ANN - Lab 3

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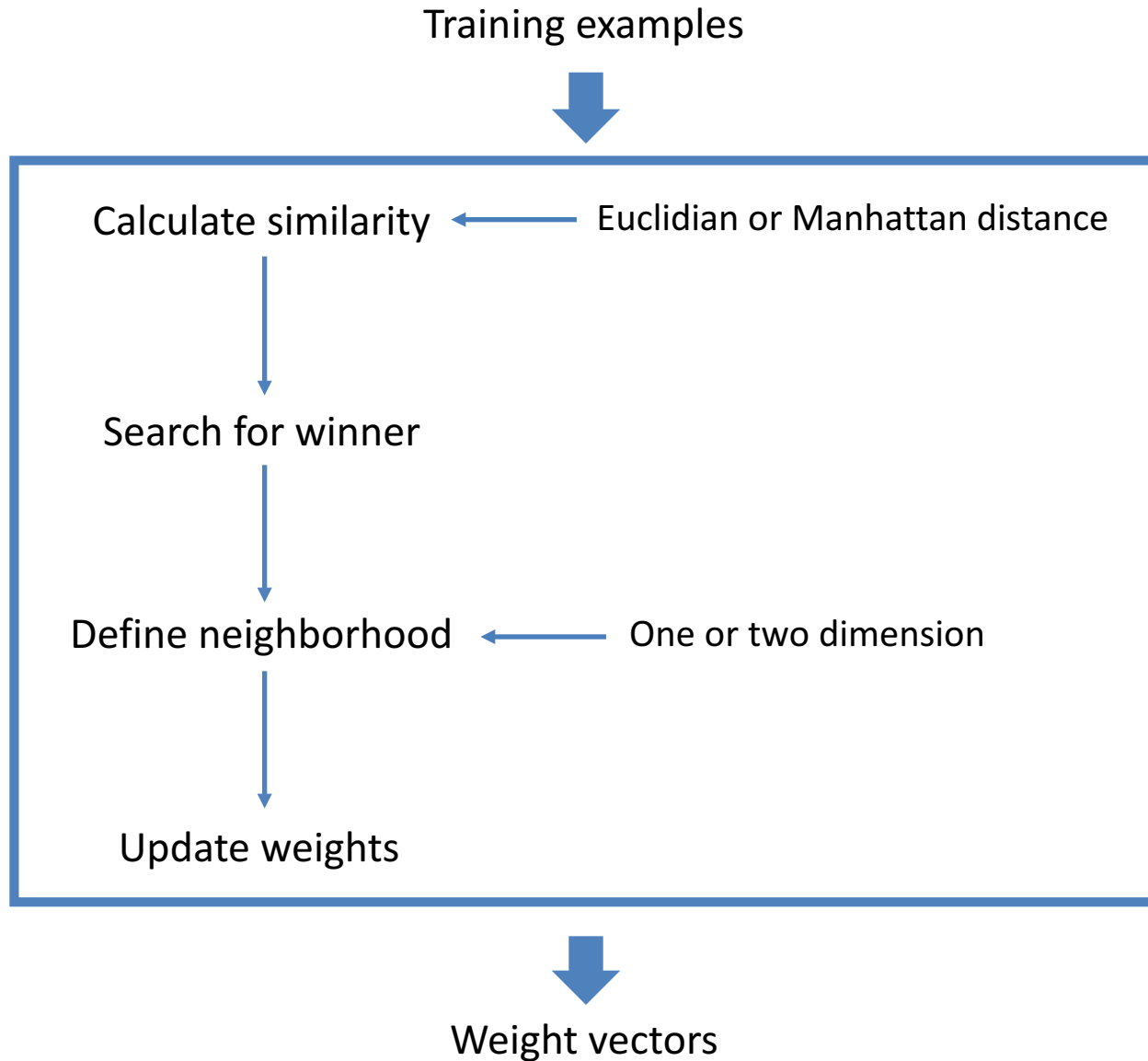
The Lab is about…

