# Deliverable 3: First solution + validation set accuracy

## Music Genre Classification project

Link to the project - https://drive.google.com/drive/folders/15AjJZvY0fTUZM0e5qmZW60V7dvK8unJ1?usp=sharing

1) Instruction to run the trained neural network on a single validation sample -
    Open the Colab notebook - music_genre_classification.ipynb and run the cells in the notebook.

2) This model has seven layers. It has two convolution layers with relu activation function with filter size=64. It then uses a dropout layer followed maxpooling layer with 2 as a pool size. The model ends with two dense functions to make the final classification.

The optimizer used is Adam with a learning rate of 0.001. The loss function used is sparse_categorical_cross_entropy and the metrics used is 'accuracy'

    The training set accuracy is 79.8% and around 61% for the validation set. The precision and recall values for all the 10 music genre classes are calculated. **Precision** attempts to answer the following question: What proportion of positive identifications was actually correct?
**Recall** attempts to answer the following question:What proportion of actual positives was identified correctly?

    The model is performing well for both the training and testing sets with around 70% of accuracy. The validation accuracy increases with the number of epoch. We can improve the accuracy by either tuning this model(different hyperparametrs parameters) or try other models like RNN to see if we get better results