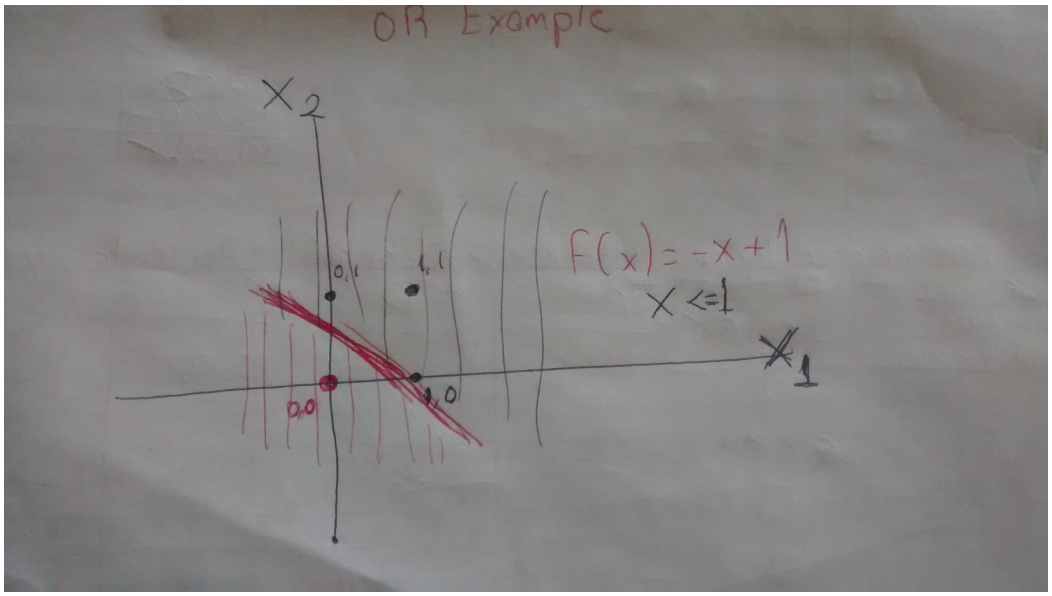
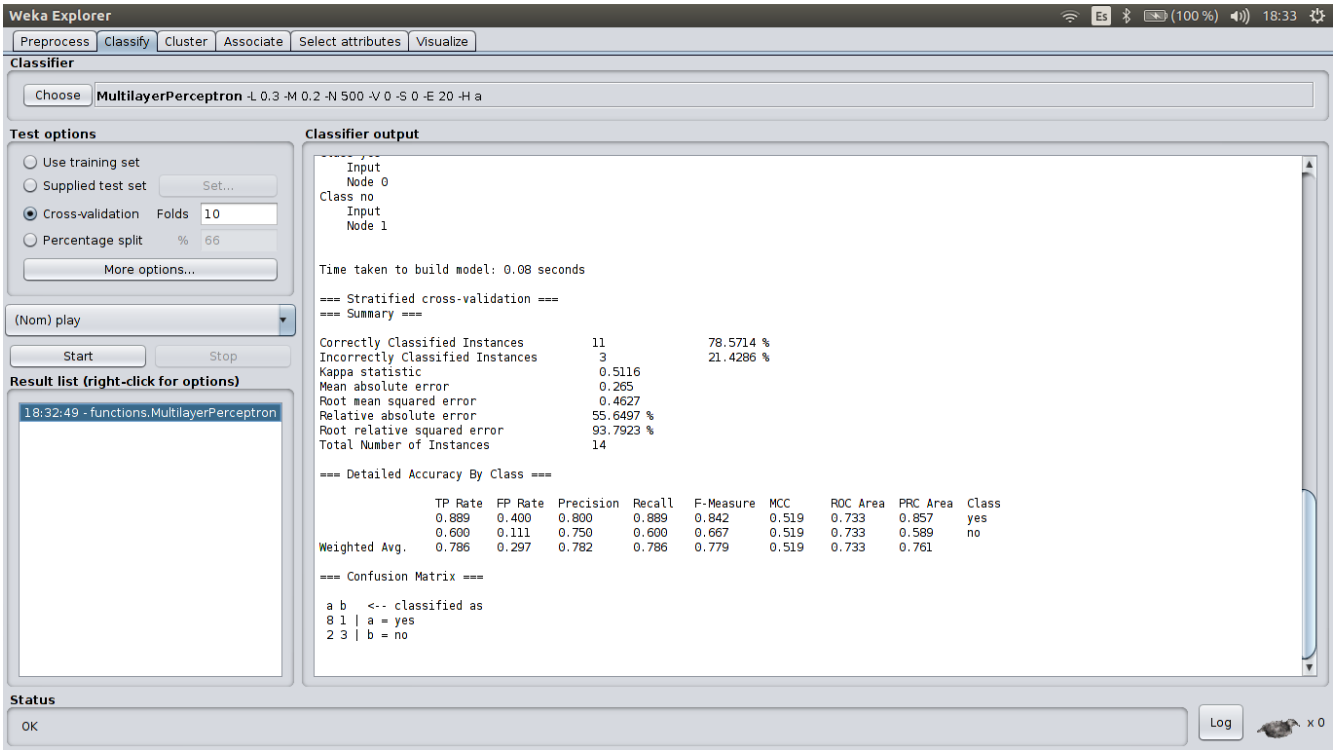