- Self-Organizing Maps (SOM) algorithm

- Its practical uses
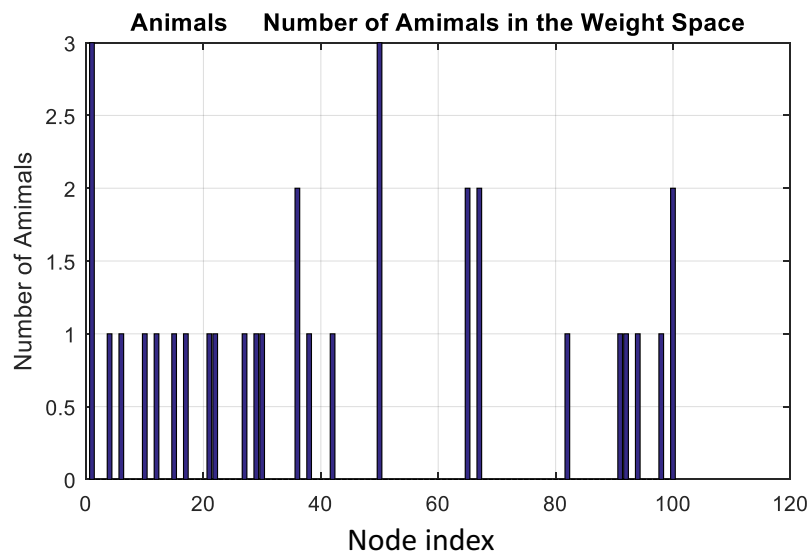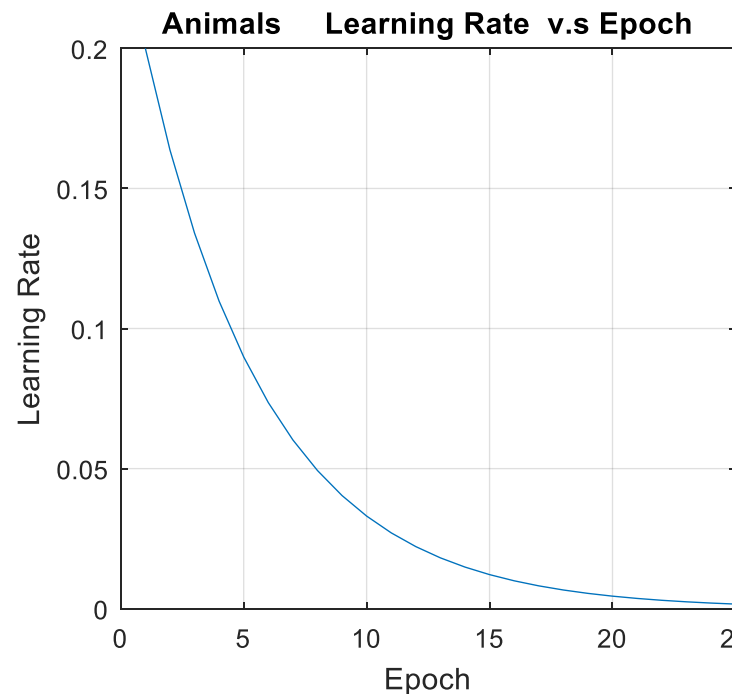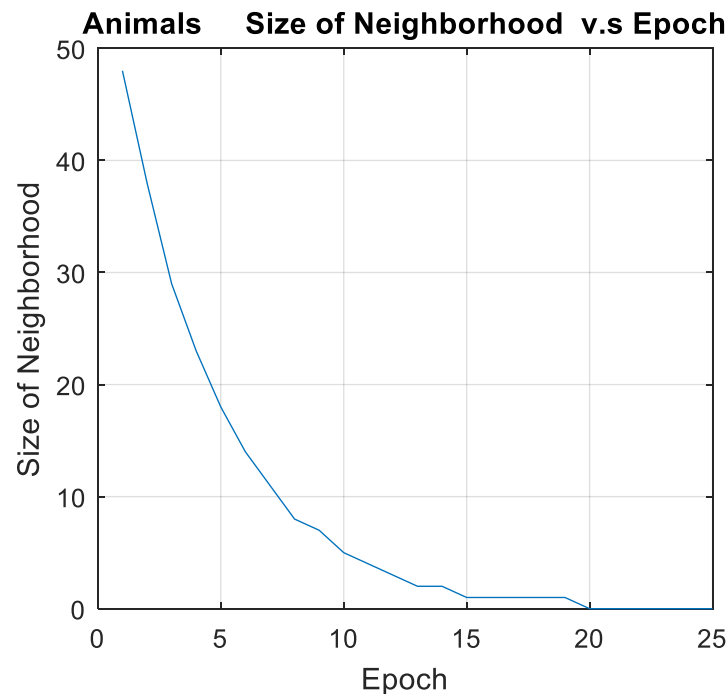
  - Folding high-dimensional spaces

