

Credicxo Assignment Submission

**PRELIMINARY TASK**

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### **Abstract**

The Dataset consist of 170 features and total of the 6598 entity as wholesome. The given dataset contains details about organic chemical compounds including their chemical features, isomeric conformation, names and the classes in which they are classified into two groups and the given task is to define a model that will have bias to predict the correct class. For this Artificial Neural Network being picked in this model designing to solve the task of classification.

### **Preprocessing of Dataset**

Id and conformation\_name being dropped out from the dataset as sound to be the inappropriate features along with the dropping of the null values from the dataset.

Label Encoding and L2 normalization applied on the dataset to fit the values in the range of the features and convert the categorial data into the numerical values to fit the model and interpret the result.

For the optimum result training and testing split on the data applied in the ration of 80/20 percentage of the dataset.

### **Model defining**

Artificial Neural Network approach applied on this dataset as the mythology to solve this task.

The given picture show the architecture of the model:

Model: "sequential"

Layer (type)	Output Shape	Param #
dense (Dense)	(None, 256)	43008
dropout (Dropout)	(None, 256)	0
dense_1 (Dense)	(None, 512)	131584
dropout_1 (Dropout)	(None, 512)	0
dense_2 (Dense)	(None, 512)	262656
dropout_2 (Dropout)	(None, 512)	0
dense_3 (Dense)	(None, 128)	65664
dropout_3 (Dropout)	(None, 128)	0
dense_4 (Dense)	(None, 64)	8256
dropout_4 (Dropout)	(None, 64)	0
dense_5 (Dense)	(None, 1)	65
Total params: 511,233		
Trainable params: 511,233		
Non-trainable params: 0		

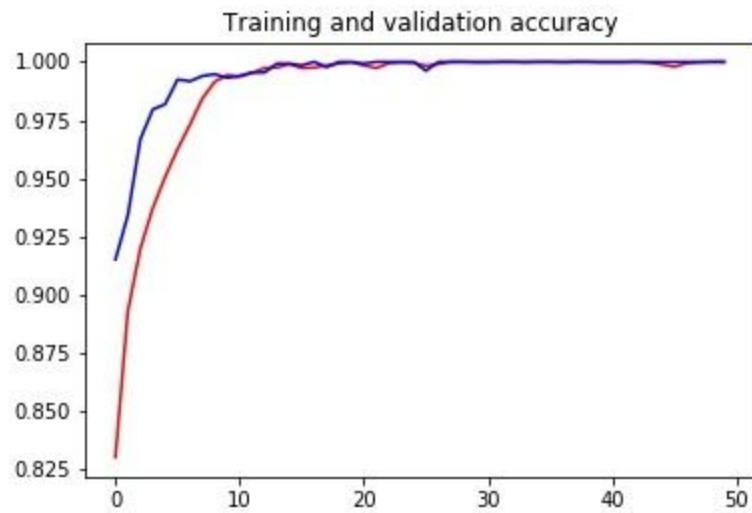
Adam as optimizer and binary-crossentropy error function inducted in this training tuning approach to train the model and back propagate the learning. Training performed for 50 epochs and along with batch size of 128

## Results

After the training on the pre mentioned parameter and tuning updates to have the outcome.

Four different parameter used to analyse the result i.e. Accuracy, Precision, Recall, F1 score.

The outcome of the various parameter are shown below:



Accuracy of model 1.0  
Precision of model 1.0  
Recall of model 1.0  
F1 score of model 1.0

