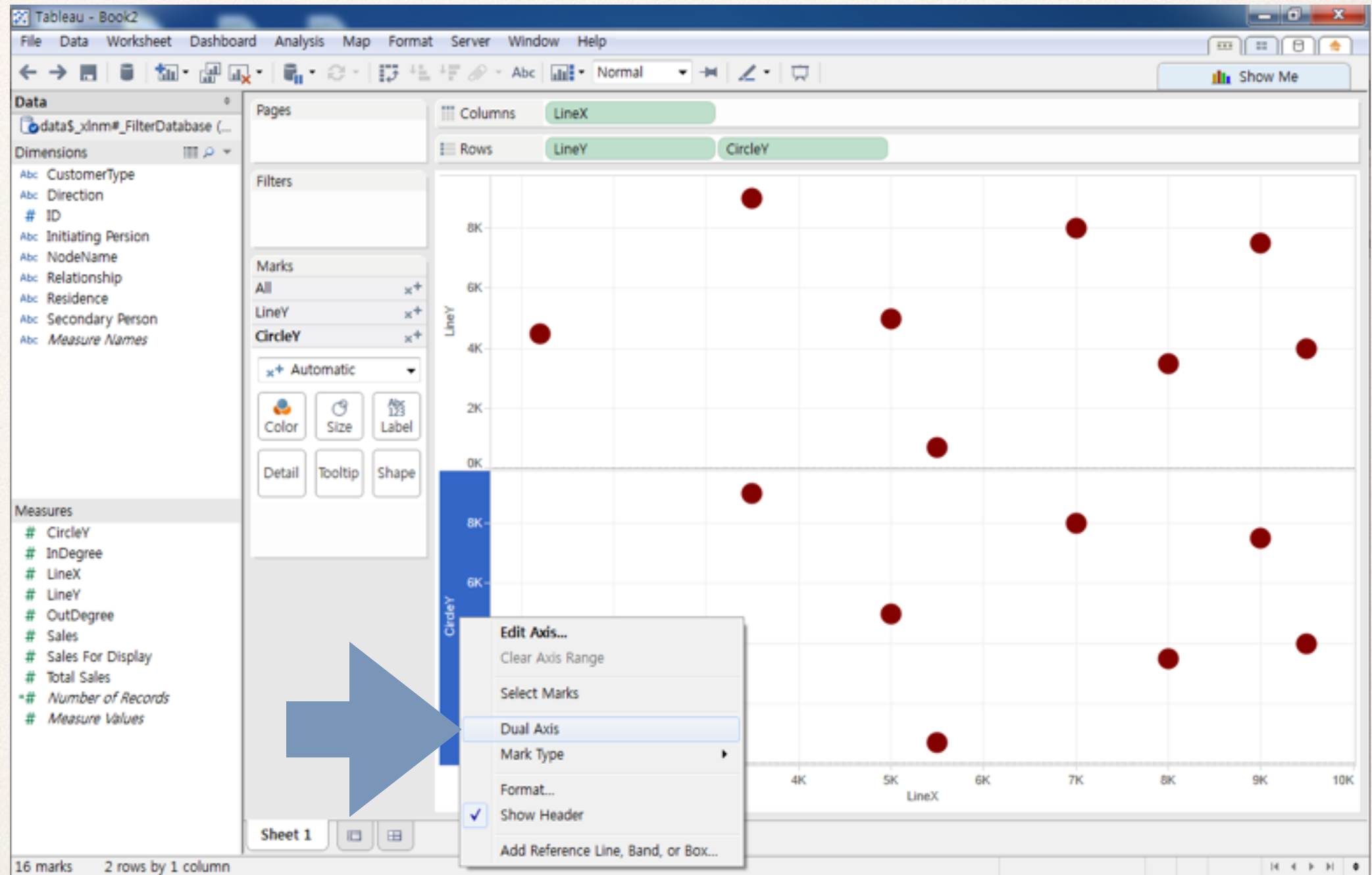
- ✦ Data: network\_graphs\_example\_data.xlsx