  - Cluster data

SOM is …

- Mapping points in input space to those in output space

- Topology preservation: close input points → close output points

How it works…

Training examples

Calculate similarity ← Euclidian or Manhattan distance

Search for winner

Define neighborhood ← One or two dimension

Update weights

Weight vectors

Topological Ordering of Animal Species

Animals   Size of Neighborhood v.s Epoch

Animals   Learning Rate v.s Epoch

Animals   Number of Amimals in the Weight Space
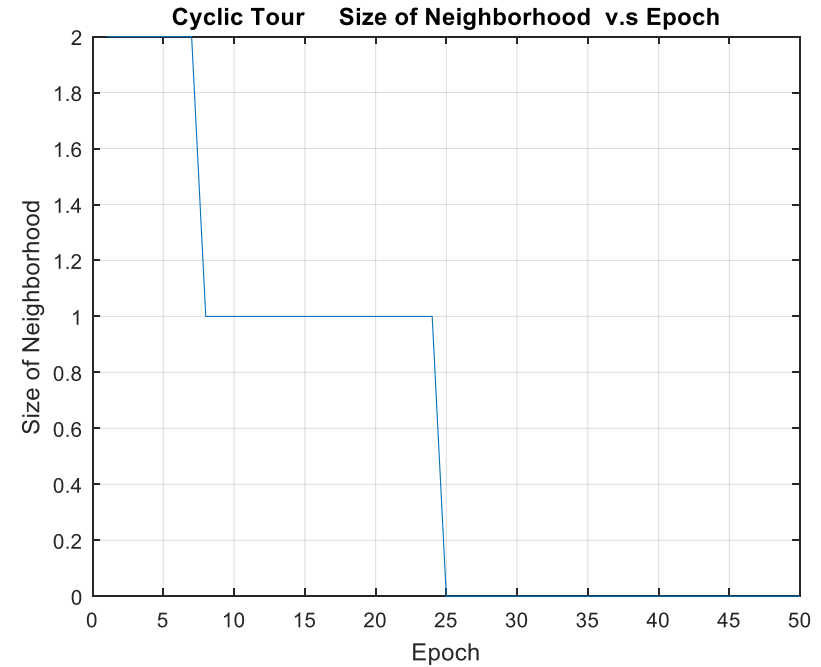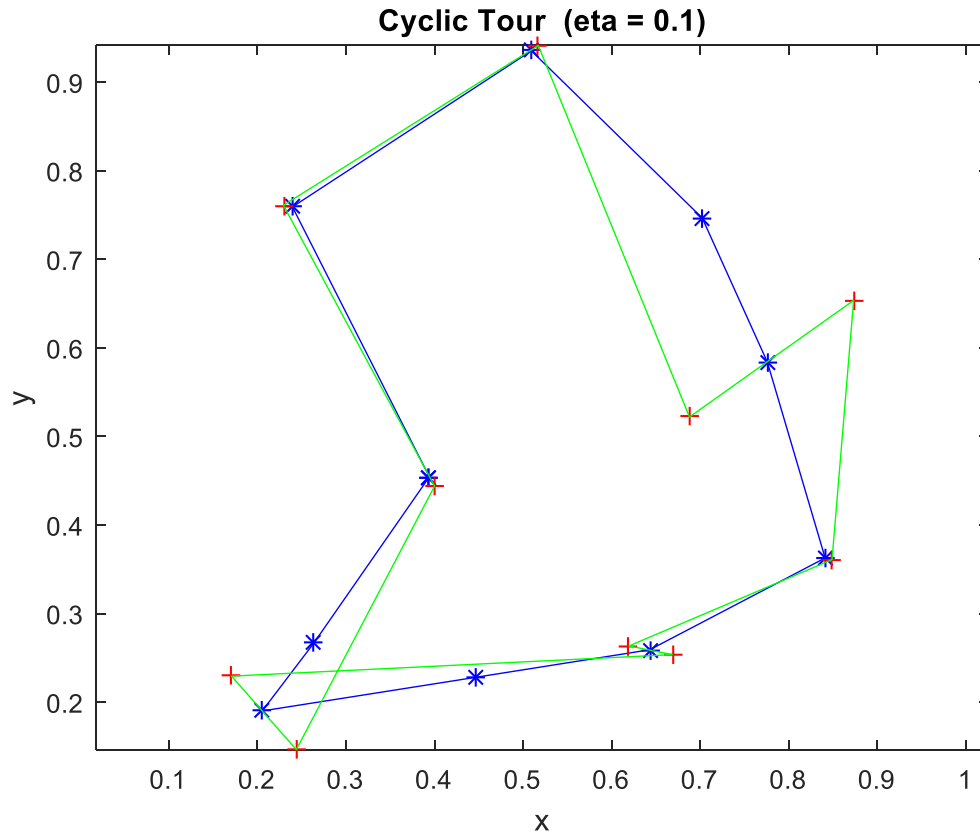
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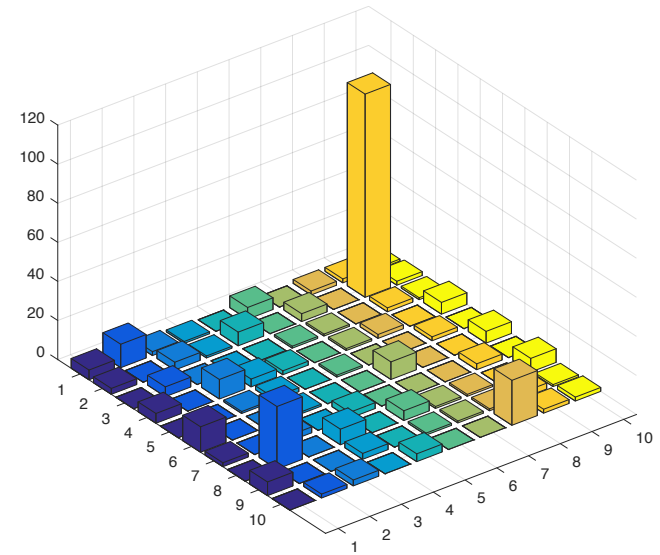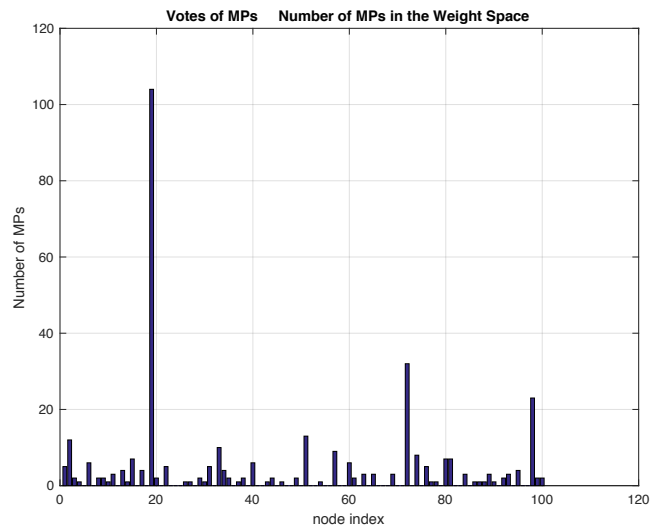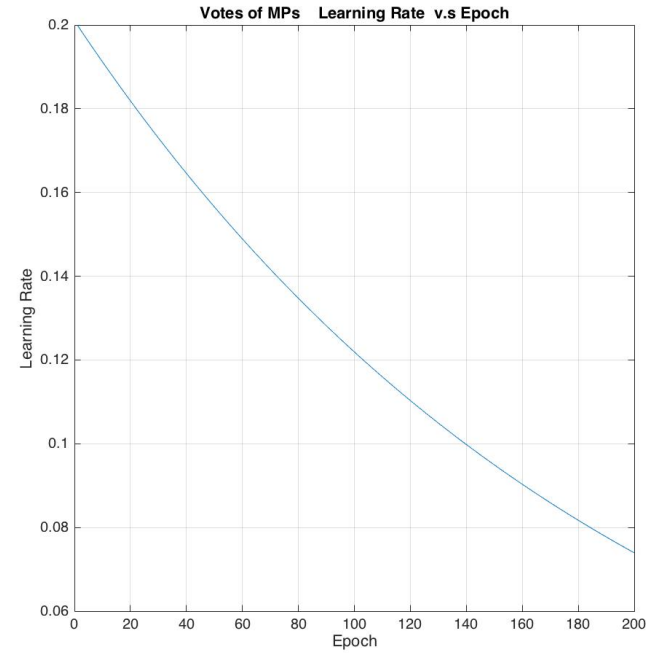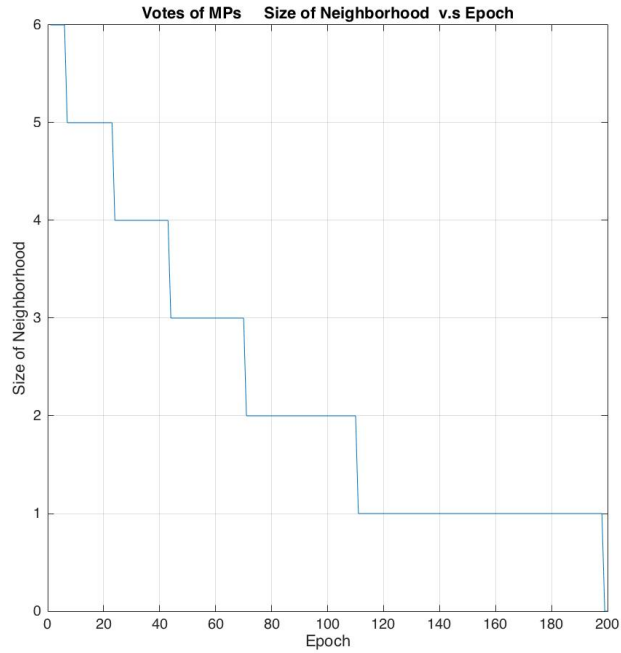'dragonfly'
'beetle'
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Observations:
- Good clustering

