**Problem 3 – Netica – Naïve Bayes**

Results – Test set

**Naïve Bayes Network – Newspaper Categorization articles based on words: Quarter, Monday, Game, Rain**

Diagram

Description automatically generated

Table

Description automatically generated

**Tree Augmented Bayes Model** - **Newspaper Categorization articles based on words: Quarter, Monday, Game, Rain**

A picture containing text, sky

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Table

Description automatically generated

**C) comparison between Naïve Bayes and TAN model – error rate**

The error rate in Naïve Bayes was about 34.17%, while TAN yielded 55.78%. The Naïve Bayes model had a simplistic connection between the effect (dependent) nodes and the target node, i.e. only a single link between cause and effect. For TAN, however, the link network was a bit complex where the effects depended on each other besides depending on the target node (classifier). This, as a result, without detailed specification can lead the classifier to incorrectly label the article, which is what’s evident on the test data.