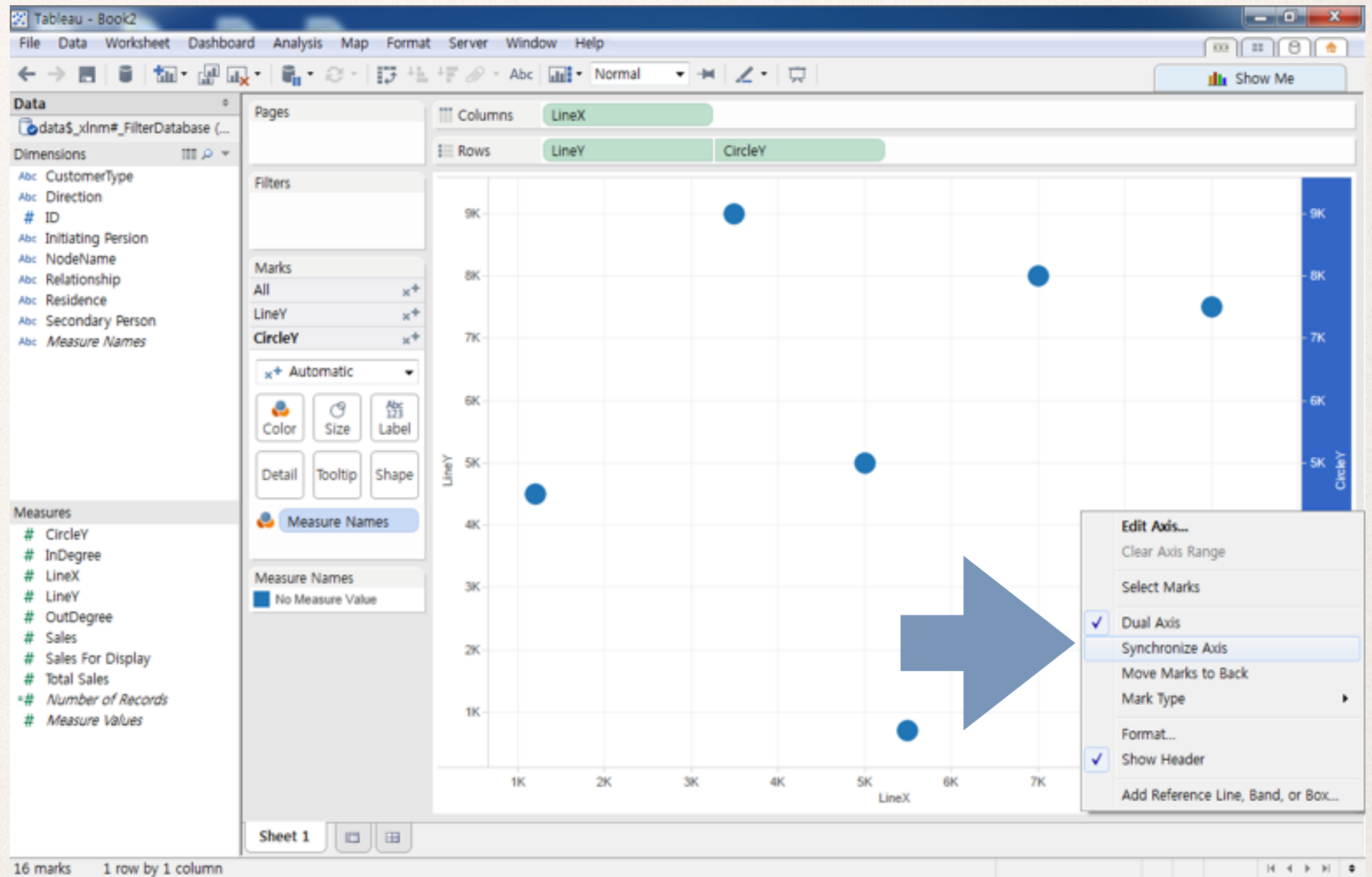
# Lab 3: Graph with Tableau



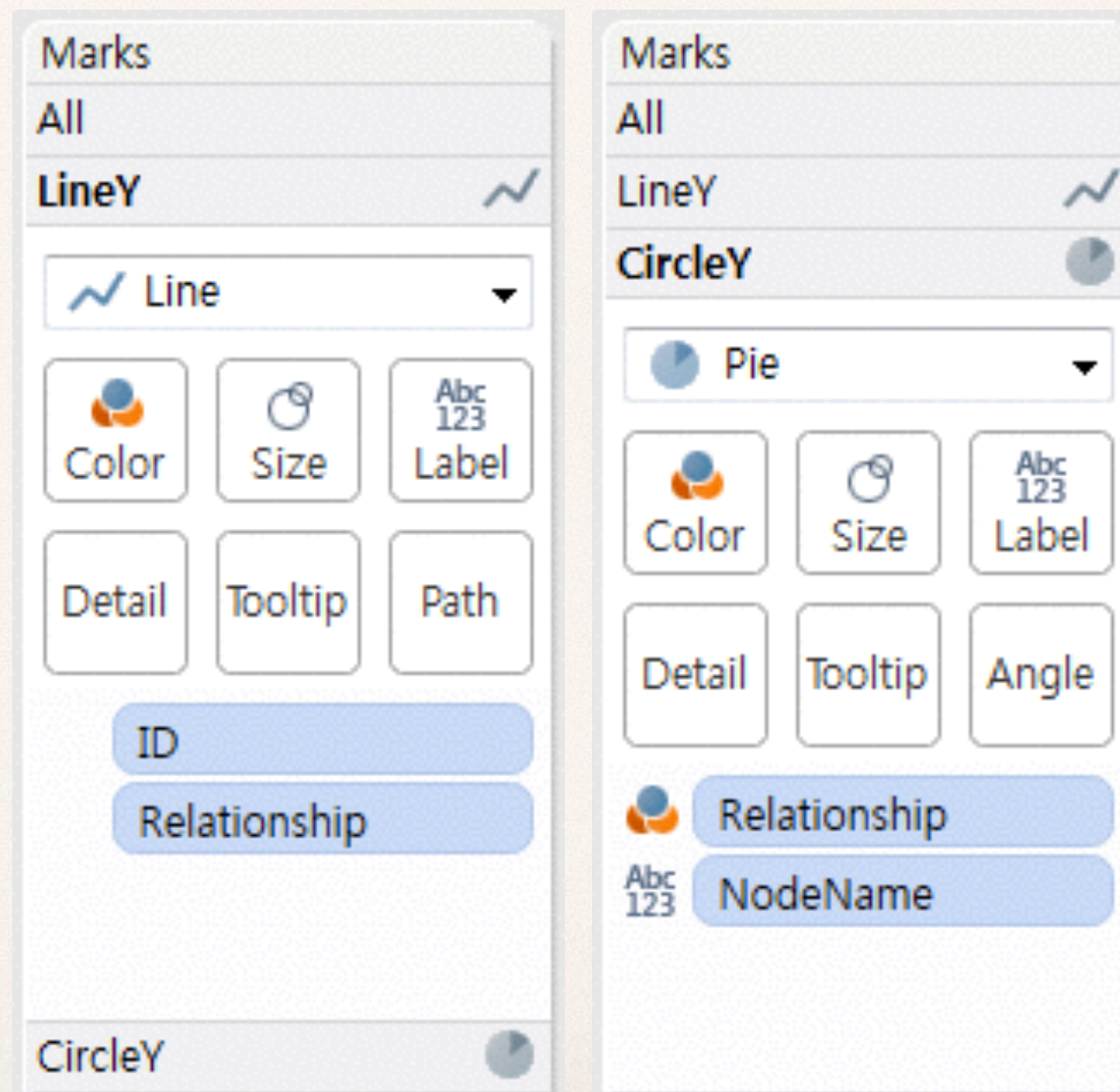
# Lab 3: Graph with Tableau



# Lab 3: Graph with Tableau



## Lab 3: Graph with Tableau



**Questions...?**

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