Cyclic Tour
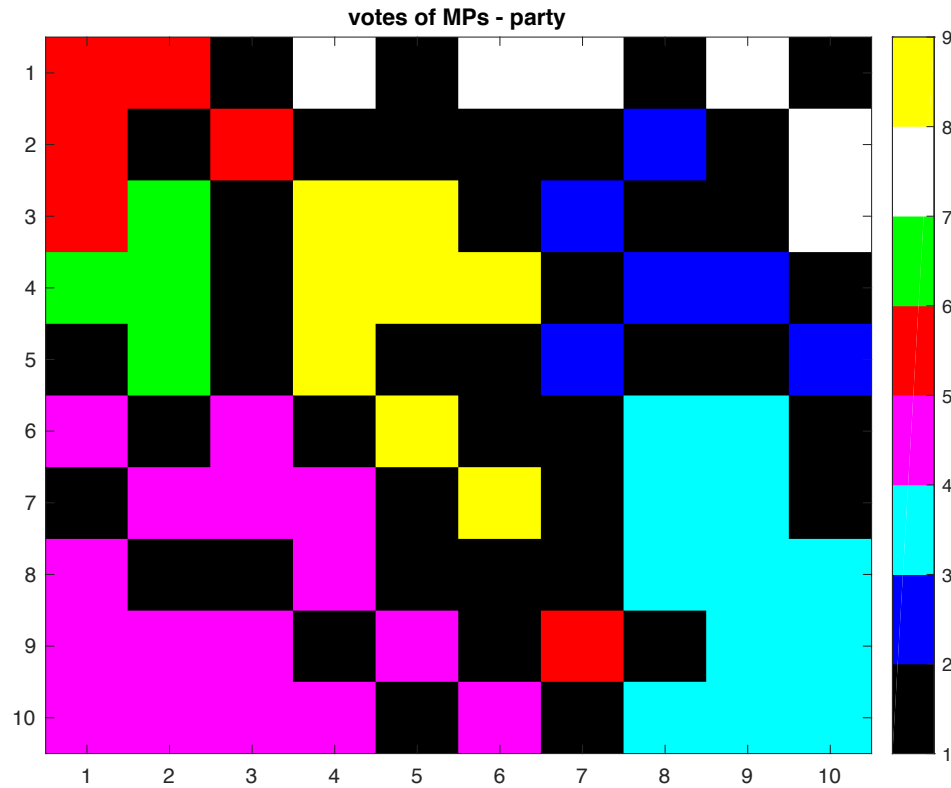

Cyclic Tour (eta = 0.1)