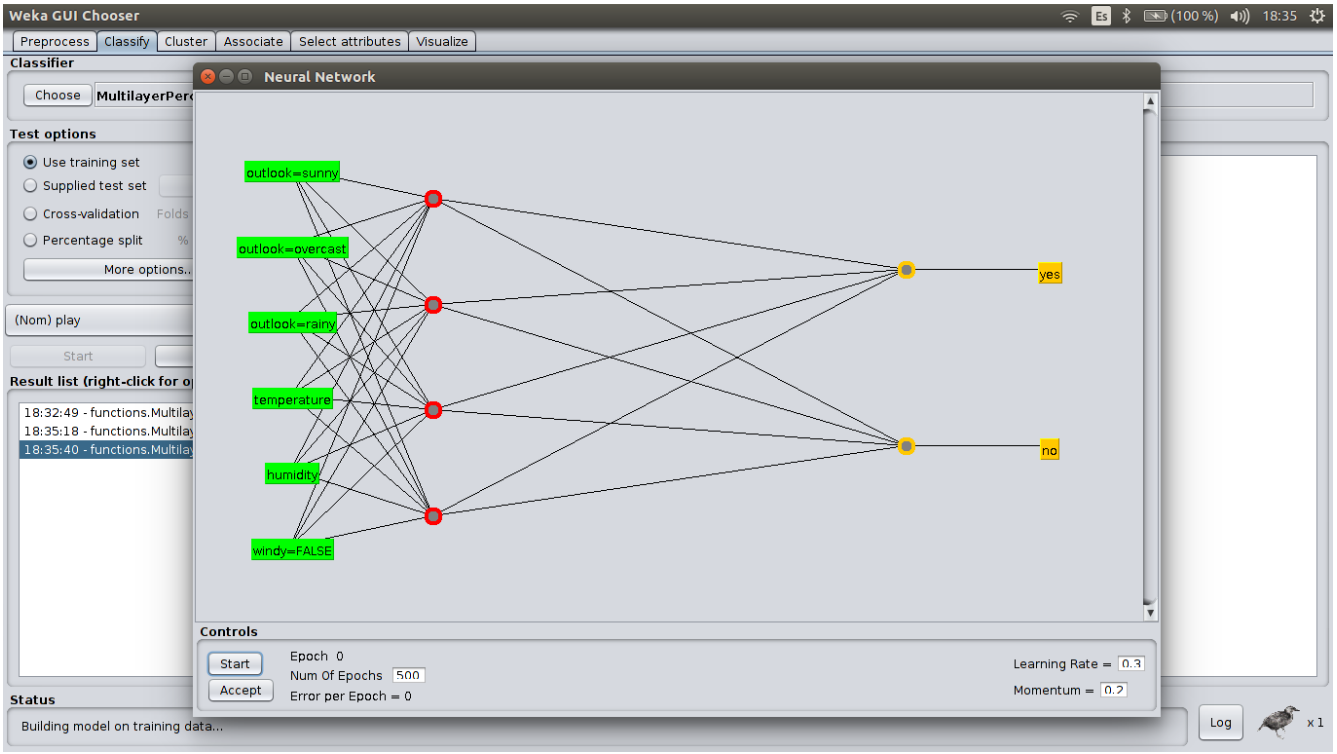
REPORT

