music

Music Tribe UKs Machine Learning Test

The following tasks have been designed to evaluate your knowledge of machine learning and data analysis.

You have been provided with a dataset for use with the following tasks. The dataset comprises a number of data files, which contain extracted data for a number of musical instruments.

Task 1 - Data Loading
Write a utility that can load the data from the files. The loaded data should be in a format that can be used by common machine learning frameworks (e.g. SciKit-Learn), i.e. it should produce one array, X, of features, and one array, y, of classification labels.

Task 2 - Data Analysis and Visualization
Write some code to perform some basic statistical analysis and visualization to understand the nature of the provided data.

Task 3 - Classification
Write some code to train and evaluate a classifier using the data. You should carefully consider your choice of two different classification methods, and the methods you use to evaluate the classifiers.

Task 4 - Report
Please provide a report which discusses the insights you gained from undertaking Task 2. The report should also consider the following:
- How did the classifier perform, and how did you evaluate the classifier's performance?
- What were the pros & cons of the classifier you chose?
- Did you notice anything interesting about the dataset?
- What would be required to scale this up for use in a product?

It would be beneficial to include some figures (e.g. plots) to support your report.