Cyclic Tour   Size of Neighborhood v.s Epoch

Observations:

- Tend to find a fairly short route which passes all cities

Votes of MPs

Votes of MPs

votes of MPs - party

Observations:

- Different parties tend to vote differently

Votes of MPs

votes of MPs - gender

votes of MPs - district
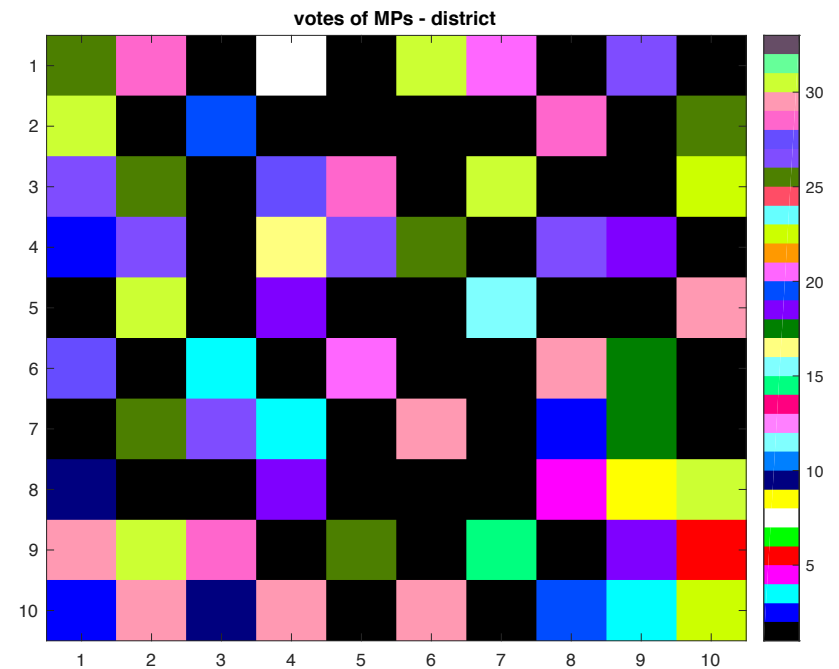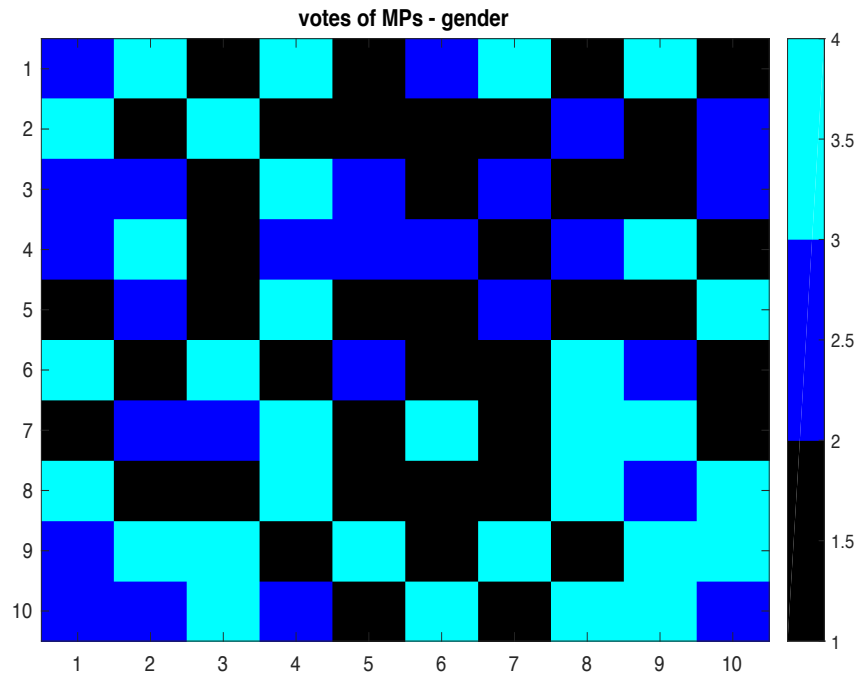
Observations:
- No rules can be found for different genders of MPs
- No rules can be found for different districts where the MPs are from