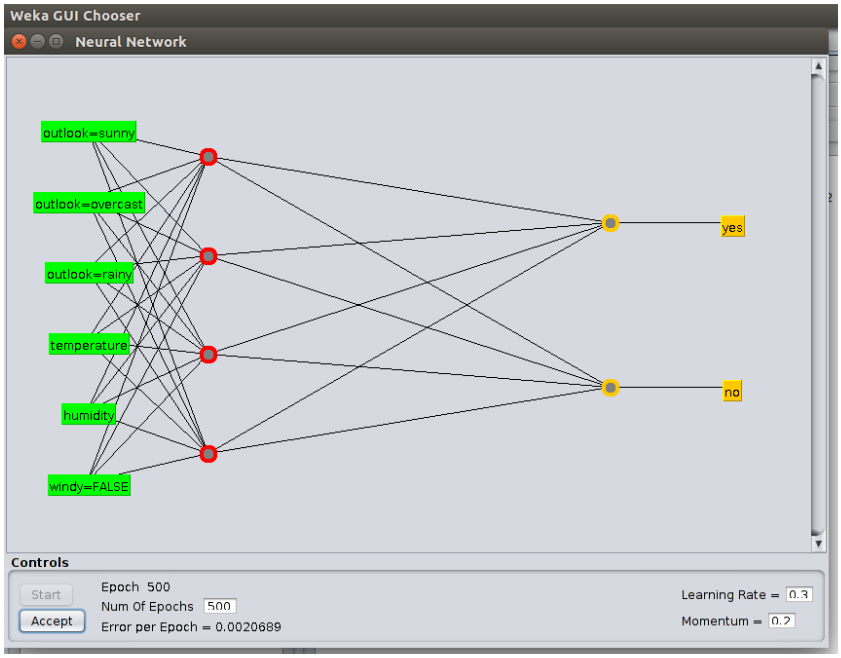
PART 1

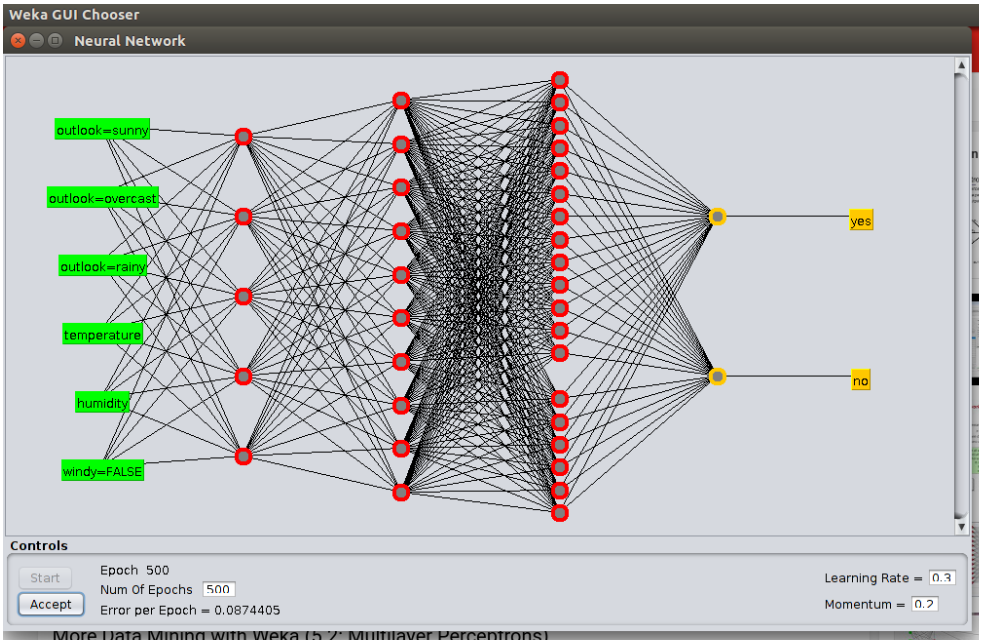


PART 2




Weka GUI Chooser
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
Test options
Use training set
Supplied test set
Cross-validation
Percentage split
More options...
(Nom) play
Start
Result list (right-click for o
18:32:49 - functions.Multila
18:35:18 - functions.Multila
18:35:40 - functions.Multila
Status
Building model on training data...
Log
x 1
Neural Network
outlook=sunny
outlook=overcast
outlook=rainy
temperature
humidity
windy=FALSE
yes
no
Controls
Start
Accept
Epoch 0
Num Of Epochs 500
Error per Epoch = 0
Learning Rate = 0.3
Momentum = 0.2


Weka GUI Chooser
Neural Network
outlook=sunny
outlook=overcast
outlook=rainy
temperature
humidity
windy=FALSE
yes
no
Controls
Start
Accept
Epoch 500
Num Of Epochs 500
Error per Epoch = 0.0020689
Learning Rate = 0.3
Momentum = 0.2



- **Explanations as to what are ANNs good for.**
  - Perhaps the greatest advantage of ANNs is their ability to be used as an arbitrary function approximation mechanism that 'learns' from observed data.
  - The advantages of deep neural networks are record-breaking accuracy on a whole range of problems including image and sound recognition, text and time series analysis, etc.
- **Where would you use them?**
  - Function approximation, or regression analysis, including time series prediction, fitness approximation and modeling.
  - Classification, including pattern and sequence recognition, novelty detection and sequential decision making.
  - Data processing, including filtering, clustering, blind source separation and compression.
  - Robotics, including directing manipulators, prosthesis.
  - Control, including computer numerical control.
- **Are they worth the effort implementing or not?**
  - It depends of the problem, there are other algorithms that are faster but ANNs have a great accuraccy.
- **What kinds of problems do they not solve?**
  - They can be hard to tune to ensure they learn well, and therefore hard to debug;

- They do not have explanatory power; i.e. they main extract the best signals to accurately classify and cluster data, but they will not tell you why they reached a certain conclusion;
- They are computationally intensive to train; i.e. you need a lot of chips and a distributed run-time to train on very large datasets.