## Lec14 Intro to datasets

· Zachary Karate Club: 34 nodes and 78 edges

# **Lect15 Ingredients Network**

(butter, sugar, flour, vannila)->(oil, water)->(Tomato, Onion, Pepper, garlic)

# **Lec16 Synonmy Network**

Love->Friend->......; Enemy->Hate->...... Love X Hate. But there is a path from Love to Hate \_(REASON : Degradation of Synonimity)

# **Lec17 Web Graph**

• Webpage linking -> GOOGLE unleashed it! RAnking of search

### **Lec18 Social Network Datasets**

· Who could be his next friend? - Facebook

## **Lec19 Real Work Network Datasets**

#### Eg. of networks

- 1. Friendship (undirected)
- 2. Road(undirected)
- 3. Citation(directed)
- 4. Email(directed)
- 5. Collaboration/ coauthorship (undirected)

#### **Data Formats**

- CSV
- GML
- · Pajek Net
- GraphML
- · GEXF (By Gephi)

#### csv -> .csv/.txt \_

-> edge list, adj list, weigted edge list

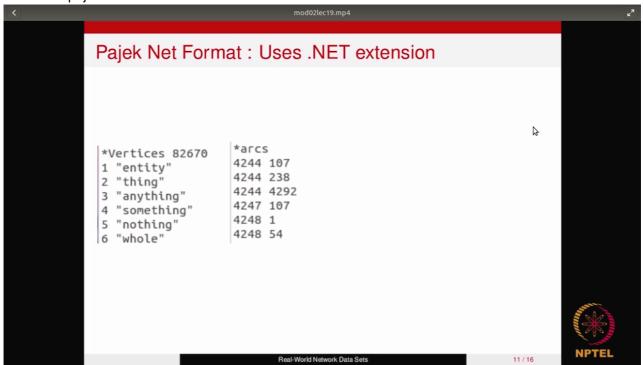
#### gml\_

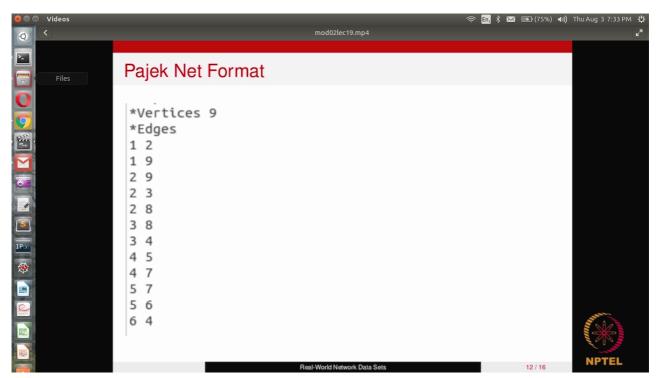
-> Graph Modelling Language

```
Without attributes
graph [
     node [
          id a
          label 'Node A'
      ]
      node [
          id b
          label 'Node b'
      ]
      edge [
          source a
          target b
          label 'E1'
      ]
]
With attributes
graph [
     heirarchic 1
      directed 1
      node [
          id a
          label 'Node A'
          graphics[
              x 0
              y 0
          ]
      ]
      node [
          id b
          label 'Node b'
          graphics[
              x 20
              y 30
          ]
      ]
      edge [
          source a
          target b
          label 'E1'
          LabelGraphics[
          text 'Happy New Year'
          ]
      ]
]
```

### Pajeck Net

· uses .net/.paj extension





```
Pajek Net Format with attributes

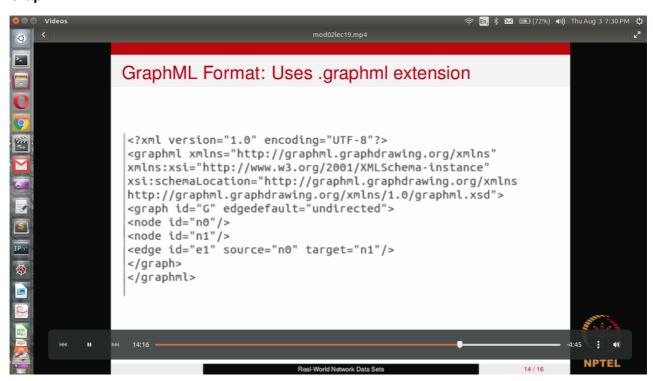
*arcs
4244 107 5

Pass World Network Data Sots

*arcs
13/16

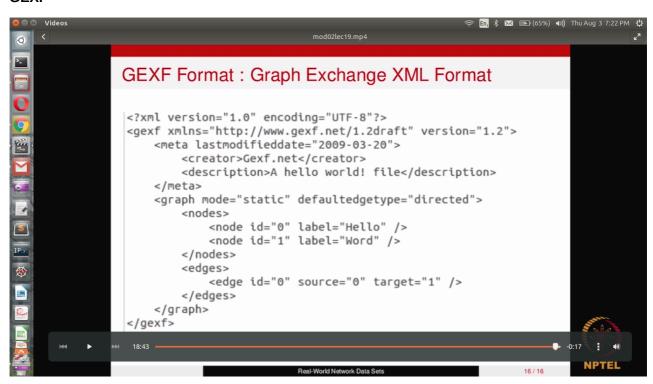
**NPTEL
```

### GraphML



```
En, 🖇 🖂 🖎 (74%) 🜒 Thu Aug 3 7:32 PM 🔱
Q
>_
                                                                                              GraphML Format with attributes
                                                                                                 <?xml version="1.0" encoding="UTF-8"?>
<graphml xmlns="http://graphml.graphdrawing.org/xmlns" xmlns:xsi="http://www.w3.org/200
xsi:schemaLocation="http://graphml.graphdrawing.org/xmlns http://graphml.graphdrawing.org/xmlns http://graphml.graphdrawing.org/
                                                                                                   <default>yellow</default>
                                                                                                   <pre
                                                                                                   <data key="d0">green</data>
                                                                                                   </node>
                                                                                                  <node id="n1"/>
<node id="n2">
                                                                                                   <data key="d0">blue</data>
                                                                                                   </node>
                                                                                                   <node id="n3">
                                                                                                   <data key="d0">red</data>
                                                                                                   </node>
                                                                                                   <edge id="e0" source="n0" target="n2">
                                                                                                   <data key="d1">1.0</data>
                                                                                                   </edge>
                                                                                                  <edge id="e1" source="n0" target="n1">
<data key="d1">1.0</data>
                                                                                                   </edge>
                                                                                                  <edge id="e2" source="n1" target="n3">
<data key="d1">2.0</data>
```

#### **GEXF**



## Lec20 How to download datasets

· Google Network datasets

(snap.stanford.edu/data, uci network data, konect, sonet for grahML datasets)